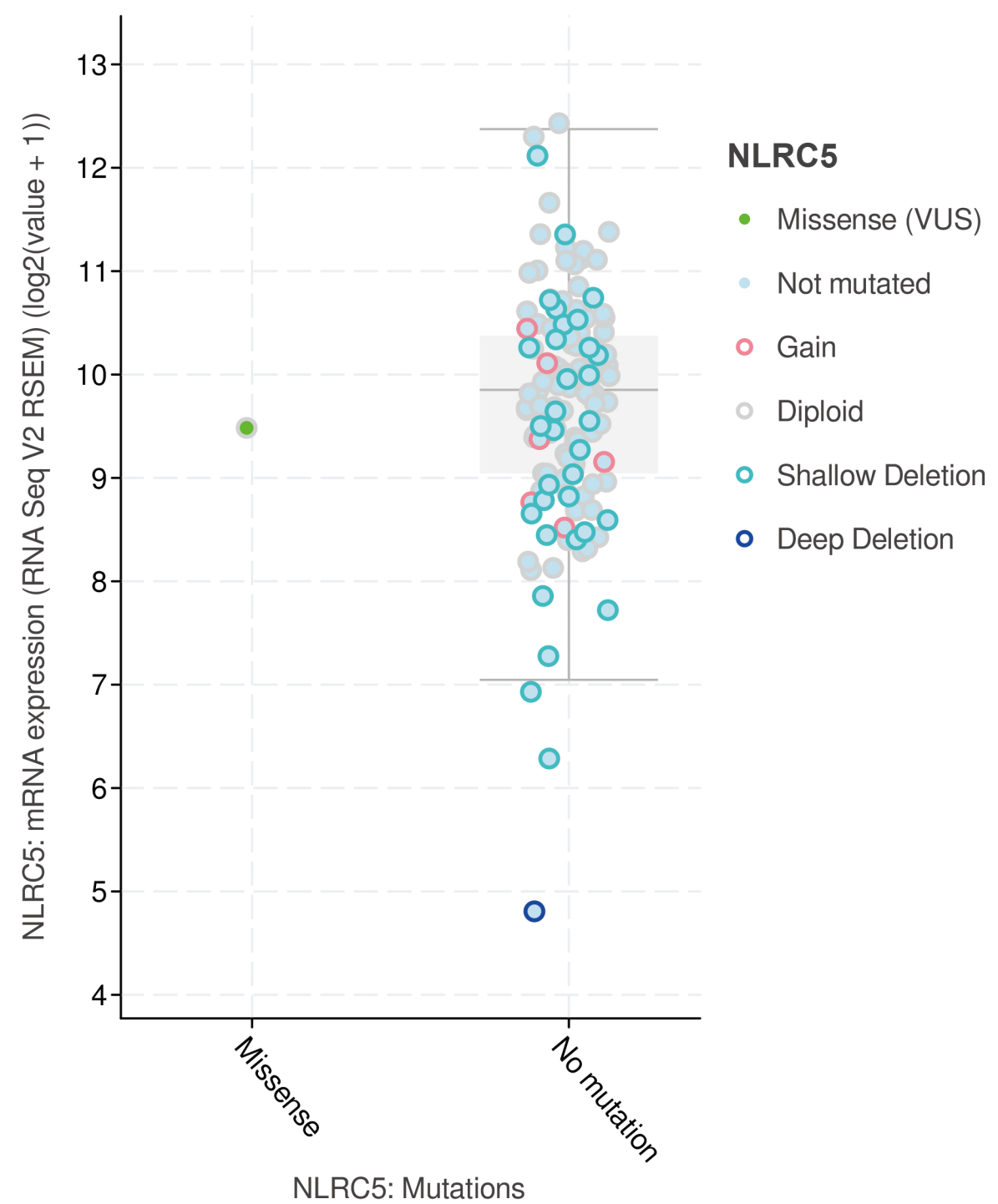
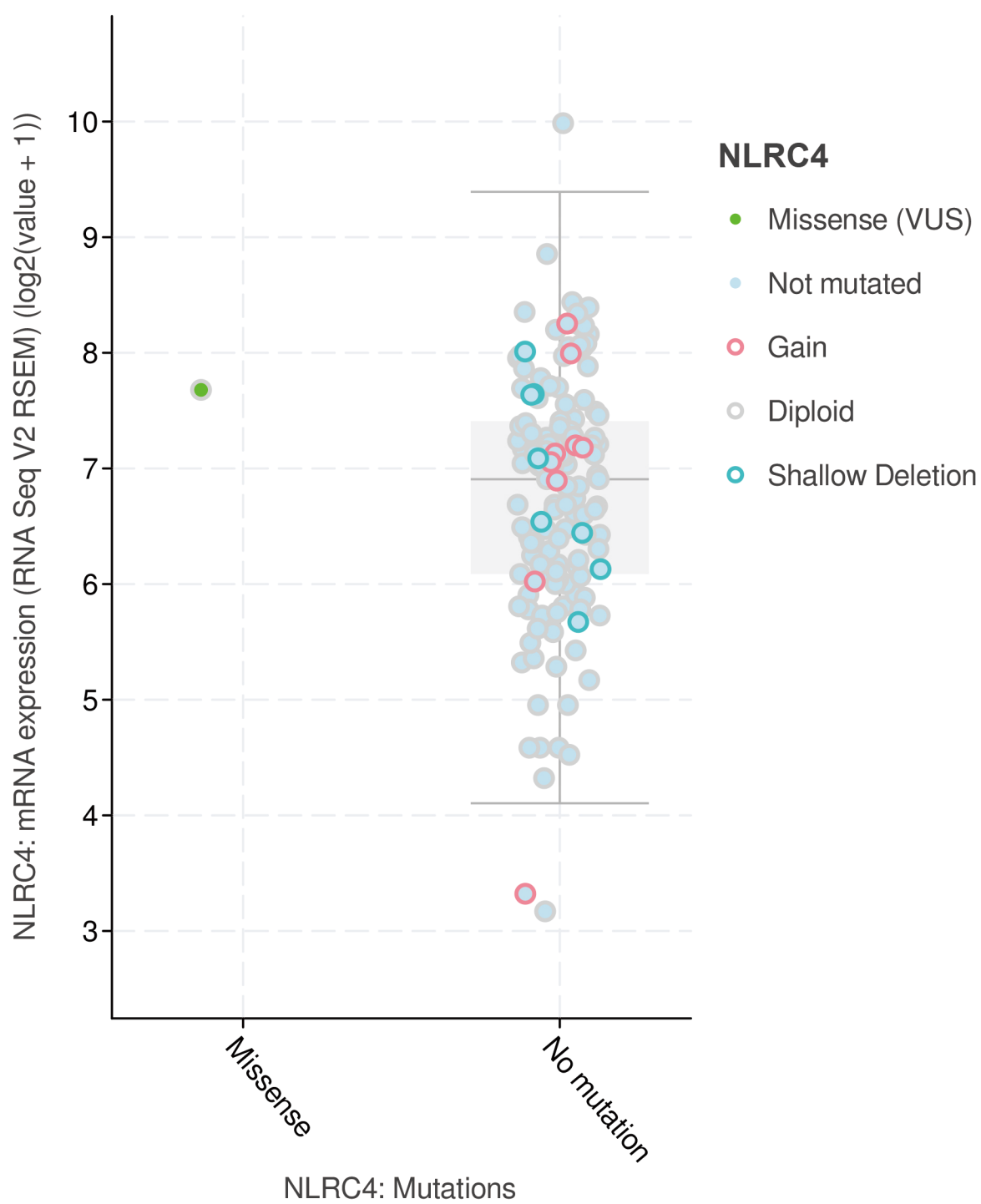
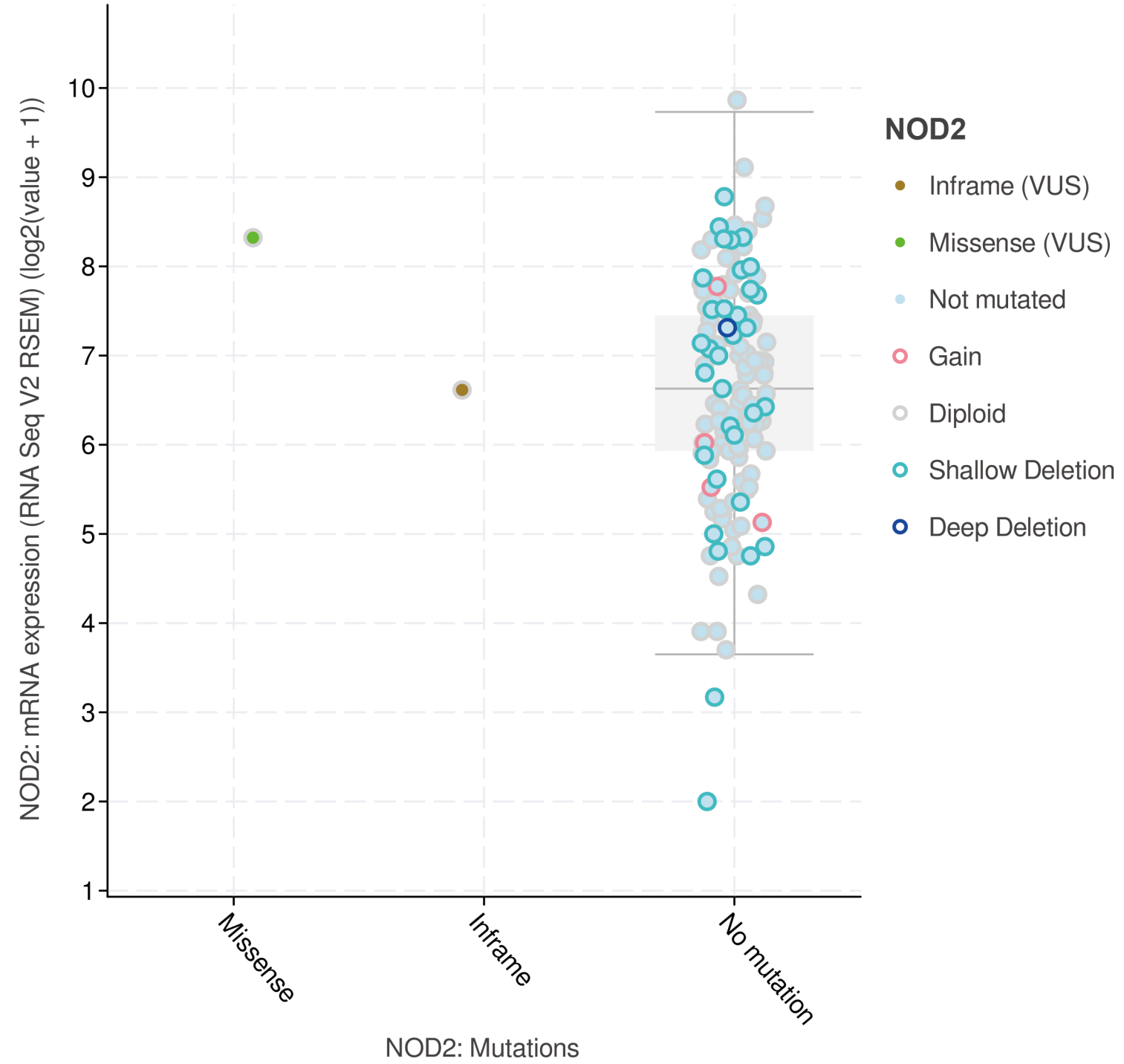
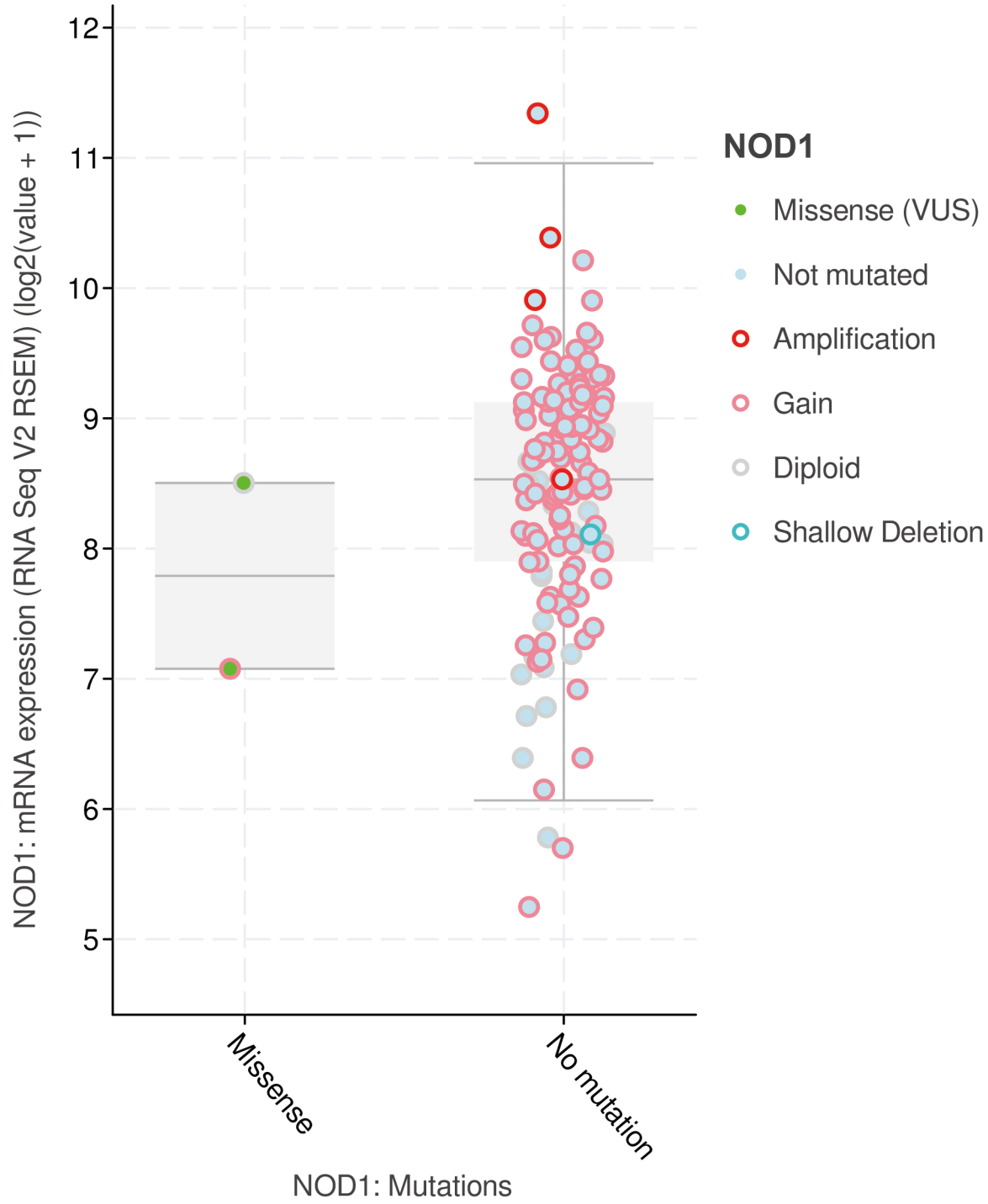
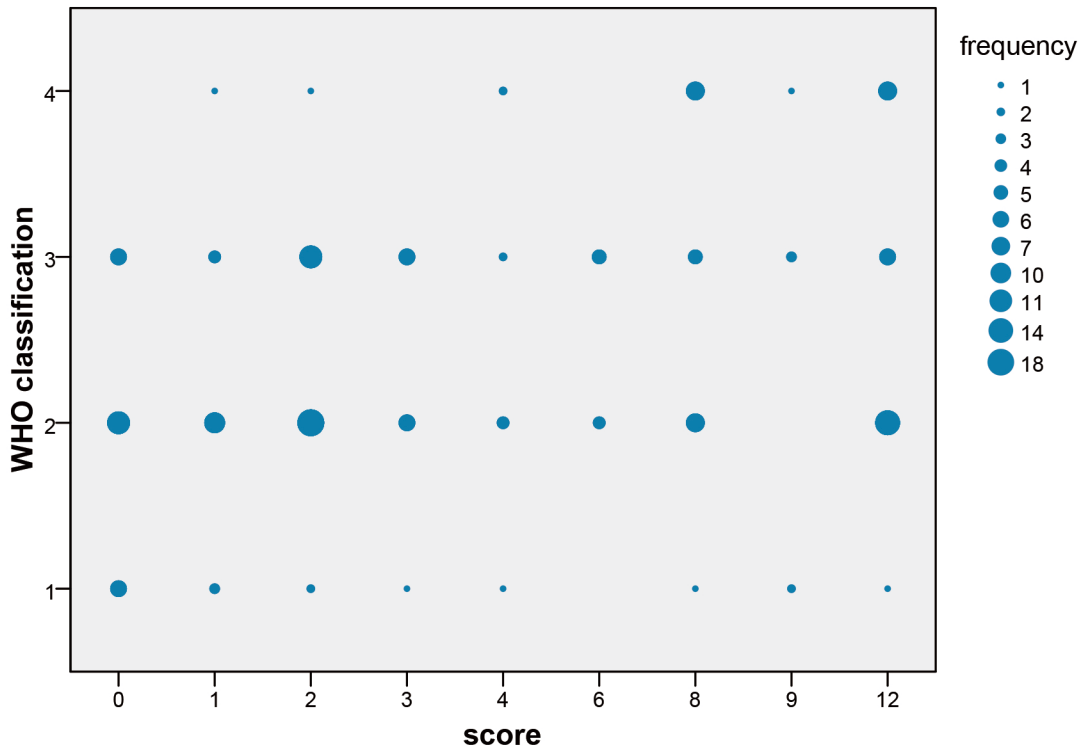


**Figure S1. Mutation position of NOD1, NOD2, NLRC4, and NLRC5.** Green circles present missense mutations (unknown significance), brown circles present inframe mutations (unknown significance).



**Figure S2. Correlations between mutations and mRNA expression.** Sample circles are colored with respect to the corresponding mutation types and copy number.



**Figure S3. Correlations between expression level score of NOD1 and WHO classification.**

Table S1. Data of GO analysis

ONTOL OGY	ID	Description	Gene Ratio	Bg Ratio	p value	p. adjust	Q value	geneID	Count
BP	GO:000 6959	humoral immune response	27/265	356/1 8670	1.42088 E-12	4.01539 E-09	3.66735 E-09	CR1/FCN1/IGHE/IGHG2/IGHG4/IGHM/IL6/PI3/KLK7/REG1A/REG1B/CCL13/CXCL5/CXCL13/CFHR4/KLK5 /IGHV6-1/IGHV5-51/IGHV4-61/IGHV4-59/IGHV4-31/IGHV4-28/IGHV3-15/IGHV1-18/IGKV5-2/IGKV1- 39/IgLL5	27
BP	GO:007 2376	protein activation cascade	20/265	198/1 8670	7.38162 E-12	1.04302 E-08	9.52617 E-09	APOH/CR1/F13A1/FCN1/IGHE/IGHG2/IGHG4/IGHM/CFHR4/IGHV6-1/IGHV5-51/IGHV4-61/IGHV4- 59/IGHV4-31/IGHV4-28/IGHV3-15/IGHV1-18/IGKV5-2/IGKV1-39/IgLL5	20
BP	GO:000 6910	phagocytosis, recognition	14/265	84/18 670	1.2512E -11	1.17864 E-08	1.07648 E-08	FCN1/IGHE/IGHG2/IGHG4/IGHM/IGHV6-1/IGHV5-51/IGHV4-61/IGHV4-59/IGHV4-31/IGHV4-28/IGHV3- 15/IGHV1-18/IgLL5	14
BP	GO:000 6956	complement activation	18/265	175/1 8670	6.28851 E-11	4.44283 E-08	4.05774 E-08	CR1/FCN1/IGHE/IGHG2/IGHG4/IGHM/CFHR4/IGHV6-1/IGHV5-51/IGHV4-61/IGHV4-59/IGHV4-31/IGHV4- 28/IGHV3-15/IGHV1-18/IGKV5-2/IGKV1-39/IgLL5	18
BP	GO:000 6958	complement activation, classical pathway	16/265	137/1 8670	1.10299 E-10	6.23412 E-08	5.69377 E-08	CR1/IGHE/IGHG2/IGHG4/IGHM/IGHV6-1/IGHV5-51/IGHV4-61/IGHV4-59/IGHV4-31/IGHV4-28/IGHV3- 15/IGHV1-18/IGKV5-2/IGKV1-39/IgLL5	16
BP	GO:000 2455	humoral immune response mediated by circulating immunoglobul in	16/265	150/1 8670	4.33176 E-10	2.04026 E-07	1.86342 E-07	CR1/IGHE/IGHG2/IGHG4/IGHM/IGHV6-1/IGHV5-51/IGHV4-61/IGHV4-59/IGHV4-31/IGHV4-28/IGHV3- 15/IGHV1-18/IGKV5-2/IGKV1-39/IgLL5	16
BP	GO:000 6911	phagocytosis, engulfment	14/265	118/1 8670	1.33906 E-09	5.40597 E-07	4.9374E -07	IGHE/IGHG2/IGHG4/IGHM/THBS1/IGHV6-1/IGHV5-51/IGHV4-61/IGHV4-59/IGHV4-31/IGHV4-28/IGHV3- 15/IGHV1-18/IgLL5	14
BP	GO:009 9024	plasma membrane invagination	14/265	127/1 8670	3.54825 E-09	1.25342 E-06	1.14478 E-06	IGHE/IGHG2/IGHG4/IGHM/THBS1/IGHV6-1/IGHV5-51/IGHV4-61/IGHV4-59/IGHV4-31/IGHV4-28/IGHV3- 15/IGHV1-18/IgLL5	14
BP	GO:001 0324	membrane invagination	14/265	135/1 8670	7.89603 E-09	2.47935 E-06	2.26445 E-06	IGHE/IGHG2/IGHG4/IGHM/THBS1/IGHV6-1/IGHV5-51/IGHV4-61/IGHV4-59/IGHV4-31/IGHV4-28/IGHV3- 15/IGHV1-18/IgLL5	14
BP	GO:005 0871	positive regulation of	14/265	142/1 8670	1.52006 E-08	4.29569 E-06	3.92335 E-06	IGHE/IGHG2/IGHG4/IGHM/IL6/IGHV6-1/IGHV5-51/IGHV4-61/IGHV4-59/IGHV4-31/IGHV4-28/IGHV3- 15/IGHV1-18/IgLL5	14

		B cell activation							
BP	GO:0019724	B cell mediated immunity	17/265	221/18670	1.86332E-08	4.78705E-06	4.37213E-06	CD70/CR1/IGHE/IGHG2/IGHG4/IGHM/IGHV6-1/IGHV5-51/IGHV4-61/IGHV4-59/IGHV4-31/IGHV4-28/IGHV3-15/IGHV1-18/IGKV5-2/IGKV1-39/IGLL5	17
BP	GO:0002449	lymphocyte mediated immunity	21/265	352/18670	3.44632E-08	8.11608E-06	7.41261E-06	CD1B/CD70/CR1/IGHE/IGHG2/IGHG4/IGHM/IL6/KLRC2/LEP/IGHV6-1/IGHV5-51/IGHV4-61/IGHV4-59/IGHV4-31/IGHV4-28/IGHV3-15/IGHV1-18/IGKV5-2/IGKV1-39/IGLL5	21
BP	GO:0050853	B cell receptor signaling pathway	13/265	129/18670	3.85468E-08	8.37948E-06	7.65318E-06	IGHE/IGHG2/IGHG4/IGHM/IGHV6-1/IGHV5-51/IGHV4-61/IGHV4-59/IGHV4-31/IGHV4-28/IGHV3-15/IGHV1-18/IGLL5	13
BP	GO:0042742	defense response to bacterium	20/265	330/18670	5.70565E-08	1.15173E-05	1.0519E-05	IGHE/IGHG2/IGHG4/IGHM/IL6/LBP/KLK7/CCL20/CXCL13/KLK5/IGHV6-1/IGHV5-51/IGHV4-61/IGHV4-59/IGHV4-31/IGHV4-28/IGHV3-15/IGHV1-18/DEFB124/IGLL5	20
BP	GO:0008037	cell recognition	16/265	215/18670	7.81478E-08	1.47231E-05	1.34469E-05	EPHB1/FCN1/IGHE/IGHG2/IGHG4/IGHM/IGHV6-1/IGHV5-51/IGHV4-61/IGHV4-59/IGHV4-31/IGHV4-28/IGHV3-15/IGHV1-18/CD209/IGLL5	16
BP	GO:0016064	immunoglobulin mediated immune response	16/265	218/18670	9.46761E-08	1.67222E-05	1.52727E-05	CR1/IGHE/IGHG2/IGHG4/IGHM/IGHV6-1/IGHV5-51/IGHV4-61/IGHV4-59/IGHV4-31/IGHV4-28/IGHV3-15/IGHV1-18/IGKV5-2/IGKV1-39/IGLL5	16
BP	GO:1990868	response to chemokine	11/265	97/18670	1.29604E-07	2.03479E-05	1.85842E-05	CCR8/XCR1/GPR17/REG1A/CCL7/CCL11/CCL13/CCL18/CCL20/CXCL5/CXCL13	11
BP	GO:1990869	cellular response to chemokine	11/265	97/18670	1.29604E-07	2.03479E-05	1.85842E-05	CCR8/XCR1/GPR17/REG1A/CCL7/CCL11/CCL13/CCL18/CCL20/CXCL5/CXCL13	11
BP	GO:0002460	adaptive immune response based on somatic recombination of immune	20/265	361/18670	2.44409E-07	3.63526E-05	3.32017E-05	CD1B/CD70/CR1/IGHE/IGHG2/IGHG4/IGHM/IL6/CXCL13/IGHV6-1/IGHV5-51/IGHV4-61/IGHV4-59/IGHV4-31/IGHV4-28/IGHV3-15/IGHV1-18/IGKV5-2/IGKV1-39/IGLL5	20

		receptors built from immunoglobulin superfamily domains							
BP	GO:0050864	regulation of B cell activation	14/265	184/18670	3.93184E-07	5.55569E-05	5.07414E-05	IGHE/IGHG2/IGHG4/IGHM/IL6/IGHV6-1/IGHV5-51/IGHV4-61/IGHV4-59/IGHV4-31/IGHV4-28/IGHV3-15/IGHV1-18/IGLL5	14
BP	GO:0070098	chemokine-mediated signaling pathway	10/265	88/18670	4.78054E-07	6.43325E-05	5.87564E-05	CCR8/XCR1/GPR17/CCL7/CCL11/CCL13/CCL18/CCL20/CXCL5/CXCL13	10
BP	GO:0002696	positive regulation of leukocyte activation	20/265	380/18670	5.50875E-07	7.07624E-05	6.46289E-05	CD70/IGHE/IGHG2/IGHG4/IGHM/IL2RA/IL6/LBP/LEP/THBS1/IGHV6-1/IGHV5-51/IGHV4-61/IGHV4-59/IGHV4-31/IGHV4-28/IGHV3-15/IGHV1-18/CD209/IGLL5	20
BP	GO:0050867	positive regulation of cell activation	20/265	394/18670	9.69011E-07	0.000119062	0.000108742	CD70/IGHE/IGHG2/IGHG4/IGHM/IL2RA/IL6/LBP/LEP/THBS1/IGHV6-1/IGHV5-51/IGHV4-61/IGHV4-59/IGHV4-31/IGHV4-28/IGHV3-15/IGHV1-18/CD209/IGLL5	20
BP	GO:0051251	positive regulation of lymphocyte activation	18/265	334/18670	1.47283E-06	0.000166921	0.000152453	CD70/IGHE/IGHG2/IGHG4/IGHM/IL2RA/IL6/LEP/IGHV6-1/IGHV5-51/IGHV4-61/IGHV4-59/IGHV4-31/IGHV4-28/IGHV3-15/IGHV1-18/CD209/IGLL5	18
BP	GO:0006909	phagocytosis	19/265	369/18670	1.47665E-06	0.000166921	0.000152453	FCN1/IGHE/IGHG2/IGHG4/IGHM/LBP/LEP/THBS1/IGHV6-1/IGHV5-51/IGHV4-61/IGHV4-59/IGHV4-31/IGHV4-28/IGHV3-15/IGHV1-18/IGKV5-2/IGKV1-39/IGLL5	19
BP	GO:0007210	serotonin receptor signaling pathway	6/265	39/18670	1.70161E-05	0.00184952	0.00168921	CHRM1/HTR1A/HTR1E/HTR5A/HTR3B/HRH3	6
BP	GO:0002920	regulation of humoral immune response	10/265	134/18670	2.18156E-05	0.002283364	0.002085451	CR1/IGHG2/IGHG4/KLK7/CXCL13/CFHR4/KLK5/IGHV4-59/IGKV5-2/IGKV1-39	10

BP	GO:009 8815	modulation of excitatory postsynaptic potential	6/265	41/18 670	2.29002 E-05	0.00231 1282	0.00211 0948	CBLN1/GRIN1/RIMS2/CUX2/CELFB4/NETO1	6
BP	GO:003 1646	positive regulation of neurological system process	7/265	63/18 670	3.01113 E-05	0.00292 651	0.00267 2851	CCK/GRIN1/CARTPT/RIMS2/CUX2/NETO1/ZNF488	7
BP	GO:006 0078	regulation of postsynaptic membrane potential	10/265	140/1 8670	3.18618 E-05	0.00292 651	0.00267 2851	CBLN1/CHRM1/GABRA1/GRIN1/GLRA3/RIMS2/CUX2/CELFB4/SLC17A7/NETO1	10
BP	GO:005 0900	leukocyte migration	20/265	499/1 8670	3.21026 E-05	0.00292 651	0.00267 2851	BDKRB1/COL1A1/COL1A2/IGHM/IL6/LBP/LEP/MMP1/ROR2/CCL7/CCL11/CCL13/CCL18/CCL20/CXCL5/THBS1/CXCL13/IGHV4-59/IGKV5-2/IGKV1-39	20
BP	GO:004 2113	B cell activation	15/265	310/1 8670	3.93781 E-05	0.00347 7575	0.00317 6151	CD70/IGHE/IGHG2/IGHG4/IGHM/IL6/IGHV6-1/IGHV5-51/IGHV4-61/IGHV4-59/IGHV4-31/IGHV4-28/IGHV3-15/IGHV1-18/IGLL5	15
BP	GO:001 9730	antimicrobial humoral response	9/265	122/1 8670	6.16155 E-05	0.00527 6526	0.00481 9176	IGHM/PI3/KLK7/REG1A/REG1B/CCL13/CXCL5/CXCL13/KLK5	9
BP	GO:007 1621	granulocyte chemotaxis	9/265	123/1 8670	6.56678 E-05	0.00545 815	0.00498 5057	LBP/CCL7/CCL11/CCL13/CCL18/CCL20/CXCL5/THBS1/CXCL13	9
BP	GO:005 1249	regulation of lymphocyte activation	19/265	485/1 8670	6.87007 E-05	0.00554 7088	0.00506 6287	CD70/CR1/IGHE/IGHG2/IGHG4/IGHM/IL2RA/IL6/LEP/IGHV6-1/IGHV5-51/IGHV4-61/IGHV4-59/IGHV4-31/IGHV4-28/IGHV3-15/IGHV1-18/CD209/IGLL5	19
BP	GO:003 0198	extracellular matrix organization	16/265	368/1 8670	7.82018 E-05	0.00600 4013	0.00548 3607	COL1A1/COL1A2/COL5A1/COL6A2/COL6A3/COL12A1/DPT/FAP/IL6/MMP1/KLK7/THBS1/POSTN/KLK5/FERMT1/ADAMTS20	16
BP	GO:006 1844	antimicrobial humoral immune response mediated by	7/265	73/18 670	7.86088 E-05	0.00600 4013	0.00548 3607	KLK7/REG1A/REG1B/CCL13/CXCL5/CXCL13/KLK5	7

		antimicrobial peptide							
BP	GO:0060079	excitatory postsynaptic potential	8/265	100/18670	8.94106E-05	0.006575724	0.006005764	CBLN1/GRIN1/GLRA3/RIMS2/CUX2/CELF4/SLC17A7/NETO1	8
BP	GO:0050890	cognition	14/265	296/18670	9.07478E-05	0.006575724	0.006005764	CCK/CHRM1/DRD5/GLP1R/GRIN1/MME/PTGS2/CCL11/HRH3/CUX2/SLC17A7/PAK5/NETO1/LCE1D	14
BP	GO:0098664	G protein-coupled serotonin receptor signaling pathway	5/265	34/18670	0.000110221	0.007787114	0.007112155	CHRM1/HTR1A/HTR1E/HTR5A/HRH3	5
BP	GO:0030593	neutrophil chemotaxis	8/265	104/18670	0.000117877	0.008124874	0.00742064	LBP/CCL7/CCL11/CCL13/CCL18/CCL20/CXCL5/CXCL13	8
BP	GO:0032095	regulation of response to food	4/265	19/18670	0.000130015	0.008748168	0.007989909	CCK/LEP/NPY/CARTPT	4
BP	GO:0031644	regulation of neurological system process	9/265	137/18670	0.000150526	0.009636578	0.008801314	CBLN1/CCK/GRIN1/CARTPT/RIMS2/CUX2/CELF4/NETO1/ZNF488	9
BP	GO:0002429	immune response-activating cell surface receptor signaling pathway	18/265	473/18670	0.000153162	0.009636578	0.008801314	CR1/FCN1/IGHE/IGHG2/IGHG4/IGHM/IGHV6-1/IGHV5-51/IGHV4-61/IGHV4-59/IGHV4-31/IGHV4-28/IGHV3-15/IGHV1-18/IGKV5-2/IGKV1-39/CD209/IGLL5	18
BP	GO:0099565	chemical synaptic transmission, postsynaptic	8/265	108/18670	0.000153449	0.009636578	0.008801314	CBLN1/GRIN1/GLRA3/RIMS2/CUX2/CELF4/SLC17A7/NETO1	8



BP	GO:009 7530	granulocyte migration	9/265	141/1 8670	0.00018 7138	0.01149 6811	0.01050 0309	LBP/CCL7/CCL11/CCL13/CCL18/CCL20/CXCL5/THBS1/CXCL13	9
BP	GO:009 7529	myeloid leukocyte migration	11/265	210/1 8670	0.00021 4246	0.01288 2124	0.01176 5549	IL6/LBP/ROR2/CCL7/CCL11/CCL13/CCL18/CCL20/CXCL5/THBS1/CXCL13	11
BP	GO:000 8217	regulation of blood pressure	10/265	182/1 8670	0.00028 2341	0.01584 5711	0.01447 2263	BDKRB1/COL1A2/DRD5/GLP1R/LEP/MME/NPY/PTGS2/CARTPT/POSTN	10
BP	GO:199 0266	neutrophil migration	8/265	118/1 8670	0.00028 238	0.01584 5711	0.01447 2263	LBP/CCL7/CCL11/CCL13/CCL18/CCL20/CXCL5/CXCL13	8
BP	GO:003 2098	regulation of appetite	4/265	23/18 670	0.00028 4053	0.01584 5711	0.01447 2263	CCK/LEP/NPY/CARTPT	4
BP	GO:004 8247	lymphocyte chemotaxis	6/265	64/18 670	0.00029 0786	0.01584 5711	0.01447 2263	CCL7/CCL11/CCL13/CCL18/CCL20/CXCL13	6
BP	GO:007 1674	mononuclear cell migration	7/265	90/18 670	0.00029 3838	0.01584 5711	0.01447 2263	IL6/CCL7/CCL11/CCL13/CCL18/CCL20/THBS1	7
BP	GO:000 7187	G protein- coupled receptor signaling pathway, coupled to cyclic nucleotide second messenger	12/265	256/1 8670	0.00031 1395	0.01584 5711	0.01447 2263	CHRM1/DRD5/GLP1R/XCR1/HTR1A/HTR1E/HTR5A/NPY/SSTR1/HRH3/ADGRE3/ADGRG7	12
BP	GO:000 8343	adult feeding behavior	3/265	10/18 670	0.00031 515	0.01584 5711	0.01447 2263	LEP/NPY/CARTPT	3
BP	GO:007 0091	glucagon secretion	3/265	10/18 670	0.00031 515	0.01584 5711	0.01447 2263	IL6/LEP/CARTPT	3
BP	GO:000 2548	monocyte chemotaxis	6/265	65/18 670	0.00031 6596	0.01584 5711	0.01447 2263	IL6/CCL7/CCL11/CCL13/CCL18/CCL20	6

BP	GO:000 2526	acute inflammatory response	11/265	220/1 8670	0.00031 9606	0.01584 5711	0.01447 2263	CR1/IGHG2/IGHG4/IL6/LBP/ORM1/PTGS2/CFHR4/IGHV4-59/IGKV5-2/IGKV1-39	11
BP	GO:004 3062	extracellular structure organization	16/265	422/1 8670	0.00036 9663	0.01801 1498	0.01645 0327	COL1A1/COL1A2/COL5A1/COL6A2/COL6A3/COL12A1/DPT/FAP/IL6/MMP1/KLK7/THBS1/POSTN/KLK5/F ERMT1/ADAMTS20	16
BP	GO:003 2104	regulation of response to extracellular stimulus	4/265	25/18 670	0.00039 6839	0.01869 1098	0.01707 1022	CCK/LEP/NPY/CARTPT	4
BP	GO:003 2107	regulation of response to nutrient levels	4/265	25/18 670	0.00039 6839	0.01869 1098	0.01707 1022	CCK/LEP/NPY/CARTPT	4
BP	GO:006 0326	cell chemotaxis	13/265	304/1 8670	0.00042 7194	0.01979 0967	0.01807 5558	CCR8/EPHB1/XCR1/IL6/LBP/CCL7/CCL11/CCL13/CCL18/CCL20/CXCL5/THBS1/CXCL13	13
BP	GO:000 2673	regulation of acute inflammatory response	9/265	159/1 8670	0.00045 6084	0.02078 8607	0.01898 6727	CR1/IGHG2/IGHG4/IL6/PTGS2/CFHR4/IGHV4-59/IGKV5-2/IGKV1-39	9
BP	GO:000 0353	formation of quadruple SL/U4/U5/U6 snRNP	3/265	12/18 670	0.00056 5736	0.02459 6457	0.02246 4526	RNU5B-1/RNU4-2/RNU4-1	3
BP	GO:000 0365	mRNA trans splicing, via spliceosome	3/265	12/18 670	0.00056 5736	0.02459 6457	0.02246 4526	RNU5B-1/RNU4-2/RNU4-1	3
BP	GO:004 5291	mRNA trans splicing, SL addition	3/265	12/18 670	0.00056 5736	0.02459 6457	0.02246 4526	RNU5B-1/RNU4-2/RNU4-1	3
BP	GO:005 0954	sensory perception of mechanical stimulus	9/265	165/1 8670	0.00059 6564	0.02544 2321	0.02323 7073	COL1A1/CRYM/EPYC/ATP6V0A4/OTOR/PCDH15/SRRM4/OTOS/DRGX	9

BP	GO:005 0851	antigen receptor- mediated signaling pathway	13/265	316/1 8670	0.00061 4417	0.02544 2321	0.02323 7073	IGHE/IGHG2/IGHG4/IGHM/IGHV6-1/IGHV5-51/IGHV4-61/IGHV4-59/IGHV4-31/IGHV4-28/IGHV3-15/IGHV1-18/IGLL5	13
BP	GO:190 3792	negative regulation of anion transport	4/265	28/18 670	0.00062 1203	0.02544 2321	0.02323 7073	LEP/PRKG2/THBS1/HRH3	4
BP	GO:200 0463	positive regulation of excitatory postsynaptic potential	4/265	28/18 670	0.00062 1203	0.02544 2321	0.02323 7073	GRIN1/RIMS2/CUX2/NETO1	4
BP	GO:005 0806	positive regulation of synaptic transmission	9/265	168/1 8670	0.00067 906	0.02741 4639	0.02503 8438	GRIN1/KISS1/MME/ROR2/PTGS2/RIMS2/CACNG3/CUX2/NETO1	9
BP	GO:003 2096	negative regulation of response to food	3/265	13/18 670	0.00072 7762	0.02817 3353	0.02573 139	CCK/LEP/CARTPT	3
BP	GO:003 2099	negative regulation of appetite	3/265	13/18 670	0.00072 7762	0.02817 3353	0.02573 139	CCK/LEP/CARTPT	3
BP	GO:007 0208	protein heterotrimeriz ation	3/265	13/18 670	0.00072 7762	0.02817 3353	0.02573 139	COL1A1/COL1A2/COL6A2	3
BP	GO:005 1917	regulation of fibrinolysis	3/265	14/18 670	0.00091 6558	0.03500 2602	0.03196 8704	APOH/FAP/THBS1	3
BP	GO:003 0199	collagen fibril organization	5/265	54/18 670	0.00099 4579	0.03747 5734	0.03422 7474	COL1A1/COL1A2/COL5A1/COL12A1/DPT	5

BP	GO:007 1295	cellular response to vitamin	4/265	32/18 670	0.00104 354	0.03880 3228	0.03543 9905	COL1A1/LEP/VDR/POSTN	4
BP	GO:000 7605	sensory perception of sound	8/265	145/1 8670	0.00110 8097	0.04004 8895	0.03657 7603	COL1A1/CRYM/EPYC/ATP6V0A4/OTOR/PCDH15/SRRM4/OTOS	8
BP	GO:000 7611	learning or memory	11/265	256/1 8670	0.00112 3968	0.04004 8895	0.03657 7603	CCK/DRD5/GLP1R/GRIN1/MME/PTGS2/CCL11/CUX2/SLC17A7/PAK5/NETO1	11
BP	GO:003 2105	negative regulation of response to extracellular stimulus	3/265	15/18 670	0.00113 3727	0.04004 8895	0.03657 7603	CCK/LEP/CARTPT	3
BP	GO:003 2108	negative regulation of response to nutrient levels	3/265	15/18 670	0.00113 3727	0.04004 8895	0.03657 7603	CCK/LEP/CARTPT	3
BP	GO:004 8488	synaptic vesicle endocytosis	5/265	56/18 670	0.00117 3992	0.04045 9788	0.03695 2881	SH3GL2/SNCB/SNAP91/PACSIN1/SLC17A7	5
BP	GO:014 0238	presynaptic endocytosis	5/265	56/18 670	0.00117 3992	0.04045 9788	0.03695 2881	SH3GL2/SNCB/SNAP91/PACSIN1/SLC17A7	5
BP	GO:005 5074	calcium ion homeostasis	16/265	471/1 8670	0.00119 3032	0.04062 0593	0.03709 9748	ATP2B3/BDKRB1/CCR8/DRD5/GLP1R/XCR1/GPR17/GRIN1/KCNA5/KISS1/REG1A/CCL7/CCL11/CCL13/ VDR/CXCL13	16
BP	GO:003 0449	regulation of complement activation	7/265	115/1 8670	0.00127 741	0.04297 5723	0.03925 0744	CR1/IGHG2/IGHG4/CFHR4/IGHV4-59/IGKV5-2/IGKV1-39	7
BP	GO:004 8665	neuron fate specification	4/265	34/18 670	0.00131 6244	0.04376 124	0.03996 8175	MYT1L/TLX3/FEV/ESRP1	4
BP	GO:200 0257	regulation of protein activation cascade	7/265	116/1 8670	0.00134 3309	0.04414 1762	0.04031 5715	CR1/IGHG2/IGHG4/CFHR4/IGHV4-59/IGKV5-2/IGKV1-39	7

BP	GO:003 0595	leukocyte chemotaxis	10/265	224/1 8670	0.00140 8612	0.04533 92	0.04140 9363	IL6/LBP/CCL7/CCL11/CCL13/CCL18/CCL20/CXCL5/THBS1/CXCL13	10
BP	GO:000 7613	memory	7/265	117/1 8670	0.00141 1836	0.04533 92	0.04140 9363	CCK/GRIN1/PTGS2/CUX2/SLC17A7/PAK5/NETO1	7
BP	GO:005 0804	modulation of chemical synaptic transmission	15/265	436/1 8670	0.00149 0073	0.04731 4017	0.04321 301	CBLN1/DRD5/EPHB1/GRIN1/KISS1/MME/ROR2/PTGS2/RIMS2/CACNG3/CUX2/MCTP2/CELF4/NETO1/UNC13C	15
BP	GO:009 9177	regulation of trans-synaptic signaling	15/265	437/1 8670	0.00152 3823	0.04784 8033	0.04370 074	CBLN1/DRD5/EPHB1/GRIN1/KISS1/MME/ROR2/PTGS2/RIMS2/CACNG3/CUX2/MCTP2/CELF4/NETO1/UNC13C	15
BP	GO:001 8149	peptide cross- linking	5/265	60/18 670	0.00160 3199	0.04978 7243	0.04547 1867	F13A1/IVL/PI3/THBS1/LCE1D	5
BP	GO:000 3414	chondrocyte morphogenesis is involved in endochondral bone morphogenesis	3/265	18/18 670	0.00197 0251	0.05923 3293	0.05409 9167	COL6A2/COL6A3/COL12A1	3
BP	GO:000 3429	growth plate cartilage chondrocyte morphogenesis	3/265	18/18 670	0.00197 0251	0.05923 3293	0.05409 9167	COL6A2/COL6A3/COL12A1	3
BP	GO:009 0171	chondrocyte morphogenesis	3/265	18/18 670	0.00197 0251	0.05923 3293	0.05409 9167	COL6A2/COL6A3/COL12A1	3
BP	GO:003 2094	response to food	4/265	38/18 670	0.00200 4112	0.05961 7073	0.05444 9682	CCK/LEP/NPY/CARTPT	4
BP	GO:003 5249	synaptic transmission, glutamatergic	6/265	93/18 670	0.00210 1519	0.06186 3451	0.05650 1353	GRIN1/ROR2/PTGS2/CACNG3/SLC17A7/UNC13C	6

BP	GO:000 2544	chronic inflammatory response	3/265	19/18 670	0.00231 5295	0.06603 7322	0.06031 3448	CCL11/THBS1/CXCL13	3
BP	GO:000 3422	growth plate cartilage morphogenes is	3/265	19/18 670	0.00231 5295	0.06603 7322	0.06031 3448	COL6A2/COL6A3/COL12A1	3
BP	GO:002 1533	cell differentiation in hindbrain	3/265	19/18 670	0.00231 5295	0.06603 7322	0.06031 3448	CBLN1/LHX1/LHX5	3
BP	GO:005 1952	regulation of amine transport	6/265	95/18 670	0.00234 0622	0.06603 7322	0.06031 3448	CCK/LEP/CARTPT/HRH3/SYT13/SYT10	6
BP	GO:000 2687	positive regulation of leukocyte migration	7/265	128/1 8670	0.00236 0145	0.06603 7322	0.06031 3448	BDKRB1/IL6/LBP/CCL7/CCL20/THBS1/CXCL13	7
BP	GO:000 6874	cellular calcium ion homeostasis	15/265	458/1 8670	0.00239 5323	0.06636 4529	0.06061 2294	ATP2B3/BDKRB1/CCR8/DRD5/GLP1R/XCR1/GPR17/GRIN1/KCNA5/KISS1/CCL7/CCL11/CCL13/VDR/CXCL13	15
BP	GO:000 6835	dicarboxylic acid transport	6/265	96/18 670	0.00246 7583	0.06770 2799	0.06183 4567	CCK/SLC22A6/HRH3/SLC17A7/LRRC8E/SLC25A21	6
BP	GO:005 1965	positive regulation of synapse assembly	5/265	68/18 670	0.00279 1905	0.07586 4642	0.06928 8972	CBLN1/EPHB1/CUX2/CBLN2/LRTM2	5
BP	GO:003 6465	synaptic vesicle recycling	5/265	69/18 670	0.00297 5781	0.07995 134	0.07302 145	SH3GL2/SNCB/SNAP91/PACSIN1/SLC17A7	5
BP	GO:002 1697	cerebellar cortex formation	3/265	21/18 670	0.00311 2048	0.07995 134	0.07302 145	CBLN1/LHX1/LHX5	3

BP	GO:003 0728	ovulation	3/265	21/18 670	0.00311 2048	0.07995 134	0.07302 145	EREG/LEP/PTGS2	3
BP	GO:003 2891	negative regulation of organic acid transport	3/265	21/18 670	0.00311 2048	0.07995 134	0.07302 145	LEP/THBS1/HRH3	3
BP	GO:004 8245	eosinophil chemotaxis	3/265	21/18 670	0.00311 2048	0.07995 134	0.07302 145	CCL7/CCL11/CCL13	3
BP	GO:005 5093	response to hyperoxia	3/265	21/18 670	0.00311 2048	0.07995 134	0.07302 145	CDK4/COL1A1/KCNA5	3
BP	GO:001 5837	amine transport	6/265	102/1 8670	0.00334 111	0.08426 7765	0.07696 3743	CCK/LEP/CARTPT/HRH3/SYT13/SYT10	6
BP	GO:200 0379	positive regulation of reactive oxygen species metabolic process	6/265	102/1 8670	0.00334 111	0.08426 7765	0.07696 3743	GRIN1/LEP/PTGS2/THBS1/XDH/AGXT2	6
BP	GO:004 2531	positive regulation of tyrosine phosphorylati on of STAT protein	5/265	71/18 670	0.00336 9518	0.08426 7765	0.07696 3743	CSF2/IL6/LEP/IL20/IL31RA	5
BP	GO:002 1516	dorsal spinal cord development	3/265	22/18 670	0.00356 5958	0.08839 8216	0.08073 6181	LHX1/LHX5/DRGX	3
BP	GO:001 9233	sensory perception of pain	6/265	104/1 8670	0.00367 7967	0.09038 2052	0.08254 8065	BDKRB1/CCK/EPHB1/GRIN1/MME/PTGS2	6
BP	GO:000 7416	synapse assembly	8/265	177/1 8670	0.00385 0162	0.09379 7919	0.08566 7858	CBLN1/CDH9/EPHB1/GABRA1/GRIN1/CUX2/CBLN2/LRTM2	8

BP	GO:003 1670	cellular response to nutrient	5/265	74/18 670	0.00402 8441	0.09674 0429	0.08835 5321	COL1A1/LEP/PTGS2//DR/POSTN	5
BP	GO:005 1963	regulation of synapse assembly	6/265	106/1 8670	0.00403 9409	0.09674 0429	0.08835 5321	CBLN1/EPHB1/GRIN1/CUX2/CBLN2/LRTM2	6
BP	GO:005 0727	regulation of inflammatory response	15/265	485/1 8670	0.00408 7931	0.09707 9784	0.08866 5263	CR1/GPR17/IGHG2/IGHG4/IL2RA/IL6/LBP/LEP/PTGS2/CCL18/CFHR4/IGHV4-59/IGKV5-2/IGKV1-39/IL20	15
CC	GO:004 2571	immunoglobul in complex, circulating	13/280	72/19 717	2.4291E -11	7.60309 E-09	6.82705 E-09	IGHE/IGHG2/IGHG4/IGHM/IGHV6-1/IGHV5-51/IGHV4-61/IGHV4-59/IGHV4-31/IGHV4-28/IGHV3-15/IGHV1-18/IGLL5	13
CC	GO:001 9814	immunoglobul in complex	17/280	159/1 9717	1.20779 E-10	1.89019 E-08	1.69726 E-08	IGHE/IGHG2/IGHG4/IGHM/IGHV6-1/IGHV5-51/IGHV4-61/IGHV4-59/IGHV4-31/IGHV4-28/IGHV3-15/IGHV1-18/IGKV1D-17/IGKV5-2/IGKV1-39/IGKV1-9/IGLL5	17
CC	GO:000 9897	external side of plasma membrane	21/280	393/1 9717	2.28794 E-07	2.38708 E-05	2.14343 E-05	CD1B/CCR8/FCN1/XCR1/IGHE/IGHG2/IGHG4/IGHM/IL2RA/THBS1/IGHV6-1/IGHV5-51/IGHV4-61/IGHV4-59/IGHV4-31/IGHV4-28/IGHV3-15/IGHV1-18/CD209/IL31RA/IGLL5	21
CC	GO:006 2023	collagen- containing extracellular matrix	20/280	406/1 9717	1.58449 E-06	0.00012 3986	0.00011 1331	APOH/CBLN1/COL1A1/COL1A2/COL5A1/COL6A2/COL6A3/COL12A1/DPT/F13A1/FCN1/ORM1/PCOLCE/RBP3/THBS1/POSTN/ADAMTS20/LRRC15/FREM3/COL6A5	20
CC	GO:000 5581	collagen trimer	9/280	87/19 717	4.02597 E-06	0.00025 2026	0.00022 6302	COL1A1/COL1A2/COL5A1/COL6A2/COL6A3/COL12A1/FCN1/COL6A5/C1QTNF8	9
CC	GO:006 0076	excitatory synapse	7/280	50/19 717	6.40316 E-06	0.00033 4032	0.00029 9938	CBLN1/GRIN1/KCNJ9/CACNG3/SLC17A7/NETO1/UNC13C	7
CC	GO:009 8793	presynapse	20/280	491/1 9717	2.61961 E-05	0.00117 1339	0.00105 1783	ATP2B3/CCK/CDH9/CHRM1/GRIN1/KCNJ9/MME/SH3GL2/SNCB/RIMS2/SNAP91/HRH3/PACSIN1/MCTP2/SLC17A7/KCTD16/SYNPR/IL31RA/SYT10/UNC13C	20
CC	GO:000 5583	fibrillar collagen trimer	3/280	11/19 717	0.00042 9649	0.01494 2244	0.01341 7115	COL1A1/COL1A2/COL5A1	3
CC	GO:009 8643	banded collagen fibril	3/280	11/19 717	0.00042 9649	0.01494 2244	0.01341 7115	COL1A1/COL1A2/COL5A1	3



CC	GO:009 7060	synaptic membrane	16/280	432/1 9717	0.00048 4746	0.01517 2562	0.01362 3925	CBLN1/CDH9/CHRM1/GABRA1/GRIN1/HTR5A/KCNJ9/GLRA3/HTR3B/RIMS2/SNAP91/CACNG3/KCTD16/ NETO1/IL31RA/UNC13C	16
CC	GO:009 9060	integral component of postsynaptic specialization membrane	6/280	74/19 717	0.00064 1538	0.01771 8612	0.01591 0104	CHRM1/GABRA1/GRIN1/HTR5A/CACNG3/NETO1	6
CC	GO:004 4420	extracellular matrix component	5/280	51/19 717	0.00076 7551	0.01771 8612	0.01591 0104	COL1A1/COL1A2/COL5A1/COL12A1/RBP3	5
CC	GO:007 0382	exocytic vesicle	10/280	207/1 9717	0.00078 1802	0.01771 8612	0.01591 0104	GRIN1/MME/SH3GL2/SNAP91/MCTP2/SLC17A7/SYT13/SYNPR/SYT10/UNC13C	10
CC	GO:009 8948	intrinsic component of postsynaptic specialization membrane	6/280	77/19 717	0.00079 2526	0.01771 8612	0.01591 0104	CHRM1/GABRA1/GRIN1/HTR5A/CACNG3/NETO1	6
CC	GO:009 8688	parallel fiber to Purkinje cell synapse	3/280	16/19 717	0.00138 3471	0.02776 1552	0.02492 7978	CBLN1/KCNJ9/UNC13C	3
CC	GO:009 9055	integral component of postsynaptic membrane	7/280	117/1 9717	0.00141 9431	0.02776 1552	0.02492 7978	CDH9/CHRM1/GABRA1/GRIN1/HTR5A/CACNG3/NETO1	7
CC	GO:009 9699	integral component of synaptic membrane	8/280	152/1 9717	0.00150 7816	0.02776 1552	0.02492 7978	CDH9/CHRM1/GABRA1/GRIN1/HTR5A/KCNJ9/CACNG3/NETO1	8
CC	GO:004 2599	lamellar body	3/280	17/19 717	0.00166 2382	0.02890 6979	0.02595 6494	KLK7/SFTPC/KLK5	3
CC	GO:009 8936	intrinsic component of	7/280	122/1 9717	0.00180 5918	0.02975 0131	0.02671 3586	CDH9/CHRM1/GABRA1/GRIN1/HTR5A/CACNG3/NETO1	7

		postsynaptic membrane							
CC	GO:0042734	presynaptic membrane	8/280	161/19717	0.00216557	0.033891166	0.030431953	CDH9/CHRM1/KCNJ9/RIMS2/SNAP91/KCTD16/IL31RA/UNC13C	8
CC	GO:0098644	complex of collagen trimers	3/280	19/19717	0.002319718	0.034556378	0.031029268	COL1A1/COL1A2/COL5A1	3
CC	GO:0099240	intrinsic component of synaptic membrane	8/280	164/19717	0.002428883	0.034556378	0.031029268	CDH9/CHRM1/GABRA1/GRIN1/HTR5A/KCNJ9/CACNG3/NETO1	8
CC	GO:0099634	postsynaptic specialization membrane	6/280	101/19717	0.003195022	0.043480082	0.039042145	CHRM1/GABRA1/GRIN1/HTR5A/CACNG3/NETO1	6
CC	GO:0044306	neuron projection terminus	7/280	138/19717	0.003609543	0.047074462	0.042269653	CCK/CHRM1/GRIN1/MME/PACSIN1/ATCAY/UNC13C	7
CC	GO:0099061	integral component of postsynaptic density membrane	4/280	50/19717	0.005490432	0.068740205	0.061724011	CHRM1/GRIN1/CACNG3/NETO1	4
CC	GO:0008021	synaptic vesicle	8/280	191/19717	0.006088113	0.073291514	0.065810776	GRIN1/MME/SH3GL2/SNAP91/MCTP2/SLC17A7/SYNPR/UNC13C	8
CC	GO:0045211	postsynaptic membrane	11/280	323/19717	0.00669893	0.075500497	0.067794292	CBLN1/CDH9/CHRM1/GABRA1/GRIN1/HTR5A/GLRA3/HTR3B/CACNG3/KCTD16/NETO1	11
CC	GO:0099146	intrinsic component of postsynaptic density membrane	4/280	53/19717	0.006754038	0.075500497	0.067794292	CHRM1/GRIN1/CACNG3/NETO1	4
CC	GO:0097470	ribbon synapse	2/280	10/19717	0.008387501	0.090527164	0.081287213	SH3GL2/PACSIN1	2

MF	GO:0003823	antigen binding	18/245	160/17697	8.901E-12	3.96985E-09	3.45734E-09	CD1B/IGHE/IGHG2/IGHG4/IGHM/KLRC2/IGHV6-1/IGHV5-51/IGHV4-61/IGHV4-59/IGHV4-31/IGHV4-28/IGHV3-15/IGHV1-18/IGKV5-2/IGKV1-39/CD209/IGLL5	18
MF	GO:0034987	immunoglobulin receptor binding	13/245	76/17697	3.51872E-11	7.84674E-09	6.83372E-09	IGHE/IGHG2/IGHG4/IGHM/IGHV6-1/IGHV5-51/IGHV4-61/IGHV4-59/IGHV4-31/IGHV4-28/IGHV3-15/IGHV1-18/IGLL5	13
MF	GO:0030020	extracellular matrix structural constituent conferring tensile strength	7/245	41/17697	1.34652E-06	0.000200183	0.000174339	COL1A1/COL1A2/COL5A1/COL6A2/COL6A3/COL12A1/COL6A5	7
MF	GO:0008009	chemokine activity	7/245	49/17697	4.68231E-06	0.000468467	0.000407988	CCL7/CCL11/CCL13/CCL18/CCL20/CXCL5/CXCL13	7
MF	GO:0030594	neurotransmitter receptor activity	10/245	117/17697	5.25187E-06	0.000468467	0.000407988	CHRM1/DRD5/GABRA1/GRIN1/HTR1A/HTR1E/HTR5A/GLRA3/HTR3B/HRH3	10
MF	GO:0005201	extracellular matrix structural constituent	11/245	163/17697	1.72405E-05	0.001222835	0.001064966	COL1A1/COL1A2/COL5A1/COL6A2/COL6A3/COL12A1/DPT/PCOLCE/THBS1/POSTN/COL6A5	11
MF	GO:0005539	glycosaminoglycan binding	13/245	229/17697	1.91925E-05	0.001222835	0.001064966	APOH/COL5A1/EPYC/IGHM/PCOLCE/REG1A/REG1B/CCL7/THBS1/CXCL13/POSTN/SUSD5/LRTM2	13
MF	GO:0048020	CCR chemokine receptor binding	6/245	43/17697	2.62892E-05	0.001465623	0.00127641	CCL7/CCL11/CCL13/CCL18/CCL20/CXCL13	6
MF	GO:0042379	chemokine receptor binding	7/245	66/17697	3.47627E-05	0.001722686	0.001500286	CCL7/CCL11/CCL13/CCL18/CCL20/CXCL5/CXCL13	7
MF	GO:0005125	cytokine activity	12/245	220/17697	5.91909E-05	0.002639914	0.002299099	CD70/CSF2/CSF3/IL6/CCL7/CCL11/CCL13/CCL18/CCL20/CXCL5/CXCL13/IL20	12

MF	GO:0004993	G protein-coupled serotonin receptor activity	5/245	34/17697	9.78535E-05	0.003636887	0.003167362	CHRM1/HTR1A/HTR1E/HTR5A/HRH3	5
MF	GO:0099589	serotonin receptor activity	5/245	34/17697	9.78535E-05	0.003636887	0.003167362	CHRM1/HTR1A/HTR1E/HTR5A/HRH3	5
MF	GO:0048018	receptor ligand activity	18/245	482/17697	0.000139597	0.004789237	0.004170943	CCK/CD70/CSF2/CSF3/EREG/IL6/LEP/NPY/REG1A/CCL7/CCL11/CCL13/CCL18/CCL20/CXCL5/CARTPT/CXCL13/IL20	18
MF	GO:0099528	G protein-coupled neurotransmitter receptor activity	5/245	41/17697	0.00024356	0.007759128	0.006757418	CHRM1/HTR1A/HTR1E/HTR5A/HRH3	5
MF	GO:0043176	amine binding	3/245	10/17697	0.000292708	0.00815923	0.007105867	HTR1A/HTR1E/HTR5A	3
MF	GO:0051378	serotonin binding	3/245	10/17697	0.000292708	0.00815923	0.007105867	HTR1A/HTR1E/HTR5A	3
MF	GO:0048407	platelet-derived growth factor binding	3/245	11/17697	0.000398364	0.010451186	0.00910193	COL1A1/COL1A2/COL5A1	3
MF	GO:0005126	cytokine receptor binding	12/245	286/17697	0.000665567	0.016491266	0.01436223	CD70/CSF2/CSF3/IL6/CCL7/CCL11/CCL13/CCL18/CCL20/CXCL5/CXCL13/IL20	12
MF	GO:0042165	neurotransmitter binding	5/245	55/17697	0.000966203	0.022680348	0.019752297	GRIN1/HTR1A/HTR1E/HTR5A/GLRA3	5
MF	GO:0008227	G protein-coupled amine receptor activity	5/245	59/17697	0.001329612	0.029650357	0.025822473	CHRM1/HTR1A/HTR1E/HTR5A/HRH3	5

MF	GO:004 2834	peptidoglycan binding	3/245	17/17 697	0.00154 3913	0.03278 9778	0.02855 6592	IGHM/REG1A/REG1B	3
MF	GO:000 1664	G protein- coupled receptor binding	11/245	280/1 7697	0.00186 8989	0.03788 9513	0.03299 7947	FCN1/KISS1/NPY/ROR2/CCL7/CCL11/CCL13/CCL18/CCL20/CXCL5/CXCL13	11
MF	GO:000 8201	heparin binding	8/245	169/1 7697	0.00248 5914	0.04664 8977	0.04062 6558	APOH/COL5A1/PCOLCE/CCL7/THBS1/CXCL13/POSTN/LRTM2	8
MF	GO:009 9095	ligand-gated anion channel activity	3/245	20/17 697	0.00251 0259	0.04664 8977	0.04062 6558	GABRA1/GLRA3/SLC17A7	3
MF	GO:001 9838	growth factor binding	7/245	137/1 7697	0.00299 981	0.05311 8035	0.04626 0455	COL1A1/COL1A2/COL5A1/IL2RA/THBS1/CXCL13/IGFBPL1	7
MF	GO:000 4222	metalloendop eptidase activity	6/245	103/1 7697	0.00309 6567	0.05311 8035	0.04626 0455	FAP/MME/MMP1/PAPPA/ADAM29/ADAMTS20	6
MF	GO:000 8237	metallopeptid ase activity	8/245	181/1 7697	0.00378 1455	0.05897 2724	0.05135 93	FAP/MME/MMP1/PAPPA/ADAM29/CLCA4/TRHDE/ADAMTS20	8
MF	GO:000 5230	extracellular ligand-gated ion channel activity	5/245	75/17 697	0.00383 4549	0.05897 2724	0.05135 93	GABRA1/GRIN1/GLRA3/HTR3B/SLC17A7	5
MF	GO:007 0405	ammonium ion binding	5/245	75/17 697	0.00383 4549	0.05897 2724	0.05135 93	DRD5/HTR1A/HTR1E/HTR5A/IGHM	5
MF	GO:000 8528	G protein- coupled peptide receptor activity	7/245	146/1 7697	0.00426 1211	0.06156 1052	0.05361 3472	BDKRB1/CCR8/GLP1R/XCR1/GPR17/SSTR1/MCHR2	7
MF	GO:000 8143	poly(A) binding	3/245	24/17 697	0.00427 8907	0.06156 1052	0.05361 3472	KHDRBS2/PABPC1L2A/PABPC1L2B	3

MF	GO:000 1653	peptide receptor activity	7/245	152/1 7697	0.00530 1632	0.07065 1982	0.06153 0756	BDKRB1/CCR8/GLP1R/XCR1/GPR17/SSTR1/MCHR2	7
MF	GO:000 1637	G protein- coupled chemoattract ant receptor activity	3/245	26/17 697	0.00538 6025	0.07065 1982	0.06153 0756	CCR8/XCR1/GPR17	3
MF	GO:000 4950	chemokine receptor activity	3/245	26/17 697	0.00538 6025	0.07065 1982	0.06153 0756	CCR8/XCR1/GPR17	3
MF	GO:000 5184	neuropeptide hormone activity	3/245	28/17 697	0.00665 0036	0.08474 0453	0.07380 0394	CCK/NPY/CARTPT	3
MF	GO:000 5253	anion channel activity	5/245	89/17 697	0.00789 491	0.09004 8891	0.07842 3509	GABRA1/GLRA3/CLCA4/SLC17A7/LRRC8E	5
MF	GO:003 0276	clathrin binding	4/245	57/17 697	0.00797 6051	0.09004 8891	0.07842 3509	SNAP91/NSG2/SYT13/SYT10	4
MF	GO:007 1723	lipopeptide binding	2/245	10/17 697	0.00798 2971	0.09004 8891	0.07842 3509	CD1B/LBP	2
MF	GO:000 8266	poly(U) RNA binding	3/245	30/17 697	0.00807 6134	0.09004 8891	0.07842 3509	KHDRBS2/PABPC1L2A/PABPC1L2B	3
MF	GO:007 0717	poly-purine tract binding	3/245	30/17 697	0.00807 6134	0.09004 8891	0.07842 3509	KHDRBS2/PABPC1L2A/PABPC1L2B	3
MF	GO:000 1786	phosphatidyls erine binding	4/245	58/17 697	0.00847 5712	0.09219 9214	0.08029 6224	MME/THBS1/SYT13/SYT10	4

Table S2. Data of GSEA analysis

ID	NE S	p.adjust	core_enrichment
REACTOME_IMMUNOREGULATORY_INTERACTIONS_BETWEEN_A_LYMPHOID_AND_A_NON_LYMPHOID_CELL	3.3 321 493 62	0.0239 07265	CD1B/COL1A1/COL1A2/IGHV4-59/CD300E/IGHV1-2/IGKV5-2/IGKV1-39/IGHV1-46/COL3A1/IGKV2-30/TREML2/IGKV2D-30/IGHV2-70/SIGLEC12/SIGLEC6/IGKV3-15/TRAV29DV5/ICAM1/IGLV3-25/IGHV4-34/TREML4/IGKV1-16/LILRB5/IGLV3-21/IGLV1-47/SLAMF6/IGLV2-23/SIGLEC1/IGLV1-44/IGLV3-1/COLEC12/CD3E/TRAV8-4/ITGA4/TREM1/CD96/JAML/TRAV19/IGHV3-33/LILRB2/LILRB3/IGLV2-14/KIR2DL1/LILRA5/CD200R1/IGHV3-11/CD3G/IGKV1D-16/IGHV3-30/KIR2DL4/TRBV7-9/IGLV3-19/FCGR2B/CD226/IGHV2-5/IGLV1-40/LILRB1/C3/CD1C/IGLC2/IGKV1D-12/LAIR1/CD300LB/LILRA6/VCAM1/IGKV1-5/IGKV2D-28/IGHV3-23/FCGR3A/IGKV3-11/ITGB2/TRBV12-3/IGKV1D-39/IGLV2-8/SIGLEC9/IGLV2-11/SLAMF7/SIGLEC7/ULBP3/OSCAR/IGLV7-43/CLEC2B/IGKV4-1/CRTAM/IGHV1-69/ITGB7/ITGAL/SIGLEC10/ICAM3/ITGB1/NCR1/SELL/CD1D/CD300C/IGLV1-51/CD1A/IGHV4-39/IGLV6-57/NECTIN2/CD40LG/PVR/MICB/SIGLEC5/CD300LF/IGKV3-20/PILRB/CD3D/HLA-C/KIR3DL2/CD40/HLA-B/LILRA1/IGHV3-7/CD247/IFITM1/IGKV1-17/IGHV3-48/IGHV3-53/SH2D1A/IGKV1-12/CD33/SIGLEC11/PILRA/KIR3DL1
REACTOME_BINDING_AND_UPTAKE_OF_LIGANDS_BY_SCAVENGER_RECEPTORS	3.2 567 810 14	0.0198 64398	COL1A1/COL1A2/IGHV4-59/IGHV1-2/IGKV5-2/IGKV1-39/IGHV1-46/COL3A1/IGKV2-30/IGKV2D-30/IGHV2-70/MARCO/IGKV3-15/CD163/IGLV3-25/IGHV4-34/IGKV1-16/IGLV3-21/IGLV1-47/IGLV2-23/HP/IGLV1-44/IGLV3-1/COLEC12/STAB1/SSC5D/IGHV3-33/IGLV2-14/IGHV3-11/IGKV1D-16/IGHV3-30/IGLV3-19/LRP1/APOB/IGHV2-5/APOL1/COL4A1/IGLV1-40/COL4A2/AMBP/IGLC2/IGKV1D-12/SAA1/IGHA1/IGKV1-5/IGKV2D-28/IGHV3-23/IGKV3-11/IGKV1D-39/IGLV2-8/IGLV2-11/IGLV7-43/IGKV4-1/IGHA2/IGHV1-69/CD36/IGLV1-51/IGHV4-39/STAB2/IGLV6-57/MSR1/IGKV3-20/IGHV3-7/IGKV1-17/IGHV3-48/IGHV3-53/SCARF1
KEGG_CYTOKINE_CYTOKINE_RECEPTOR_INTERACTION	3.2 328 307 06	0.0279 56989	CCL13/CCL11/CSF2/CCL20/CXCL13/CCL18/XCR1/CXCL5/CCR8/CCL7/CD70/IL20/CSF3/IL6/IL2RA/LEP/CCR2/LIF/CCR4/CXCR3/PPBP/CXCR1/CXCL8/CXCL3/IL7R/IL1R1/CCL23/CXCL1/IL11/IL21R/FASLG/INHBA/IL18R1/MET/IL2RB/IL22RA1/PRLR/TNFRSF18/IL24/CSF2RB/IL19/TNFSF11/IL1R2/IL9R/TSLP/TNFSF14/CCL2/CXCL2/CCL22/TNFRSF9/IL22RA2/TNFSF4/TNFSF15/CLCF1/TNFRSF10C/CXCR5/CCR7/CCR5/OSMR/CCR6/CXCL6/IL2RG/IL4R/CXCL9/LTB/CCR1/TGFB2/IL22/TNFRSF11A/TNFRSF10A/TNFRSF10D/TNFRSF1B/PF4V1/TGFB2/CCR3/IFNG/CXCR2/CSF3R/CXCR6/IL15RA/CD27/IL10/CCL26/IL18RAP/IL10RA/IL6R/VEGFC/CXCL12/INHBE/FLT3/OSM/CCL14/CRLF2/TNFRSF17/IL1B/IL1RAP/CCL5/IL12B/CSF1R/GDF5/TNFSF8/TGFB1/EGF/IL17RA/CCL24/EDA2R/PDGFRB/CD40LG/CSF1/CCL8/FLT4/TNFRSF10B/VEGFA/IL15/XCL2/TNFRSF14/IL13RA1/IL1A/TNFRSF8/TNFRSF13B/IFNE/TGFB3/TNFSF13/CXCL10/CD40/INHBB/IL12RB1/FLT1/TNFSF10/TNFRSF1A/LTBR/IL25/ACVRL1/XCL1/PF4/HGF/IFNLR1/CXCL16/IFNA5/IFNA14/PLEKHO2/IL20RB/KDR/TNFRSF4/LTA/KITLG/PDGFA
REACTOME_FCERI_MEDIATED_CA_2_MOBILIZATION	3.1 317	0.0198 64398	IGHE/IGHV4-59/IGHV1-2/IGKV5-2/IGKV1-39/IGHV1-46/IGKV2-30/IGKV2D-30/IGHV2-70/IGKV3-15/ITK/IGLV3-25/IGHV4-34/IGKV1-16/ITPR3/IGLV3-21/IGLV1-47/IGLV2-23/IGLV1-44/IGLV3-1/GRAP2/SHC1/IGHV3-33/IGLV2-

	459 75		14/TEC/IGHV3-11/TXK/IGKV1D-16/IGHV3-30/IGLV3-19/IGHV2-5/IGLV1-40/IGLC2/IGKV1D-12/IGKV1-5/IGKV2D-28/IGHV3-23/IGKV3-11/IGKV1D-39/IGLV2-8/IGLV2-11/LCP2/IGLV7-43/IGKV4-1/VAV1/IGHV1-69/IGLV1-51/IGHV4-39/IGLV6-57/SYK/NFATC2/PLCG2/VAV2/IGKV3-20/IGHV3-7/LYN/FCER1G/IGKV1-17/IGHV3-48/IGHV3-53/ITPR2/IGKV1-12
REACTOME_INITIAL_TRIGGERING_OF_COMPLEMENT	3.1 309 337	0.0198 64398	IGHV4-59/IGHG2/IGHG4/IGHV1-2/IGKV5-2/IGKV1-39/FCN1/IGHV1-46/IGKV2-30/IGKV2D-30/IGHV2-70/IGKV3-15/IGLV3-25/FCN2/IGHV4-34/IGKV1-16/IGHG1/IGLV3-21/IGLV1-47/IGLV2-23/CFB/IGLV1-44/C1R/IGLV3-1/IGHV3-33/IGLV2-14/C1S/IGHV3-11/IGKV1D-16/IGHV3-30/IGLV3-19/IGHV2-5/IGLV1-40/C3/IGLC2/IGKV1D-12/IGKV1-5/IGKV2D-28/IGHV3-23/IGKV3-11/IGKV1D-39/IGLV2-8/IGLV2-11/IGLV7-43/IGKV4-1/IGHV1-69/IGLV1-51/IGHV4-39/IGLV6-57/C1QC/IGKV3-20/C1QA/C1QB/CFD/C2/IGHV3-7/IGKV1-17/IGHV3-48/IGHV3-53/IGKV1-12
REACTOME_CREATION_OF_C4_AND_C2_ACTIVATORS	3.1 163 560 32	0.0198 64398	IGHV4-59/IGHG2/IGHG4/IGHV1-2/IGKV5-2/IGKV1-39/FCN1/IGHV1-46/IGKV2-30/IGKV2D-30/IGHV2-70/IGKV3-15/IGLV3-25/FCN2/IGHV4-34/IGKV1-16/IGHG1/IGLV3-21/IGLV1-47/IGLV2-23/IGLV1-44/C1R/IGLV3-1/IGHV3-33/IGLV2-14/C1S/IGHV3-11/IGKV1D-16/IGHV3-30/IGLV3-19/IGHV2-5/IGLV1-40/IGLC2/IGKV1D-12/IGKV1-5/IGKV2D-28/IGHV3-23/IGKV3-11/IGKV1D-39/IGLV2-8/IGLV2-11/IGLV7-43/IGKV4-1/IGHV1-69/IGLV1-51/IGHV4-39/IGLV6-57/C1QC/IGKV3-20/C1QA/C1QB/IGHV3-7/IGKV1-17/IGHV3-48/IGHV3-53/IGKV1-12
REACTOME_FCERI_MEDIATED_MAPK_ACTIVATION	3.1 041 072 68	0.0198 64398	IGHE/IGHV4-59/IGHV1-2/IGKV5-2/IGKV1-39/IGHV1-46/IGKV2-30/IGKV2D-30/IGHV2-70/IGKV3-15/IGLV3-25/IGHV4-34/IGKV1-16/IGLV3-21/IGLV1-47/IGLV2-23/IGLV1-44/IGLV3-1/GRAP2/SHC1/IGHV3-33/IGLV2-14/IGHV3-11/IGKV1D-16/IGHV3-30/IGLV3-19/IGHV2-5/IGLV1-40/IGLC2/IGKV1D-12/IGKV1-5/IGKV2D-28/IGHV3-23/IGKV3-11/IGKV1D-39/IGLV2-8/IGLV2-11/LCP2/IGLV7-43/FOS/IGKV4-1/VAV1/IGHV1-69/IGLV1-51/IGHV4-39/IGLV6-57/SYK/PLCG2/VAV2/IGKV3-20/IGHV3-7/JUN/LYN/FCER1G/IGKV1-17/IGHV3-48/IGHV3-53/IGKV1-12
REACTOME_FCGR_ACTIVATION	3.0 967 625 47	0.0198 64398	IGHV4-59/IGHG2/IGHG4/IGHV1-2/IGKV5-2/IGKV1-39/IGHV1-46/IGKV2-30/IGKV2D-30/IGHV2-70/IGKV3-15/IGLV3-25/IGHV4-34/IGKV1-16/IGHG1/IGLV3-21/IGLV1-47/IGLV2-23/IGLV1-44/IGLV3-1/IGHV3-33/IGLV2-14/IGHV3-11/CD3G/FCGR2A/IGKV1D-16/IGHV3-30/IGLV3-19/IGHV2-5/IGLV1-40/IGLC2/IGKV1D-12/IGKV1-5/IGKV2D-28/IGHV3-23/FCGR3A/IGKV3-11/IGKV1D-39/IGLV2-8/IGLV2-11/IGLV7-43/IGKV4-1/IGHV1-69/IGLV1-51/IGHV4-39/IGLV6-57/SYK/HCK/IGKV3-20/IGHV3-7/CD247/LYN/IGKV1-17/IGHV3-48/IGHV3-53/IGKV1-12
REACTOME_ROLE_OF_PHOSPHOLIPIDS_IN_PHAGOCYTOSIS	3.0 925 798 59	0.0198 64398	IGHV4-59/IGHG2/IGHG4/IGHV1-2/IGKV5-2/IGKV1-39/IGHV1-46/IGKV2-30/IGKV2D-30/IGHV2-70/IGKV3-15/IGLV3-25/IGHV4-34/IGKV1-16/ITPR3/IGHG1/IGLV3-21/IGLV1-47/IGLV2-23/IGLV1-44/IGLV3-1/IGHV3-33/IGLV2-14/IGHV3-11/CD3G/FCGR2A/IGKV1D-16/IGHV3-30/IGLV3-19/IGHV2-5/IGLV1-40/IGLC2/IGKV1D-12/IGKV1-5/IGKV2D-28/IGHV3-23/FCGR3A/IGKV3-11/IGKV1D-39/IGLV2-8/IGLV2-11/IGLV7-43/IGKV4-1/IGHV1-69/IGLV1-51/IGHV4-39/IGLV6-57/SYK/PLCG2/IGKV3-20/IGHV3-7/CD247/PRKCD/IGKV1-17/IGHV3-48/IGHV3-53/ITPR2/IGKV1-12
REACTOME_ANTIGEN_ACTIVATES_B_CELL_RECEPTOR_BCR_LEADING_TO_GENERATION_OF_SECOND_MESSENGERS	3.0 844	0.0198 64398	IGHM/IGHV4-59/IGHV1-2/IGKV5-2/IGKV1-39/IGHV1-46/IGKV2-30/IGKV2D-30/IGHV2-70/IGKV3-15/IGLV3-25/IGHV4-34/IGKV1-16/ITPR3/IGLV3-21/IGLV1-47/IGLV2-23/IGLV1-44/IGLV3-1/IGHV3-33/IGLV2-14/IGHV3-11/IGKV1D-16/IGHV3-30/IGLV3-19/IGHV2-5/IGLV1-40/IGLC2/IGKV1D-12/IGKV1-5/IGKV2D-28/IGHV3-23/IGKV3-



	995 47		11/PIK3CD/IGKV1D-39/IGLV2-8/PIK3AP1/IGLV2-11/IGLV7-43/IGKV4-1/VAV1/DAPP1/IGHV1-69/BLK/IGLV1-51/IGHV4-39/IGLV6-57/SYK/PLCG2/IGKV3-20/IGHV3-7/LYN/IGKV1-17/IGHV3-48/IGHV3-53/ITPR2/IGKV1-12/PTPN6
REACTOME_COMPLEMENT_CASCADE	3.0 738 236 27	0.0198 64398	CR1/IGHV4-59/IGHG2/IGHG4/IGHV1-2/IGKV5-2/IGKV1-39/FCN1/IGHV1-46/IGKV2-30/CPN2/IGKV2D-30/IGHV2-70/IGKV3-15/IGLV3-25/FCN2/IGHV4-34/IGKV1-16/IGHG1/IGLV3-21/IGLV1-47/IGLV2-23/CFB/IGLV1-44/C1R/IGLV3-1/CR2/CFI/C5AR1/IGHV3-33/IGLV2-14/C1S/IGHV3-11/IGKV1D-16/IGHV3-30/IGLV3-19/CFH/IGHV2-5/C4BPB/IGLV1-40/C3/IGLC2/IGKV1D-12/SERPING1/IGKV1-5/IGKV2D-28/IGHV3-23/IGKV3-11/PROS1/IGKV1D-39/IGLV2-8/IGLV2-11/IGLV7-43/IGKV4-1/C5AR2/ELANE/IGHV1-69/IGLV1-51/C3AR1/IGHV4-39/IGLV6-57/C5/C7/C1QC/IGKV3-20/C1QA/C1QB/CFD/C2/IGHV3-7/IGKV1-17/IGHV3-48/IGHV3-53
REACTOME_ROLE_OF_LAT2_NTAL_LAB_ON_CALCIUM_MOBILIZATION	3.0 465 572 02	0.0198 64398	IGHE/IGHV4-59/IGHV1-2/IGKV5-2/IGKV1-39/IGHV1-46/IGKV2-30/IGKV2D-30/IGHV2-70/IGKV3-15/IGLV3-25/IGHV4-34/IGKV1-16/IGLV3-21/IGLV1-47/IGLV2-23/IGLV1-44/IGLV3-1/SHC1/IGHV3-33/IGLV2-14/IGHV3-11/IGKV1D-16/IGHV3-30/IGLV3-19/IGHV2-5/IGLV1-40/IGLC2/IGKV1D-12/IGKV1-5/IGKV2D-28/IGHV3-23/IGKV3-11/IGKV1D-39/IGLV2-8/IGLV2-11/IGLV7-43/IGKV4-1/IGHV1-69/IGLV1-51/IGHV4-39/IGLV6-57/SYK/IGKV3-20/IGHV3-7/LYN/FCER1G/IGKV1-17/IGHV3-48/IGHV3-53/IGKV1-12
REACTOME_SCAVENGING_OF_HEME_FROM_PLASMA	3.0 426 267 49	0.0198 64398	IGHV4-59/IGHV1-2/IGKV5-2/IGKV1-39/IGHV1-46/IGKV2-30/IGKV2D-30/IGHV2-70/IGKV3-15/CD163/IGLV3-25/IGHV4-34/IGKV1-16/IGLV3-21/IGLV1-47/IGLV2-23/HP/IGLV1-44/IGLV3-1/IGHV3-33/IGLV2-14/IGHV3-11/IGKV1D-16/IGHV3-30/IGLV3-19/LRP1/IGHV2-5/APOL1/IGLV1-40/AMBP/IGLC2/IGKV1D-12/IGHA1/IGKV1-5/IGKV2D-28/IGHV3-23/IGKV3-11/IGKV1D-39/IGLV2-8/IGLV2-11/IGLV7-43/IGKV4-1/IGHA2/IGHV1-69/IGLV1-51/IGHV4-39/IGLV6-57/IGKV3-20/IGHV3-7/IGKV1-17/IGHV3-48/IGHV3-53/IGKV1-12
REACTOME_CELL_SURFACE_INTERACTIONS_AT_THE_VASCULAR_WALL	3.0 358 508 16	0.0239 07265	IGHM/COL1A1/COL1A2/IGHV4-59/IGHV1-2/IGKV5-2/MMP1/IGKV1-39/IGHV1-46/IGKV2-30/IGKV2D-30/IGHV2-70/CEACAM1/IGKV3-15/IGLV3-25/IGHV4-34/GRB7/IGKV1-16/SDC1/CD177/IGLV3-21/IGLV1-47/CEACAM3/IGLV2-23/IGLV1-44/IGLV3-1/FN1/THBD/SELE/SELP/SHC1/ITGA4/SIRPG/TREM1/JAML/IGHV3-33/IGLV2-14/ITGA3/LCK/IGHV3-11/ITGAM/IGKV1D-16/IGHV3-30/IGLV3-19/PSG4/TNFRSF10A/ITGA5/ITGB3/CD2/APOB/TNFRSF10D/IGHV2-5/DOK2/PF4V1/IGLV1-40/CD44/CD84/IGLC2/IGKV1D-12/IGHA1/IGKV1-5/IGKV2D-28/IGHV3-23/IGKV3-11/ITGB2/PROS1/IGKV1D-39/IGLV2-8/IGLV2-11/CEACAM5/IGLV7-43/IGKV4-1/IGHA2/SLC16A3/IGHV1-69/ITGAL/TGFB1/ITGB1/SELL/CAV1/IGLV1-51/IGHV4-39/IGLV6-57/GAS6/TNFRSF10B/SLC7A8/SPN/INPP5D/MERTK/IGKV3-20/CD74/IGHV3-7/LYN/FCER1G/GPC1/IGKV1-17/IGHV3-48/IGHV3-53/GLG1/SLC7A7/F11R/PECAM1/IGKV1-12/PTPN6/ITGAX/PF4/ANGPT1/ANGPT2
REACTOME_FCGR3A_MEDIATED_IL10_SYNTHESIS	3.0 192 758 93	0.0198 64398	IGHV4-59/IGHG2/IGHG4/IGHV1-2/IGKV5-2/IGKV1-39/IGHV1-46/IGKV2-30/IGKV2D-30/IGHV2-70/IGKV3-15/IGLV3-25/IGHV4-34/IGKV1-16/ITPR3/IGHG1/IGLV3-21/IGLV1-47/IGLV2-23/IGLV1-44/IGLV3-1/IGHV3-33/IGLV2-14/IGHV3-11/CD3G/FCGR2A/IGKV1D-16/IGHV3-30/IGLV3-19/IGHV2-5/IGLV1-40/IGLC2/IGKV1D-12/ADCY7/IGKV1-5/IGKV2D-28/IL10/IGHV3-23/FCGR3A/IGKV3-11/IGKV1D-39/IGLV2-8/IGLV2-11/IGLV7-

			43/IGKV4-1/IGHV1-69/IGLV1-51/IGHV4-39/IGLV6-57/SYK/HCK/PLCG2/IGKV3-20/ADCY3/IGHV3-7/CD247/LYN/IGKV1-17/IGHV3-48/IGHV3-53/ITPR2/IGKV1-12
REACTOME_COLLAGEN_FORMATION	3.0 154 789 89	0.0198 64398	COL6A5/COL6A3/COL1A1/COL1A2/PCOLCE/COL5A1/COL6A2/COL12A1/LOX/COL13A1/COL14A1/COL3A1/COL8A1/LOXL4/LOXL1/MMP13/COL6A1/LAMA3/MMP7/P4HA3/COL5A2/COL15A1/ADAMTS2/COL22A1/COL21A1/ADAMTS14/COL8A2/COL7A1/PXDN/ITGB4/ADAMTS3/LOXL2/COL27A1/COL28A1/LAMC2/P4HA2/COL4A1/COL4A2/COL24A1/SERPINH1/COL18A1/COL25A1/MMP9/COLGALT1/CTSB/COL10A1/COL5A3/BMP1/PLOD2/MMP3/P3H3/CTSS/PLOD3/P3H1/LOXL3/CTSL/PLOD1/P3H2
REACTOME_INTERLEUKIN_4_AND_INTERLEUKIN_13_SIGNALING	2.9 841 395 08	0.0198 64398	CCL11/LBP/IGHE/COL1A2/IGHG4/PTGS2/F13A1/MMP1/IL6/LIF/CXCL8/ICAM1/LCN2/NOS2/FASLG/IGHG1/FN1/CCL2/CCL22/SOCS3/JAK3/ITGAM/GATA3/IL2RG/IL4R/TIMP1/TNFRSF1B/ALOX5/SAA1/VCAM1/IL10/ITGB2/PIM1/JUNB/STAT6/MMP9/IL6R/MUC1/BATF/CEBPD/OSM/FOS/IL1B/IRF4/IL12B/MMP3/TGFB1/CD36/TWIST1/ITGB1/LAMA5/SOCS1/VEGFA/IL13RA1/IL1A/CDKN1A/HMOX1/MCL1/STAT3/FOXO1/RORC/VIM/RORA/HIF1A/ITGAX/HGF/BCL6/TYK2/FOXO3/ANXA1
REACTOME_EXTRACELLULAR_MATRIX_ORGANIZATION	2.9 824 378 73	0.0348 78607	CAPN6/COL6A5/COL6A3/THBS1/COL1A1/COL1A2/MMP1/PCOLCE/COL5A1/COL6A2/COL12A1/LOX/COL13A1/COL14A1/SERPINE1/COL3A1/LUM/COL8A1/CEACAM1/LOXL4/MFAP2/LOXL1/MMP10/MMP13/ADAM12/ICAM1/LAMB1/MFAP5/COL6A1/LAMA3/FBLN1/TNXB/FBN1/CTSG/SDC1/EMILIN1/ITGA2/MMP7/P4HA3/ADAMTS1/LTBP2/COL5A2/COL15A1/LTBP1/LAMA2/ADAMTS2/MMP14/COL22A1/ADAM8/ITGA11/ADAM19/FN1/COL21A1/ITGA4/MMP19/ADAMTS14/MMP8/LAMC1/HSPG2/COL8A2/COL7A1/BGN/FBN2/TPSAB1/CMA1/IBSP/ITGA3/ACTN1/PXDN/FBLN5/TNC/ITGB4/ADAMTS3/LOXL2/ITGAM/COL27A1/COL28A1/LAMC2/ELN/COMP/ITGA5/ITGB3/TIMP1/P4HA2/A2M/NID1/COL4A1/CD44/COL4A2/ITGA10/FBLN2/EFEMP1/COL24A1/TGFB2/LAMA4/LTBP3/MMP11/VCAM1/SERPINH1/LAMA1/MMP12/COL18A1/FURIN/ITGB2/CAPN12/COL25A1/NID2/MMP9/ADAMTS9/COLGALT1/CTSB/COL10A1/ADAM9/COL5A3/ITGAD/BMP1/PLOD2/ELANE/TNN/MMP3/P3H3/GDF5/MFAP4/ITGB7/ITGAL/TGFB1/ICAM3/ITGB1/CTSS/ITGB5/LAMB2/PLOD3/ADAMTS16/MMP25/LAMA5/CAPN11/P3H1/LOXL3/FGG/DDR2/CAST/CTSK/ITGA1/CTSL/EFEMP2/TGFB3/ASPN/PLOD1/P3H2/VWF/LAMC3/F11R/ITGA7/P4HB/PECAM1/PRSS2/DMD/ADAMTS4/CTSD/ADAM10/ITGAX/KLKB1/SH3PXD2A/COL16A1/EMILIN2/ITGA9/SPP1/AGRN/P4HA1/SDC2/FMOD
PID_INTEGRIN1_PATHWAY	2.9 822 817 57	0.0198 64398	COL6A3/THBS1/COL1A1/COL1A2/F13A1/COL5A1/COL6A2/COL3A1/LAMB1/COL6A1/LAMA3/TGFB1/FBN1/ITGA2/COL5A2/LAMA2/ITGA11/FN1/ITGA4/NPNT/LAMC1/COL7A1/PLAUR/ITGA3/TNC/LAMC2/ITGA5/NID1/COL4A1/ITGA10/LAMA4/TGM2/VCAM1/LAMA1/COL18A1/CD14/PLAU/ITGB1/LAMB2/LAMA5/VEGFA/FGG/ITGA1/THBS2
REACTOME_CD22_MEDIATED_BCR_REGULATION	2.9 745 410 72	0.0198 64398	IGHM/IGHV4-59/IGHV1-2/IGKV5-2/IGKV1-39/IGHV1-46/IGKV2-30/IGKV2D-30/IGHV2-70/IGKV3-15/IGLV3-25/IGHV4-34/IGKV1-16/IGLV3-21/IGLV1-47/IGLV2-23/IGLV1-44/IGLV3-1/IGHV3-33/IGLV2-14/IGHV3-11/IGKV1D-16/IGHV3-30/IGLV3-19/IGHV2-5/IGLV1-40/IGLC2/IGKV1D-12/IGKV1-5/IGKV2D-28/IGHV3-23/IGKV3-11/IGKV1D-

			39/IGLV2-8/IGLV2-11/IGLV7-43/IGKV4-1/IGHV1-69/IGLV1-51/IGHV4-39/IGLV6-57/IGKV3-20/IGHV3-7/LYN/IGKV1-17/IGHV3-48/IGHV3-53/IGKV1-12/PTPN6
REACTOME_PARASITE_INFECTI	2.9 639 198 17	0.0198 64398	IGHV4-59/IGHG2/IGHG4/IGHV1-2/IGKV5-2/IGKV1-39/IGHV1-46/IGKV2-30/IGKV2D-30/IGHV2-70/IGKV3-15/IGLV3-25/IGHV4-34/IGKV1-16/IGHG1/IGLV3-21/IGLV1-47/IGLV2-23/IGLV1-44/IGLV3-1/IGHV3-33/IGLV2-14/IGHV3-11/CD3G/IGKV1D-16/IGHV3-30/IGLV3-19/IGHV2-5/IGLV1-40/MYH9/IGLC2/MYO1C/IGKV1D-12/ARPC1B/IGKV1-5/IGKV2D-28/IGHV3-23/FCGR3A/IGKV3-11/IGKV1D-39/IGLV2-8/NCKAP1L/IGLV2-11/IGLV7-43/IGKV4-1/VAV1/IGHV1-69/IGLV1-51/IGHV4-39/IGLV6-57/SYK/WIPF3/WAS/HCK/WIPF1/VAV2/IGKV3-20/IGHV3-7/CD247/LYN/IGKV1-17/IGHV3-48/IGHV3-53/IGKV1-12/WASF2/MYO9B
REACTOME_INTERLEUKIN_10_SIGNALING	2.9 465 369 53	0.0198 64398	CSF2/CCL20/PTGS2/CSF3/IL6/CCR2/LIF/CXCL8/IL1R1/CXCL1/ICAM1/IL1RN/IL1R2/CCL2/CXCL2/CCL22/CCR5/CCR1/TIMP1/TNFRSF1B/IL10/CD80/IL10RA/IL1B/CCL5/IL12B/FPR1/PTAFR/CSF1/IL1A/CXCL10/STAT3
REACTOME_CHEMOKINE_RECEPTORS_BIND_CHEMOKINES	2.9 430 441 56	0.0198 64398	CCL13/CCL11/CCL20/CXCL13/XCR1/CXCL5/CCR8/CCL7/CCR2/CCR4/CXCR3/PPBP/CXCR1/CXCL8/CXCL3/CXCL1/CCL2/CXCL2/CCL22/CXCR5/CCR7/CCR5/CCR6/CXCL6/CXCL9/CCR1/CCR3/CXCR2/CXCR6/CXCL12/CCL5
REACTOME_INTEGRIN_CELL_SURFACE_INTERACTIONS	2.9 375 565 38	0.0198 64398	COL6A5/COL6A3/THBS1/COL1A1/COL1A2/COL5A1/COL6A2/COL13A1/COL3A1/LUM/COL8A1/ICAM1/COL6A1/FBN1/ITGA2/COL5A2/ITGA11/FN1/ITGA4/HSPG2/COL8A2/COL7A1/IBSP/ITGA3/TNC/ITGAM/COMP/ITGA5/ITGB3/COL4A1/CD44/COL4A2/ITGA10/VCAM1/COL18A1/ITGB2/COL10A1/COL5A3/ITGAD/ITGB7/ITGAL/ICAM3/ITGB1/ITGB5/FGG/ITGA1/VWF/F11R/ITGA7/PECAM1/ITGAX/COL16A1/ITGA9/SPP1/AGRN
REACTOME_ASSEMBLY_OF_COLLAGEN_FIBRILS_AND_OTHER_MULTIMERIC_STRUCTURES	2.9 260 576 33	0.0198 64398	COL6A5/COL6A3/COL1A1/COL1A2/PCOLCE/COL5A1/COL6A2/COL12A1/LOX/COL14A1/COL3A1/COL8A1/LOXL4/LOXL1/MMP13/COL6A1/LAMA3/MMP7/COL5A2/COL15A1/COL8A2/COL7A1/PXDN/ITGB4/LOXL2/COL27A1/LAMC2/COL4A1/COL4A2/COL24A1/COL18A1/MMP9/CTSB/COL10A1/COL5A3/BMP1/MMP3/CTSS
REACTOME_FCGAMMA_RECEPTOR_FCGR_DEPENDENT_PHAGOCYTOSIS	2.8 957 842 31	0.0200 71884	IGHV4-59/IGHG2/IGHG4/IGHV1-2/IGKV5-2/IGKV1-39/IGHV1-46/IGKV2-30/IGKV2D-30/IGHV2-70/IGKV3-15/IGLV3-25/IGHV4-34/IGKV1-16/ITPR3/IGHG1/IGLV3-21/IGLV1-47/IGLV2-23/IGLV1-44/IGLV3-1/IGHV3-33/IGLV2-14/IGHV3-11/CD3G/FCGR2A/IGKV1D-16/IGHV3-30/IGLV3-19/IGHV2-5/IGLV1-40/MYH9/IGLC2/MYO1C/IGKV1D-12/ARPC1B/IGKV1-5/IGKV2D-28/IGHV3-23/FCGR3A/IGKV3-11/IGKV1D-39/IGLV2-8/NCKAP1L/IGLV2-11/IGLV7-43/IGKV4-1/VAV1/IGHV1-69/IGLV1-51/IGHV4-39/IGLV6-57/SYK/WIPF3/WAS/HCK/WIPF1/PLCG2/VAV2/LIMK1/IGKV3-20/IGHV3-7/CD247/PRKCD/LYN/IGKV1-17/IGHV3-48/IGHV3-53/ITPR2/IGKV1-12/WASF2/MYO9B

KEGG_HEMATOPOIETIC_CELL_LINEAGE	2.8 324 673 84	0.0198 64398	MME/CR1/CSF2/CD1B/CSF3/IL6/IL2RA/ANPEP/IL7R/IL1R1/IL11/ITGA2/IL1R2/IL9R/CR2/CD3E/ITGA4/ITGA3/CD5/ITGAM/CD3G/IL4R/ITGA5/ITGB3/CD2/CD44/CD1C/CD1E/CD7/CSF3R/CD14/IL6R/FLT3/IL1B/CD4/CSF1R/MS4A1/CD36/DNTT/CD1D/CD1A/CSF1/IL1A/ITGA1/GP1BA/CD3D
REACTOME_COLLAGEN_DEGRADATION	2.8 275 397 75	0.0198 64398	COL6A5/COL6A3/COL1A1/COL1A2/MMP1/COL5A1/COL6A2/COL12A1/COL13A1/COL14A1/COL3A1/COL8A1/MP10/MMP13/COL6A1/MMP7/COL5A2/COL15A1/MMP14/MMP19/MMP8/COL8A2/COL7A1/COL4A1/COL4A2/MP11/MMP12/COL18A1/FURIN/COL25A1/MMP9/CTSB/COL10A1/ADAM9/COL5A3/ELANE/MMP3
PID_SYNDECAN_1_PATHWAY	2.8 071 321 76	0.0198 64398	COL6A3/COL1A1/COL1A2/MMP1/COL5A1/COL6A2/COL12A1/COL13A1/COL14A1/COL3A1/COL8A1/COL6A1/SDC1/MMP7/MET/COL5A2/COL15A1/COL8A2/COL7A1/COL4A1/MMP9/COL10A1/CCL5/TGFB1/HPSE/LAMA5
NABA_CORE_MATRISOME	2.8 060 628 01	0.0297 13729	COL6A5/EPYC/COL6A3/THBS1/COL1A1/COL1A2/DPT/PCOLCE/POSTN/COL5A1/COL6A2/KERA/COL12A1/AMBN/COL13A1/MXRA5/COL14A1/SBSPON/COL3A1/LUM/CCN1/COL8A1/MFAP2/VIT/LAMB1/MFAP5/COL6A1/LAMA3/TGFB1/FBLN1/FNDC1/TNXB/FBN1/EMILIN1/SPON2/LTBP2/PODNL1/COL5A2/COL15A1/SNED1/LTBP1/LAMA2/SVEP1/COL22A1/SRPX2/FN1/COL21A1/LRG1/PXDNL/FBLN7/NPNT/PAPLN/LAMC1/HSPG2/COL8A2/COL7A1/BGN/FBN2/IBSP/AEBP1/PXDN/FBLN5/TNC/COL27A1/ZPLD1/COL28A1/IGFBP6/LAMC2/ELN/COMP/SMOC2/IGFBP3/NID1/COL4A1/CRISPLD2/COL4A2/CCN4/THBS3/FBLN2/EFEMP1/COL24A1/IGFBP4/LAMA4/LTBP3/HMCN2/LAMA1/COL18A1/ESM1/EGFLAM/COL25A1/NID2/SRPX/COL10A1/COL5A3/NDNF/SLIT3/CTHRC1/ECM1/CCN2/TNN/HMCN1/PRG4/MFAP4/CRIM1/HAPLN4/LAMB2/GAS6/LAMA5/ZP4/OGN/SPOCK2/FGG/TSKU/THBS2/DMBT1/EFEMP2/ASPN/SLIT2/SRGN/VWF/LAMC3/HAPLN3
WP_TYROBP_CAUSAL_NETWORK	2.7 978 160 2	0.0198 64398	DPYD/ELF4/TCIRG1/RBM47/ITGAM/TNFRSF1B/C3/CD84/TMEM106A/ITGB2/IL10RA/HLX/NCF2/NCKAP1L/LHFPL2/CD4/STAT5A/LGALS9C/SH2B3/ZFP36L2/HCLS1/PLEK/LOXL3/CREB3L2/GAPT/GAL3ST4/IL13RA1/BIN2/ADAP2/C1QC/NRROS/PPP1R18/SAMSN1/RUNX3/SLC7A7/CD37/ITGAX/MAF/NPC2/FKBP15/CXCL16/SPP1/SLC1A5/RNASE6/APBB1IP
REACTOME_COLLAGEN_BIOSYNTHESIS_AND_MODIFYING_ENZYMES	2.7 976 488 66	0.0198 64398	COL6A5/COL6A3/COL1A1/COL1A2/PCOLCE/COL5A1/COL6A2/COL12A1/COL13A1/COL14A1/COL3A1/COL8A1/COL6A1/P4HA3/COL5A2/COL15A1/ADAMTS2/COL22A1/COL21A1/ADAMTS14/COL8A2/COL7A1/ADAMTS3/COL27A1/COL28A1/P4HA2/COL4A1/COL4A2/COL24A1/SERPINH1/COL18A1/COL25A1/COLGALT1/COL10A1/COL5A3/BMP1/PLOD2/P3H3/PLOD3/P3H1
REACTOME_NEUTROPHIL_DEGRANULATION	2.7 810 296 49	0.0459 01829	MME/CR1/ORM1/ADGRE3/MCEMP1/ABCA13/FCN1/FPR2/ANPEP/RETN/PPBP/CLEC4D/CXCR1/CEACAM1/CXCL1/FCAR/LCN2/CTSG/CD177/HK3/CEACAM3/PTX3/HP/ADGRG3/ADAM8/B4GALT1/CHRN4/LRG1/CTS2/SERPINA1/GPR84/MMP8/RAB27A/CHI3L1/LTF/C5AR1/LILRB2/LILRB3/PLAUR/TCIRG1/SLC2A3/FCGR3B/ITGAM/CD93/FCGR2A/CNN2/SLC11A1/PGLYRP1/CYBB/IQGAP1/TARM1/TNFRSF1B/NFAM1/CRISPLD2/CD44/LYZ/TI

			CAM2/PTPRC/ALOX5/C3/TXNDC5/SLCO4C1/IGF2R/DOK3/DEFA4/CTSC/LAIR1/CLEC5A/TCN1/TLR2/CXCR2/S100A8/DOCK2/TBC1D10C/PYGL/RNASE2/ITGB2/MMP9/CD14/SLPI/MNDA/S100A9/VCL/SIGLEC9/CTSB/TRPM2/NCKAP1L/NBEAL2/ARG1/MVP/CAMP/GAA/PLAU/OSCAR/RAB44/CRACR2A/VNN1/ELANE/ALDH3B1/MAN2B1/FPR1/ITGAL/ATP8B4/SIGLEC14/CD36/HPSE/GUSB/SELL/GLIPR1/CTSS/SERPINA3/ARHGAP9/C3AR1/JUP/S100A5/MMP25/PTAFR/ARHGAP45/IQGAP2/DNASE1L1/GRN/ANXA2/GNS/HGSNAT/CD68/SIRPB1/FABP5/ATP11A/AGPAT2/BIN2/RNASE3/HEXB/HSPA1B/STING1/DNAJC3/SIGLEC5/ADGRE5/CTSA/S100P/NFKB1/HLA-C/HSPA6/HSPA1A/CFD/ANO6/HLA-B/FUCA1/S100A11/KRT1/PRKCD/P2RX1/RAB3D/FCER1G/UNC13D/LGALS3/FGL2/AMPD3/CD53/CDK13/PECAM1/PRSS2/GALNS/ADA2/CD33/PTPN6/RAP2B/STOM/S100A12/CTSD/MANBA/PTPRJ/ADAM10/ITGAX/CKAP4/CFP/ROCK1/FUCA2/LAMP1/NPC2/GSDMD/NHLRC3/ATP11B/AOC1/MGAM/PLEKHO2
REACTOME_MET_PROMOTES_CELL_MOTILITY	2.7 630 084 01	0.0198 64398	COL1A1/COL1A2/TNS4/COL5A1/COL3A1/LAMB1/LAMA3/ITGA2/MET/COL5A2/LAMA2/FN1/LAMC1/ITGA3/COL27A1/LAMC2/COL24A1/LAMA4/LAMA1/COL5A3/ITGB1/LAMB2/LAMA5
REACTOME_SIGNALING_BY_INTERLEUKINS	2.7 494 308 92	0.0459 01829	CCL11/CSF2/CCL20/LBP/IGHE/COL1A2/IL20/IL31RA/IGHG4/PTGS2/F13A1/MMP1/CSF3/IL6/IL2RA/CCR2/LIF/IL36B/CXCL8/IL7R/IL1R1/IL36RN/CXCL1/IL11/ICAM1/IL21R/LCN2/NOS2/CTSG/SDC1/FASLG/SOD2/IL18R1/IGHG1/IL2RB/IL22RA1/IL24/IL1RN/CSF2RB/IL19/CISH/IL1R2/FN1/IL9R/TSLP/CCL2/CXCL2/CCL22/IL22RA2/SHC1/SOCS3/JAK3/CLCF1/NOD2/CCR5/TEC/SERPINB2/OSMR/LCK/ITGAM/GATA3/IL2RG/IL4R/CCR1/CNN2/IL22/TIMP1/TNFRSF1B/IL36G/ALOX5/PTPN14/SAA1/LCP1/IFNG/CSF3R/MAP3K8/VCAM1/IL15RA/IL10/CD80/PTPN7/ITGB2/PIM1/PIK3CD/IL1RL1/JUNB/IL1RL2/NFKB2/STAT6/IL18RAP/MMP9/IL10RA/IL6R/MUC1/BATF/CEBPD/OSM/CRLF2/IL37/FOS/IL1B/IL1RAP/IRF4/CD4/CCL5/VAV1/IL12B/IRAK3/CSF1R/MMP3/FPR1/TGFB1/CD36/TWIST1/IL17RA/ITGB1/STAT5A/PTPN12/PTAFR/DUSP4/SYK/MSN/LAMA5/ANXA2/CSF1/SOCS1/VEGFA/HCK/IL15/INPP5D/IL13RA1/IL1A/IRS1/RAG1/CDKN1A/IRAK2/STXB2/HMOX1/NFKB1/MCL1/IRS2/CXCL10/IL27RA/RPS6KA3/STAT3/STAT2/MYD88/FOXO1/PTPN9/RORC/JUN/LYN/VIM/IL12RB1/CASP1/TNFRSF1A/P4HB/RORA/IL16/IL27/PTPN6/IL25/HIF1A/NFKBIA/S100A12/ITGAX/IL18BP/MAP3K3/SMAD3/HGF/DUSP6/IFNLR1/PTPN18/BCL6/TYK2/MAP2K3/FOXO3/ANXA1/IL20RB/IL32/INPPL1
WP_MIRNA_TARGETS_IN_ECM_AND_MEMBRANE_RECEPTORS	2.7 484 537 75	0.0198 64398	COL6A3/THBS1/COL1A2/COL5A1/COL6A2/COL3A1/COL6A1/TNXB/COL5A2/ITGA11/FN1/LAMC1/COL4A1/COL4A2/LAMA4/MIR548AA1/COL5A3/MIR219A1/MIR30C2/ITGB5/LAMB2/MIR200A/ITGA1/THBS2/MIR429/MIR200B
KEGG_ECM_RECEPTOR_INTERACTION	2.7 405	0.0198 64398	COL6A3/THBS1/COL1A1/COL1A2/COL5A1/COL6A2/COL3A1/LAMB1/COL6A1/LAMA3/TNXB/SDC1/ITGA2/COL5A2/LAMA2/ITGA11/FN1/ITGA4/LAMC1/HSPG2/IBSP/ITGA3/TNC/ITGB4/LAMC2/COMP/ITGA5/ITGB3/COL4A1/

	796 68		CD44/COL4A2/ITGA10/THBS3/LAMA4/LAMA1/COL5A3/TNN/ITGB7/CD36/ITGB1/ITGB5/LAMB2/LAMA5/ITGA1/T HBS2/GP1BA/VWF/LAMC3
REACTOME_ELASTIC_FIBRE_FORMATION	2.7 301 080 02	0.0198 64398	LOX/LOXL4/MFAP2/LOXL1/MFAP5/FBLN1/FBN1/EMILIN1/LTBP2/LTBP1/FN1/FBN2/FBLN5/LOXL2/ELN/ITGA5/I TGB3/FBLN2/EFEMP1/TGFB2/LTBP3/FURIN/GDF5/MFAP4/TGFB1/ITGB1/ITGB5/LOXL3/EFEMP2/TGFB3
NABA_COLLAGENS	2.7 252 878 06	0.0198 64398	COL6A5/COL6A3/COL1A1/COL1A2/COL5A1/COL6A2/COL12A1/COL13A1/COL14A1/COL3A1/COL8A1/COL6A1 /COL5A2/COL15A1/COL22A1/COL21A1/COL8A2/COL7A1/COL27A1/COL28A1/COL4A1/COL4A2/COL24A1/COL 18A1/COL25A1/COL10A1/COL5A3
REACTOME_COLLAGEN_CHAIN_TRIMERIZATION	2.7 252 878 06	0.0198 64398	COL6A5/COL6A3/COL1A1/COL1A2/COL5A1/COL6A2/COL12A1/COL13A1/COL14A1/COL3A1/COL8A1/COL6A1 /COL5A2/COL15A1/COL22A1/COL21A1/COL8A2/COL7A1/COL27A1/COL28A1/COL4A1/COL4A2/COL24A1/COL 18A1/COL25A1/COL10A1/COL5A3
KEGG_LEISHMANIA_INFECTIO	2.7 040 744 22	0.0198 64398	CR1/PTGS2/NOS2/FCGR2C/ITGA4/FCGR3B/ITGAM/FCGR2A/C3/MAPK13/TGFB2/IFNG/TLR2/IL10/FCGR3A/IT GB2/HLA-DQA1/NCF2/HLA-DOA/FOS/IL1B/IL12B/TGFB1/HLA-DQA2/HLA-DQB1/ITGB1/IL1A/NCF1/TGFB3/HLA- DPA1/NFKB1/MYD88/JUN/HLA-DRB1/PTPN6/NFKBIA/HLA-DPB1/NCF4/JAK2/TRAF6/FCGR1A/HLA- DMA/TLR4/MAPK14/IRAK1/HLA-DOB
WP_INTERACTIONS_BETWEEN_IMMUNE_CELLS_ AND_MICRORNAS_IN_TUMOR_MICROENVIRONM ENT	2.6 773 818 17	0.0198 64398	IL2RA/MIR23A/IL2RB/CCL2/MIR27A/TLR8/IL2RG/IL4R/CTLA4/TGFBR2/MIR210/CD274/TGFB2/CD80/NFKB2/ST AT6/CCL5/TLR7/TGFB1/SOCS1/MIR200A/PDCD1/TGFB3/NFKB1/CXCL10/STAT3/MIRLET7D/MIR200B
PID_UPA_UPAR_PATHWAY	2.6 716 293 91	0.0198 64398	FPR2/SERPINE1/MMP13/CTSG/FN1/FPR3/PLAUR/ITGA3/ITGAM/LRP1/ITGA5/ITGB3/MMP12/ITGB2/MMP9/PL AU/ELANE/MMP3/FPR1/TGFB1/ITGB1/ITGB5/PDGFRB/FGG
REACTOME_SIGNALING_BY_THE_B_CELL_RECEP TOR_BCR_	2.6 716 043 87	0.0220 41656	IGHM/IGHV4-59/IGHV1-2/IGKV5-2/IGKV1-39/IGHV1-46/IGKV2-30/IGKV2D-30/IGHV2-70/IGKV3-15/IGLV3- 25/IGHV4-34/IGKV1-16/ITPR3/IGLV3-21/IGLV1-47/IGLV2-23/IGLV1-44/IGLV3-1/IGHV3-33/IGLV2-14/IGHV3- 11/IGKV1D-16/IGHV3-30/IGLV3-19/IGHV2-5/IGLV1-40/IGLC2/IGKV1D-12/IGKV1-5/IGKV2D-28/IGHV3-23/IGKV3- 11/PIK3CD/IGKV1D-39/IGLV2-8/REL/PIK3AP1/IGLV2-11/IGLV7-43/IGKV4-1/VAV1/DAPP1/IGHV1-69/BLK/IGLV1- 51/IGHV4-39/IGLV6-57/SYK/NFATC2/PLCG2/IGKV3-20/NFKB1/IGHV3-7/LYN/CARD11/IGKV1-17/IGHV3- 48/IGHV3-53/ITPR2/MALT1/IGKV1-12/PTPN6/NFKBIA

KEGG_JAK_STAT_SIGNALING_PATHWAY	2.6 707 841	0.0214 15069	CSF2/IL20/CSF3/IL6/IL2RA/LEP/LIF/IL7R/CBLC/IL11/IL21R/IL2RB/IL22RA1/PRLR/IL24/CSF2RB/IL19/CISH/IL9R/TSLP/IL22RA2/SOCS3/JAK3/CLCF1/OSMR/IL2RG/IL4R/IL22/PIK3CG/IFNG/CSF3R/IL15RA/IL10/PIM1/PIK3CD/SPRY4/STAT6/IL10RA/IL6R/PIK3R5/OSM/CRLF2/IL12B/STAT5A/SOCS1/SPRY1/IL15/IL13RA1/IFNE/SPRED2/STAT3/STAT2/SPRY2/IL12RB1/PTPN6/IFNLR1/IFNA5/IFNA14/TYK2/IL20RB/EP300/JAK2/IFNAR1/IL10RB/IL23A/PIAS3
WP_HUMAN_COMPLEMENT_SYSTEM	2.6 688 368 59	0.0198 64398	CR1/THBS1/F13A1/FCN1/ICAM1/LAMB1/FCN2/ITGA2/PTX3/CFB/C1R/SELE/CR2/SELP/LAMC1/CFI/C5AR1/PLAUR/IBSP/C1S/CD93/CFH/ITGB3/C3/SERPING1/TLR2/FCGR3A/ADM/ITGB2/PROS1/GNA15/C5AR2/ELANE/FPR1/VSIG4/SELL/C3AR1/LAMA5/WAS/C5/FGG/C7/F11/CFD/CD40/C2/C8A/ITGAX/CLEC4M/CFP/KLKB1/SPP1/CRP/CD55/CD46/C4A/SFTPA1
REACTOME_DEGRADATION_OF_THE_EXTRACELLULAR_MATRIX	2.6 583 604 99	0.0199 95966	CAPN6/COL6A5/COL6A3/COL1A1/COL1A2/MMP1/COL5A1/COL6A2/COL12A1/COL13A1/COL14A1/COL3A1/COL8A1/MMP10/MMP13/LAMB1/COL6A1/LAMA3/FBN1/CTSG/MMP7/ADAMTS1/COL5A2/COL15A1/MMP14/ADAM8/FN1/MMP19/MMP8/LAMC1/HSPG2/COL8A2/COL7A1/FBN2/TPSAB1/CMA1/LAMC2/ELN/TIMP1/A2M/NID1/COL4A1/CD44/COL4A2/MMP11/MMP12/COL18A1/FURIN/CAPN12/COL25A1/MMP9/ADAMTS9/CTSB/COL10A1/ADAM9/COL5A3/BMP1/ELANE/MMP3/CTSS/ADAMTS16/MMP25/LAMA5/CAPN11/CAST/CTSK/CTSL
REACTOME_FC_EPSILON_RECEPTOR_FCERI_SIGNALING	2.6 582 648 78	0.0239 07265	IGHE/IGHV4-59/IGHV1-2/IGKV5-2/IGKV1-39/IGHV1-46/IGKV2-30/IGKV2D-30/IGHV2-70/IGKV3-15/ITK/IGLV3-25/IGHV4-34/IGKV1-16/ITPR3/IGLV3-21/IGLV1-47/IGLV2-23/IGLV1-44/IGLV3-1/GRAP2/SHC1/IGHV3-33/IGLV2-14/TEC/IGHV3-11/TXK/IGKV1D-16/IGHV3-30/IGLV3-19/IGHV2-5/IGLV1-40/IGLC2/IGKV1D-12/IGKV1-5/IGKV2D-28/IGHV3-23/IGKV3-11/IGKV1D-39/IGLV2-8/IGLV2-11/LCP2/IGLV7-43/FOS/IGKV4-1/VAV1/IGHV1-69/IGLV1-51/IGHV4-39/IGLV6-57/RASGRP4/SYK/NFATC2/PLCG2/VAV2/IGKV3-20/NFKB1/IGHV3-7/JUN/LYN/FCER1G/CARD11/IGKV1-17/IGHV3-48/IGHV3-53/ITPR2/MALT1/IGKV1-12
REACTOME_MET_ACTIVATES_PTK2_SIGNALING	2.6 464 696 49	0.0198 64398	COL1A1/COL1A2/COL5A1/COL3A1/LAMB1/LAMA3/ITGA2/MET/COL5A2/LAMA2/FN1/LAMC1/ITGA3/COL27A1/LAMC2/COL24A1/LAMA4/LAMA1/COL5A3/ITGB1/LAMB2/LAMA5
WP_INFLAMMATORY_RESPONSE_PATHWAY	2.6 409 348 71	0.0198 64398	THBS1/COL1A1/COL1A2/IL2RA/COL3A1/LAMB1/IL2RB/FN1/LAMC1/LCK/IL2RG/IL4R/LAMC2/TNFRSF1B/THBS3/IFNG/CD80/CD28/ZAP70/LAMB2/CD40LG/LAMA5
REACTOME_ECM_PROTEOGLYCANS	2.6 331 673 33	0.0198 64398	COL6A5/COL6A3/COL1A1/COL1A2/COL5A1/COL6A2/SERPINE1/COL3A1/LUM/LAMB1/COL6A1/LAMA3/TNXB/ITGA2/COL5A2/LAMA2/FN1/LAMC1/HSPG2/BGN/IBSP/TNC/COMP/ITGB3/COL4A1/COL4A2/TGFB2/LAMA4/LAMA1/COL5A3/TNN/TGFB1/ITGB1/ITGB5/LAMB2/LAMA5/TGFB3/ASPN

REACTOME_FCERI_MEDIATED_NF_KB_ACTIVATION	2.6 195 977 68	0.0200 71884	IGHE/IGHV4-59/IGHV1-2/IGKV5-2/IGKV1-39/IGHV1-46/IGKV2-30/IGKV2D-30/IGHV2-70/IGKV3-15/IGLV3-25/IGHV4-34/IGKV1-16/IGLV3-21/IGLV1-47/IGLV2-23/IGLV1-44/IGLV3-1/IGHV3-33/IGLV2-14/IGHV3-11/IGKV1D-16/IGHV3-30/IGLV3-19/IGHV2-5/IGLV1-40/IGLC2/IGKV1D-12/IGKV1-5/IGKV2D-28/IGHV3-23/IGKV3-11/IGKV1D-39/IGLV2-8/IGLV2-11/IGLV7-43/IGKV4-1/IGHV1-69/IGLV1-51/IGHV4-39/IGLV6-57/RASGRP4/IGKV3-20/NFKB1/IGHV3-7/LYN/FCER1G/CARD11/IGKV1-17/IGHV3-48/IGHV3-53/MALT1/IGKV1-12
REACTOME_SYNDECAN_INTERACTIONS	2.6 039 324 05	0.0198 64398	THBS1/COL1A1/COL1A2/COL5A1/COL3A1/SDC1/ITGA2/COL5A2/FN1/ACTN1/TNC/ITGB4/ITGB3/COL5A3/TGFB1/ITGB1/ITGB5
KEGG_CHEMOKINE_SIGNALING_PATHWAY	2.6 025 746 32	0.0239 07265	CCL13/CCL11/CCL20/CXCL13/CCL18/XCR1/CXCL5/CCR8/CCL7/GNGT1/CCR2/CCR4/CXCR3/PPBP/CXCR1/CXCL8/CXCL3/CCL23/CXCL1/ITK/CCL2/CXCL2/CCL22/SHC1/JAK3/CXCR5/CCR7/CCR5/CCR6/CXCL6/CXCL9/CCR1/PF4V1/PIK3CG/CCR3/ADCY7/CXCR2/DOCK2/CXCR6/CCL26/PIK3CD/CXCL12/PIK3R5/CCL14/RAC2/CCL5/VAV1/CCL24/PLCB2/CCL8/WAS/HCK/XCL2/VAV2/NCF1/NFKB1/CXCL10/ADCY3/STAT3/STAT2/PRKCD/LYN/PXN/GRK5/NFKBIA/ADCY4/XCL1/PF4/ROCK1/CXCL16/ROCK2/FOXO3/ADCY6/PLCB3/FGR
REACTOME_PD_1_SIGNALING	2.5 962 534 36	0.0198 64398	TRAV29DV5/CD3E/TRAV8-4/TRAV19/LCK/CD3G/TRBV7-9/CD274/PDCD1LG2/TRBV12-3/HLA-DQA1/CD4/HLA-DQB2/HLA-DQA2/HLA-DQB1/PDCD1/HLA-DPA1/CD3D/CD247/HLA-DRB1/PTPN6/HLA-DPB1
NABA_ECM_GLYCOPROTEINS	2.5 945 676 01	0.0239 07265	THBS1/DPT/PCOLCE/POSTN/AMBN/MXRA5/SBSPON/CCN1/MFAP2/VIT/LAMB1/MFAP5/LAMA3/TGFB1/FBLN1/FNDC1/TNXB/FBN1/EMILIN1/SPON2/LTBP2/SNED1/LTBP1/LAMA2/SVEP1/SRPX2/FN1/LRG1/PXDNL/FBLN7/NPNT/PAPLN/LAMC1/FBN2/IBSP/AEBP1/PXDN/FBLN5/TNC/ZPLD1/IGFBP6/LAMC2/ELN/COMP/SMOC2/IGFBP3/NID1/CRISPLD2/CCN4/THBS3/FBLN2/EFEMP1/IGFBP4/LAMA4/LTBP3/HMCN2/LAMA1/EGFLAM/NID2/SRPX/NDNF/SLIT3/CTHRC1/ECM1/CCN2/TNN/HMCN1/MFAP4/CRIM1/LAMB2/GAS6/LAMA5/ZP4/FGG/TSKU/THBS2/DMBT1/EFEMP2/SLIT2/VWF/LAMC3
WP_PHOTODYNAMIC_THERAPYINDUCED_NFKB_SURVIVAL_SIGNALING	2.5 940 450 29	0.0198 64398	CSF2/PTGS2/MMP1/IL6/CXCL8/ICAM1/SELE/CXCL2/BIRC3/RELB/VCAM1/NFKB2/REL/MMP9/IL1B/MMP3/CD40LG/BCL2A1/VEGFA/IL1A/NFKB1/CFLAR/TNFRSF1A
WP_TCELL_ANTIGEN_RECEPTOR_TCR_SIGNALING_PATHWAY	2.5 922 039 55	0.0198 64398	IL6/ICOS/ITK/CD3E/TNFRSF9/GRAP2/SHC1/CCR5/LCK/GATA3/CD3G/MAP3K8/IL15RA/REL/FYB1/CD28/ZAP70/LCP2/FOS/IL1B/IRF4/CD4/VAV1/TGFB1/SH2B3/WAS/NFATC2/MAP4K1/IL1A/MAP3K14/CD3D/NFKB1/CD247/PRKCD/JUN/CARD11/VIM/PSTPIP1/MALT1/SKAP1/NFKBIA/NFATC1/CD83/CD8A



PID_AVB3_INTEGRIN_PATHWAY	2.5 789 317 86	0.0198 64398	COL6A3/COL1A1/COL1A2/COL5A1/COL6A2/COL12A1/COL13A1/COL14A1/COL3A1/COL8A1/COL6A1/SDC1/COL5A2/COL15A1/FN1/ADGRA2/COL8A2/COL7A1/TGFBR2/ITGB3/COL4A1/VCL/COL10A1/CSF1R/TLN1/CSF1/VEGFA/IRS1/CASP8/PXN/F11R/ROCK1/COL16A1/SPP1
WP_MIRNAS_INVOLVEMENT_IN_THE_IMMUNE_RESPONSE_IN_SEPSIS	2.5 773 809 85	0.0198 64398	IL6/CXCL8/ICAM1/LCN2/MIR149/TLR8/MIR199A1/MIR146B/RELB/VCAM1/IL10/NFKB2/REL/ELANE/TLR7/MIR126/IL1A/IRF1/GZMB/NFKB1/MYD88/MIR200B/NFKBIA/TRAF3/MIR106B/IRF7/MIR199A2/IRF5/TRAF6/TLR4/MIR155HG/MAPK14/IRAK1
KEGG_TOLL_LIKE_RECEPTOR_SIGNALING_PATHWAY	2.5 616 956 24	0.0198 64398	LBP/IL6/CXCL8/TLR8/CXCL9/TICAM2/PIK3CG/TLR6/MAPK13/TLR2/MAP3K8/CD80/TLR5/PIK3CD/CD14/TLR9/PIK3R5/TLR1/FOS/IL1B/CCL5/IL12B/TLR7/TICAM1/IKBKE/CTSK/NFKB1/CXCL10/CASP8/MYD88/CD40/RIPK1/JUN/NFKBIA/TRAF3/LY96/IFNA5/SPP1/IFNA14/MAP2K3/IRF7/IFNAR1/CD86/IRF5/TRAF6/TLR3/TLR4/MAPK14/TIRAP/IRAK1
WP_ALLOGRAFT_REJECTION	2.5 616 787 88	0.0198 64398	CXCL13/COL5A1/IL2RA/CXCL8/FASLG/CXCR5/CXCL9/CTLA4/FOXP3/IL22/C3/PRF1/IFNG/IL10/CD80/HLA-DQA1/CD28/CXCL12/HLA-DOA/IL1B/IL12B/TGFB1/HLA-DQA2/HLA-DQB1/CD40LG/VEGFA/C5/C7/IL1A/AGTR1/GZMB/C1QC/HLA-DPA1/C1QA/HLA-C/C1QB/CASP8/CD40/HLA-B/C2/CASP7/VIM/HLA-DRB1/C8A/HLA-F/MICA/HLA-DPB1/HLA-E/CD55/C4A/CD86/FAS/HLA-DMA/C4B
WP_SELECTIVE_EXPRESSION_OF_CHEMOKINE_RECEPTORS_DURING_TCELL_POLARIZATION	2.5 588 672 53	0.0198 64398	CSF2/CCR2/CCR4/CXCR3/IL18R1/CCR7/CCR5/IL4R/CCR1/TGFB2/CCR3/IFNG/CD28/CD4/IL12B/TGFB1/CD40LG/TGFB3/IL12RB1
REACTOME_NON_INTEGRIN_MEMBRANE_ECM_INTERACTIONS	2.5 487 075 39	0.0198 64398	THBS1/COL1A1/COL1A2/COL5A1/COL3A1/LAMB1/LAMA3/SDC1/ITGA2/COL5A2/LAMA2/FN1/LAMC1/HSPG2/ACTN1/TNC/ITGB4/LAMC2/ITGB3/COL4A1/COL4A2/LAMA4/LAMA1/COL10A1/COL5A3/TGFB1/ITGB1/ITGB5/LAMB2/LAMA5
WP_TOLLLIKE_RECEPTOR_SIGNALING_PATHWAY	2.5 453 248 4	0.0198 64398	LBP/IL6/CXCL8/TLR8/CXCL9/TICAM2/PIK3CG/TLR6/MAPK13/TLR2/MAP3K8/CD80/TLR5/PIK3CD/CD14/TLR9/PIK3R5/TLR1/FOS/IL1B/CCL5/IL12B/TLR7/TICAM1/IKBKE/NFKB1/CXCL10/CASP8/MYD88/CD40/RIPK1/JUN/NFKBIA/TRAF3/LY96/IFNA5/SPP1/IFNA14/MAP2K3/IRF7/IFNAR1/CD86/IRF5/TRAF6/TLR3/TLR4/MAPK14/TIRAP/IRAK1
NABA_BASEMENT_MEMBRANES	2.5 434 322 21	0.0198 64398	COL6A5/COL6A3/COL6A2/LAMB1/COL6A1/LAMA3/COL15A1/LAMA2/NPNT/PAPLN/LAMC1/HSPG2/LAMC2/NID1/COL4A1/COL4A2/LAMA4/LAMA1/COL18A1/NID2/HMCN1/LAMB2/LAMA5

KEGG_GRAFT_VERSUS_HOST_DISEASE	2.5 414 895 03	0.0198 64398	IL6/FASLG/KIR2DL1/PRF1/IFNG/CD80/HLA-DQA1/CD28/HLA-DOA/IL1B/HLA-DQA2/HLA-DQB1/IL1A/GZMB/HLA-DPA1/HLA-C/KIR3DL2/HLA-B/HLA-DRB1/KIR3DL1/HLA-F/HLA-DPB1/KLRD1/HLA-E/CD86/FAS/HLA-DMA/KIR2DL3/HLA-DOB/HLA-G
PID_IL12_2PATHWAY	2.5 367 843 71	0.0198 64398	IL2RA/IL1R1/NOS2/FASLG/IL18R1/IL2RB/EOMES/CD3E/CCR5/LCK/CD3G/IL2RG/IFNG/RELB/NFKB2/STAT6/IL18RAP/HLX/FOS/IL1B/CD4/IL12B/GADD45B/STAT5A/SOCS1/GZMA/GZMB/CD3D/NFKB1/STAT3/CD247/IL12RB1/CD8A/TYK2/MAP2K3
REACTOME_LAMININ_INTERACTIONS	2.5 345 680 71	0.0198 64398	LAMB1/LAMA3/ITGA2/LAMA2/LAMC1/HSPG2/COL7A1/ITGA3/ITGB4/LAMC2/NID1/COL4A1/COL4A2/LAMA4/LAMA1/COL18A1/NID2/ITGB1/LAMB2/LAMA5/ITGA1/LAMC3/ITGA7
PID_INTEGRIN_A9B1_PATHWAY	2.5 329 762 68	0.0198 64398	CSF2/F13A1/KCNJ15/ADAM12/NOS2/ADAM8/FN1/TNC/TGM2/VCAM1/VEGFC/ITGB1/VEGFA/PXN/ITGA9/SPP1/SAT1
REACTOME_GENERATION_OF_SECOND_MESSENGER_MOLECULES	2.5 199 593 15	0.0198 64398	ITK/TRAV29DV5/CD3E/TRAV8-4/GRAP2/TRAV19/LCK/CD3G/TRBV7-9/TRBV12-3/HLA-DQA1/FYB1/ZAP70/LCP2/CD4/HLA-DQB2/HLA-DQA2/HLA-DQB1/WAS/PLCG2/HLA-DPA1/CD3D/CD247/VASP/HLA-DRB1/HLA-DPB1
WP_THYMIC_STROMAL_LYMPHOPOIETIN_TSLP_SIGNALING_PATHWAY	2.5 061 266 88	0.0198 64398	CCL11/IL6/IL2RA/CXCL8/IL7R/CISH/TSLP/TNFSF4/TEC/LCK/RELB/FES/NFKB2/STAT6/CRLF2/STAT5A/HCK/NFKB1/STAT3/LYN
WP_CANCER_IMMUNOTHERAPY_BY_PD1_BLOCKADE	2.5 022 223 29	0.0198 64398	CD3E/LCK/CD3G/CD274/PDCD1LG2/IFNG/NFATC4/BATF/ZAP70/NFATC2/PDCD1/CD3D/NFKB1/STAT3/JUN/HLA-DRB1/NFATC1/CD8A/NFAT5/NFATC3
WP_EBOLA_VIRUS_PATHWAY_ON_HOST	2.5 001 393 94	0.0198 64398	CD209/CLEC10A/TIMD4/ITGA2/CLEC6A/ITGA4/SOCS3/ITGA3/ACTN1/ITGA5/ITGB3/IQGAP1/RELB/PIK3CD/FLNA/HLA-DQA1/NFKB2/REL/CTSB/SCIN/HLA-DOA/HLA-DQB2/ICAM3/HLA-DQA2/HLA-DQB1/ITGB1/CAV1/GAS6/IKBKE/VAV2/ITGA1/CTSL/MERTK/HLA-DPA1/NFKB1/HLA-C/ACTN4/HLA-B/AXL/HLA-DRB1/DDX58/CLEC4M/HLA-F/HLA-DPB1/NPC2/EP300/HLA-E/HAVCR1/IRF7/RASA2/HAVCR2/NPC1/HLA-

			DMA/TLR4/CD300A/ADAM17/IGF1R/HLA-DOB/HLA-G/STAT1/ITGAV/BST2/HLA-DRA/AKT1/VPS18/CREBBP/NEDD4/GSN
BIOCARTA_NKT_PATHWAY	2.4 974 929 49	0.0198 64398	CSF2/CCR4/CXCR3/IL18R1/CCR7/CCR5/IL4R/CCR1/TGFB2/CCR3/IFNG/CD28/CD4/TGFB1/CD40LG/TGFB3/IL12RB1
KEGG_NOD_LIKE_RECEPTOR_SIGNALING_PATHWAY	2.4 913 852 49	0.0198 64398	CCL13/CCL11/CCL7/IL6/CXCL8/CXCL1/TNFAIP3/MEFV/CCL2/CXCL2/BIRC3/NOD2/MAPK13/NAIP/IL1B/CCL5/CASP5/NLRC4/CCL8/NLRP3/CARD6/NFKB1/CASP8/TRIP6/CARD9/PSTPIP1/CASP1
REACTOME_MOLECULES_ASSOCIATED_WITH_ELASTIC_FIBRES	2.4 819 990 85	0.0198 64398	MFAP2/MFAP5/FBLN1/FBN1/EMILIN1/LTBP2/LTBP1/FN1/FBN2/FBLN5/ELN/ITGB3/FBLN2/EFEMP1/TGFB2/LTBP3/GDF5/MFAP4/TGFB1/ITGB1/ITGB5/EFEMP2/TGFB3
WP_TYPE_II_INTERFERON_SIGNALING_IFNG	2.4 786 065 21	0.0198 64398	REG1A/ICAM1/NOS2/SOCS3/CIITA/CXCL9/CYBB/IFNG/IL1B/IRF4/SOCS1/IRF1/CXCL10/STAT2/HLA-B/SPI1/PRKCD/GBP1/TAP1/JAK2/IRF8/OAS1/IRF9/IRF2/STAT1/IFNB1
KEGG_INTESTINAL_IMMUNE_NETWORK_FOR_IGA_PRODUCTION	2.4 605 851 56	0.0198 64398	IL6/ICOS/ITGA4/IL15RA/IL10/CD80/HLA-DQA1/CD28/CXCL12/TNFRSF17/HLA-DOA/ITGB7/TGFB1/HLA-DQA2/HLA-DQB1/CD40LG/IL15/MAP3K14/TNFRSF13B/HLA-DPA1/TNFSF13/CD40/LTBR/HLA-DRB1/HLA-DPB1/CD86/HLA-DMA/CXCR4/HLA-DOB/TNFSF13B
PID_IL4_2PATHWAY	2.4 601 869 03	0.0198 64398	CCL11/COL1A1/IGHE/COL1A2/IGHG1/SELP/SHC1/SOCS3/TFF3/JAK3/IL2RG/IGHG3/IL4R/ITGB3/DOK2/EGR2/CEBPB/IL10/CCL26/FES/STAT6/ARG1/IRF4/STAT5A/CD40LG/SOCS1/PARP14/IL13RA1/IRS1/IRS2/SPI1/SP1/PTPN6
WP_TYPE_I_COLLAGEN_SYNTHESIS_IN_THE_CONTEXT_OF_OSTEOGENESIS_IMPERFECTA	2.4 596 794 3	0.0198 64398	COL1A1/COL1A2/LOX/FZD1/ADAMTS2/TNFSF11/TNFRSF11A/P4HA2/SERPINH1/COLGALT1/CREB3L1/BMP1/PLOD2/SERPINF1/P3H1/PLOD1/P3H2/P4HB/FKBP10/P4HA1/IFITM5/TNFRSF11B/WNT1/LRP5
WP_TOLLLIKE_RECEPTOR_SIGNALING_RELATED_TO_MYD88	2.4 549	0.0198 64398	TLR8/TICAM2/TLR6/TLR2/RELB/TLR5/NFKB2/REL/TLR9/TLR1/TLR7/TICAM1/IKBKE/NFKB1/MYD88/TRAF3/IRF7/TRAF6/TLR3/TLR4/TIRAP/IRAK1

	794 75		
WP_REGULATION_OF_TOLLLIKE_RECEPTOR_SIGNALING_PATHWAY	2.4 471 716 23	0.0199 95966	LBP/IL6/CXCL8/TNFAIP3/CISH/TREM1/TLR8/CXCL9/TICAM2/PIK3CG/TLR6/MAPK13/TLR2/MAP3K8/CD80/TLR5/PIK3CD/NFKB2/CD14/TLR9/PIK3R5/TLR1/FOS/IL1B/CCL5/IL12B/IRAK3/TLR7/SYK/SOCS1/TICAM1/IKBKE/CD180/IRAK2/NFKB1/CXCL10/CASP8/MYD88/CD40/RIPK1/TIFA/JUN/PTPN6/NFKBIA/TRAF3/LY96/RNF31/RNF216/IFNA5/SPP1/IFNA14/MAP2K3/IRF7/IFNAR1/CD86/IRF5/TRAF6/TLR3/TLR4/MAPK14/TIRAP/IRAK1/SQSTM1/BTK/TAB3/STAT1/IFNB1/IKBKB
PID_IL6_7_PATHWAY	2.4 466 315 54	0.0198 64398	LBP/IL6/TNFSF11/SOCS3/TIMP1/A2M/CEBPB/JUNB/IL6R/CEBPD/FOS/VAV1/HCK/FGG/IRF1/MCL1/STAT3/FOXO1/PRKCD/JUN/CRP/TYK2/JAK2/PIAS3/MAPK14/HSP90B1/STAT1/AKT1/PTPRE/IL6ST/PIK3CA/PIAS1/SOS1
PID_TCR_PATHWAY	2.4 407 105 55	0.0198 64398	ITK/CD3E/GRAP2/SHC1/LCK/CD3G/PTPRC/SLA2/MAP3K8/CD80/RASSF5/FLNA/FYB1/CD28/ZAP70/LCP2/CD4/VAV1/WAS/MAP4K1/MAP3K14/CD3D/CD247/CARD11/MALT1/PTPN6/RASGRP1/PLCG1/CD86/TRAF6/SH3BP2/CBL/ORAI1/LAT/BCL10/IKBKB/DBNL/STIM1/HLA-DRA/AKT1/RASGRP2/PTEN
WP_IL18_SIGNALING_PATHWAY	2.4 376 620 84	0.0295 61976	CCL20/COL1A1/CCL18/COL1A2/PTGS2/MMP1/IL6/IL2RA/HCAR2/COL3A1/CXCL8/CXCL3/MMP13/ICAM1/NFKBIZ/TNFAIP2/NOS2/FASLG/TNFAIP3/IL18R1/ZC3H12A/PTX3/MMP14/ACOD1/TNFSF11/FN1/CLDN4/CCL2/CXCL2/BIRC3/SOCS3/MMP8/RUNX2/TNIP3/LCK/LTB/IER3/TIMP1/TICAM2/CCN4/IFNG/TGM2/NFATC4/CEBPB/CLDN1/IL10/S1PR4/PTPN7/NFKB2/REL/IL18RAP/MMP9/NCF2/NR4A1/ARG1/PPP1R13L/IL37/FOS/IL1B/CCL5/IL12B/CLDN3/MMP3/CD36/PLOD3/GRN/VEGFA/SLC4A7/IRF1/NCF1/TRAF1/HMOX1/NFKB1/CCDC9/TRPC2/CASP8/MYD88/PRKCD/JUN/BAZ1B/CFLAR/ARF6/TNFRSF1A/SP1/ACACB/ACTA2/IRF6/NFKBIA/IL18BP/CD83/CXCL16/SPP1/UGGT1/RGS16/LRRFIP1/HSPB1/PLCG1/TRPM7/KITLG/TRAF6/ATF3/FAS/SEMA6D/MEF2A/SDC4/PLA2G7/ZDHHC7/FOXN3/FAM186B/ACTA1/ZBTB7A/IRAK1/ITGA2B/TP53/GATA1/ULBP2/PIGT/RASA3/TNFRSF11B/IL17RC/TIMP3
KEGG_COMPLEMENT_AND_COAGULATION_CASCADES	2.4 204 822 95	0.0198 64398	CR1/F13A1/BDKRB1/SERPINE1/BDKRB2/CFB/C1R/THBD/CR2/SERPINA1/CFI/C5AR1/PLAUR/C1S/CFH/C4BPB/A2M/C3/SERPING1/PROS1/PLAU/C3AR1/F3/C5/FGG/C7/F11/C1QC/C1QA/C1QB/CFD/C2/VWF/F2R
REACTOME_INTERFERON_ALPHA_BETA_SIGNALING	2.4 185 426 54	0.0198 64398	SOCS3/EGR1/XAF1/OAS3/MX2/IRF4/SOCS1/HLA-H/MX1/IFITM2/GBP2/IRF1/HLA-C/STAT2/HLA-B/SAMHD1/IFITM1/OAS2/IFITM3/PTPN6/IRF6/HLA-F/OASL/IFNA5/IFNA14/TYK2/HLA-E/IRF7/IRF8/IFNAR1/OAS1/IRF5/RSAD2/RNASEL/ADAR/IRF9/HLA-G/IRF2/STAT1/USP18/IFNB1/PTPN1/BST2/ISG20/IFNA17

PID_IL23_PATHWAY	2.4 180 085 23	0.0198 64398	IL6/CXCL1/NOS2/IL18R1/IL24/IL19/CCL2/CD3E/SOCS3/ITGA3/CXCL9/IFNG/IL18RAP/IL1B/CD4/IL12B/STAT5A/NFKB1/STAT3/IL12RB1/NFKBIA/TYK2/JAK2/IL23A
WP_CYTOKINES_AND_INFLAMMATORY_RESPONSE	2.4 049 945 49	0.0198 64398	CSF2/CSF3/IL6/CXCL1/IL11/CXCL2/IFNG/IL10/IL1B/CD4/IL12B/TGFB1/CSF1/IL15/IL1A
NABA_ECM_REGULATORS	2.4 036 002 45	0.0261 1674	PAPPA/F13A1/MMP1/PI3/LOX/SERPINE1/FAM20A/CPN2/LOXL4/LOXL1/MMP10/MMP13/ADAM12/CTSG/MMP7/P4HA3/ADAMTS1/HTRA4/FAM20C/ADAMTS2/MMP14/ADAM8/ADAM19/CD109/HTRA3/CTSZ/SERPINA1/MMP19/ADAMTS14/MMP8/PCSK5/SERPINB2/PAPPA2/ADAMTS3/LOXL2/ADAMTSL4/ADAMTS12/ADAMTSL1/SERPINA9/TIMP1/P4HA2/A2M/AMBP/CST7/SERPING1/CTSC/MMP11/TGM2/SERPINH1/MMP12/MMP9/ADAMTS9/SLPI/HABP2/SULF1/CTSB/ADAM9/PLAU/BMP1/PLOD2/ELANE/MMP3/SERPINF1/P3H3/ADAMTSL5/ST14/HPSE/CSTA/CTSS/SERPINA3/PLOD3/ADAMTS16/MMP25/CTSW/P3H1/LOXL3/CTSK/CTSL/CTSA/SERPINB4/CST6/ADAM28/PLOD1/KAZALD1/P3H2/SERPINB9/PAMR1/MMP23B/SERPINB5/PRSS2/TGM5/ADAMTS4/SERPINB8/CTSD/ADAM10/ADAMTS13/MMP27/PZP/ADAM33/SERPINB13/ADAMTS7/P4HA1/SERPINB7
KEGG_FOCAL_ADHESION	2.4 021 624 17	0.0239 69653	COL6A3/THBS1/COL1A1/COL1A2/COL5A1/COL6A2/MYL10/COL3A1/LAMB1/COL6A1/LAMA3/TNXB/ITGA2/MET/COL5A2/LAMA2/ITGA11/FN1/BIRC3/SHC1/ITGA4/LAMC1/IBSP/ITGA3/ACTN1/TNC/ITGB4/LAMC2/COMP/ITGA5/ITGB3/COL4A1/COL4A2/PIK3CG/ITGA10/THBS3/ERBB2/LAMA4/LAMA1/PIK3CD/FLNA/VCL/VEGFC/PIK3R5/COL5A3/RAC2/VAV1/TNN/ITGB7/EGF/MYL7/ITGB1/CAV1/ITGB5/LAMB2/ZYX/PDGFRB/TLN1/LAMA5/MYL9/FLT4/VEGFA/VAV2/ITGA1/THBS2/ACTN4/VWF/LAMC3/JUN/FLT1/PARVG/PXN/ITGA7/VASP/PDGFD
WP_FIBRIN_COMPLEMENT_RECEPTOR_3_SIGNALING_PATHWAY	2.3 956 937 16	0.0198 64398	LBP/IL6/CXCL3/NOS2/CCL2/ITGAM/TICAM2/RASSF5/ITGB2/CD14/IL12B/SYK/TICAM1/FGG/IRAK2/NFKB1/CXCL10/MYD88/LY96/TRAF6/TLR3/TLR4/TIRAP/IRAK1
REACTOME_COSTIMULATION_BY_THE_CD28_FAMILY	2.3 921 231 48	0.0198 64398	ICOS/TRAV29DV5/CD3E/TRAV8-4/GRAP2/TRAV19/LCK/CD3G/CTLA4/TRBV7-9/CD274/PDCD1LG2/MAP3K8/CD80/TRBV12-3/HLA-DQA1/CD28/CD4/VAV1/HLA-DQB2/HLA-DQA2/HLA-DQB1/TNFRSF14/MAP3K14/PDCD1/HLA-DPA1/CD3D/CD247/LYN/HLA-DRB1/PTPN6/HLA-DPB1/PRR5
KEGG_ALLOGRAFT_REJECTION	2.3 891 023 18	0.0198 64398	FASLG/PRF1/IFNG/IL10/CD80/HLA-DQA1/CD28/HLA-DOA/IL12B/HLA-DQA2/HLA-DQB1/CD40LG/GZMB/HLA-DPA1/HLA-C/CD40/HLA-B/HLA-DRB1/HLA-F/HLA-DPB1/HLA-E/CD86/FAS/HLA-DMA/HLA-DOB/HLA-G

WP_LUNG_FIBROSIS	2.3 871 309 77	0.0198 64398	CCL11/CSF2/CSF3/IL6/CCR2/CXCL8/PTX3/CCL2/CXCL2/SERPINA1/CMA1/ELN/TIMP1/CCR3/CEBPB/MMP9/P LAU/CCN2/IL1B/CCL5/IL12B/TGFB1/EGF/ATP11A/HMOX1/CALCA/HGF/RTEL1/SPP1/DPP9/PDGFA/SFTPA1/T ERT
PID_INTEGRIN3_PATHWAY	2.3 732 746 05	0.0198 64398	THBS1/COL1A1/COL1A2/CCN1/LAMB1/TGFB1/FBN1/SDC1/FN1/LAMC1/PLAUR/IBSP/TNC/TGFBR2/ITGB3/COL 4A1/LAMA4/PLAU/PDGFRB/VEGFA/FGG/PVR
WP_SENESCENCE_AND_AUTOPHAGY_IN_CANCE R	2.3 706 093 7	0.0198 64398	THBS1/COL1A1/IL6/SERPINE1/COL3A1/CXCL8/CXCL1/INHBA/IL24/MMP14/FN1/TNFSF15/SERPINB2/IGFBP3/ CD44/IFNG/CEBPB/IL6R/COL10A1/MAP1LC3C/PLAU/IL1B/TGFB1/IF116/IL1A/IRF1/CDKN1A/JUN/SMAD3/LAMP 1/MAP2K3/IGFBP5/IRF7/IRF5/CXCL14/MAPK14/CDKN2A/RNASEL/SQSTM1/IGF1R/CREG1/TP53
PID_INTEGRIN2_PATHWAY	2.3 683 283 84	0.0198 64398	CCN1/ICAM1/TGFB1/SPON2/PLAUR/ITGAM/FCGR2A/C3/VCAM1/ITGB2/PLAU/ITGAD/ITGAL/ICAM3/CD40LG/F GG/GP1BA/F11R/ITGAX
REACTOME_INTERLEUKIN_20_FAMILY_SIGNALIN G	2.3 624 377 53	0.0198 64398	IL20/IL22RA1/IL24/IL19/IL22RA2/SOCS3/JAK3/IL22/STAT5A/STAT3/STAT2/IFNLR1/TYK2/IL20RB/JAK2/IL10RB
REACTOME_REGULATION_OF_INSULIN_LIKE_GR OWTH_FACTOR_IGF_TRANSPORT_AND_UPTAKE_ BY_INSULIN_LIKE_GROWTH_FACTOR_BINDING_P ROTEINS_IGFBPS_	2.3 509 681 6	0.0198 64398	PAPPA/MMP1/IL6/AMBN/FAM20A/CCN1/LAMB1/FBN1/CTSG/FAM20C/LTBP1/CP/FN1/SERPINA1/APOA2/LAM C1/PAPPA2/TNC/MXRA8/IGFBP6/IGFBP3/APOB/TIMP1/APOL1/KLK13/C3/EVA1A/IGFBP4/MELTF/FSTL1/LAMB 2/GAS6/CSF1/FGG/DNAJC3/CDH2/BPIFB2/CALU/KLK1/GZMH/TGOLN2/FSTL3/P4HB/MGAT4A/IGFBP1/ADAM1 0/CKAP4/FUCA2/SPP1/SDC2/QSOX1/IGFBP5/APLP2/NUCB1/C4A/PDIA6/DMP1/VCAN
WP_TGFBETA_SIGNALING_PATHWAY	2.3 503 897 2	0.0198 64398	THBS1/COL1A2/MMP1/FOSB/ITGA2/MET/FN1/SHC1/RUNX2/TNC/ITGB4/DAB2/FOXP3/TGFBR2/NEDD9/CDKN 2B/ITGB3/SIK1/YAP1/MMP12/JUNB/FOS/PML/TGFB1/ITGB1/CAV1/MAP4K1/KLF6/CDKN1A/MAPK4/JUN/SKI/S P1/KLF10/KLF11/ROCK1/SMAD3/MAP2K3/TGFB11/EP300/SIN3A/TRAF6/TERT/ATF3/LIMK2/MEF2A/CITED1/M APK14/FOXH1/SMURF1
PID_NFAT_TFPATHWAY	2.3 476 953 5	0.0198 64398	CSF2/PTGS2/IL2RA/CXCL8/FASLG/GATA3/CTLA4/FOXP3/EGR1/FOSL1/EGR2/IKZF1/IFNG/EGR3/JUNB/FOS/I RF4/GBP3/CD40LG/NFATC2/JUN/MAF/NFATC1/NFATC3

PID_LYMPH_ANGIOGENESIS_PATHWAY	2.3 475 546 1	0.0198 64398	COL1A1/COL1A2/ITGA2/FN1/SHC1/ITGA4/ITGA5/VEGFC/ITGB1/FLT4/ITGA1
REACTOME_DISEASES_OF_IMMUNE_SYSTEM	2.3 447 071 69	0.0198 64398	TLR6/TLR2/TLR5/NFKB2/CD14/TLR1/CD36/TICAM1/UNC93B1/NFKB1/MYD88/NFKBIA/TRAF3/LY96/TLR3/TLR4/TIRAP/BTK/IKBKB
REACTOME_INTERFERON_GAMMA_SIGNALING	2.3 443 970 82	0.0198 64398	ICAM1/GBP5/SOCS3/CIITA/CD44/GBP4/OAS3/IFNG/IFI30/VCAM1/HLA-DQA1/TRIM38/PML/IRF4/HLA-DQB2/GBP3/HLA-DQA2/HLA-DQB1/TRIM22/PTAFR/SOCS1/HLA-H/GBP2/IRF1/HLA-DPA1/HLA-C/GBP6/HLA-B/PRKCD/TRIM34/TRIM5/OAS2/GBP1/HLA-DRB1/PTPN6/IRF6/TRIM10/HLA-F/OASL/HLA-DPB1/TRIM14/SP100/TRIM6/HLA-E/PTPN2/IRF7/JAK2/IRF8/OAS1/IRF5/TRIM25/FCGR1A/TRIM45/MID1/CAMK2D/IRF9/HLA-G/IRF2/STAT1/TRIM26/PTPN1/TRIM21/HLA-DRA
WP_IL4_SIGNALING_PATHWAY	2.3 443 207 75	0.0198 64398	SHC1/SOCS3/JAK3/GATA3/IL2RG/IL4R/DOK2/CEBPB/PIK3CD/FLNA/FES/STAT6/FOS/HRH1/STAT5A/SOCS1/NPP5D/IRS1/NFKB1/IRS2/STAT3/PTPN6/NFKBIA/TYK2/EP300/JAK2/MAPK14/CBL/STAT1/IKBKB/AKT1/NFIL3
PID_AP1_PATHWAY	2.3 441 455 69	0.0198 64398	CSF2/COL1A2/MMP1/FOSB/IL6/CXCL8/CCN1/CCL2/FOSL2/NTS/TIMP1/EGR1/FOSL1/IFNG/IL10/JUNB/MMP9/PLAU/FOS/ESR1/DUSP1/TGFB1/NFATC2/TRIP6/JUN/SP1/HIF1A/MAF/NFATC1/BCL2L11/NFATC3/EP300/DMP1/ATF3/CDKN2A/ACTA1
WP_PRIMARY_FOCAL_SEGMENTAL_GLOMERULOSCLEROSIS_FSGS	2.3 417 705 86	0.0198 64398	MME/CR1/DKK1/PLAUR/ITGA3/ITGB4/SYNPO/ITGB3/MYO1E/MYH9/KRT8/CLDN1/CD80/VCL/KIRREL2/TGFB1/UTRN/ITGB1/CD2AP/LAMB2/PODXL/TLN1/LAMA5/WT1/FAT1/CDKN1A/CTSL/CDH2/ACTN4/LIMS1/VIM/PAX2/IRF6/PLCE1/AGRN/PLCG1/PARVA/TLR4/JAG1
WP_FOCAL_ADHESION	2.3 412 585 93	0.0239 07265	THBS1/COL1A1/COL1A2/COL6A2/MYL10/LAMB1/LAMA3/TNXB/ITGA2/MET/COL5A2/LAMA2/ITGA11/FN1/BIRC3/SHC1/ITGA4/LAMC1/IBSP/ITGA3/ACTN1/TNC/ITGB4/LAMC2/TXK/COMP/ITGA5/ITGB3/COL4A1/COL4A2/ITGA10/THBS3/ERBB2/LAMA4/LAMA1/PIK3CD/FLNA/VCL/VEGFC/COL5A3/RAC2/VAV1/TNN/ITGB7/EGF/MYL7/ITGB1/CAV1/BLK/ITGB5/LAMB2/ZYX/PDGFRB/TLN1/LAMA5/MYL9/VEGFA/HCK/VAV2/ITGA1/THBS2/ACTN4/VWF/LAMC3/JUN/FLT1/PARVG/PXN/ITGA7/VASP/PDGFD/ROCK1/HGF/ITGA9/SPP1/ROCK2/KDR/FGR/PDGFA/PARVA/LAMB3

KEGG_PRIMARY_IMMUNODEFICIENCY	2.3 392 768 1	0.0198 64398	ICOS/IL7R/CD3E/JAK3/LCK/CIITA/IL2RG/PTPRC/AIRE/ZAP70/CD4/CD40LG/RAG1/TNFRSF13B/CD3D/CD40/TAP1/CD8A
REACTOME_INTERLEUKIN_2_FAMILY_SIGNALING	2.3 374 439 88	0.0198 64398	CSF2/IL2RA/IL21R/IL2RB/CSF2RB/IL9R/SHC1/JAK3/LCK/IL2RG/IL15RA/PIK3CD/STAT5A/SYK/IL15/INPP5D/STAT3/PTPN6/INPPL1/JAK2/HAVCR2
WP_CHEMOKINE_SIGNALING_PATHWAY	2.3 353 708 54	0.0223 5188	CCL11/CCL20/CXCL13/XCR1/CXCL5/CCR8/CCL7/GNGT1/CCR2/CCR4/CXCR3/PPBP/CXCL3/ITK/CCL22/SHC1/JAK3/CXCR5/CCR7/CCR6/CXCL9/CCR1/PIK3CG/CCR3/ADCY7/CXCR2/DOCK2/CXCR6/CCL26/PIK3CD/CXCL12/PIK3R5/RAC2/CCL5/VAV1/CCL24/PLCB2/WAS/HCK/VAV2/NCF1/NFKB1/CXCL10/ADCY3/STAT3/STAT2/PRKCD/LYN/PXN/GRK5/NFKBIA/ADCY4/XCL1/PF4/ROCK1/CXCL16/ROCK2/FOXO3/ADCY6/PLCB3/FGR/JAK2/ADCY9
WP_MICROGLIA_PATHOGEN_PHAGOCYTOSIS_PATHWAY	2.3 287 828 39	0.0198 64398	TREM1/ITGAM/CYBB/PIK3R6/PIK3CG/ARPC1B/ITGB2/PIK3CD/NCF2/NCKAP1L/SIGLEC7/RAC2/VAV1/SYK/HCK/PLCG2/VAV2/NCF1/C1QC/C1QA/C1QB/LYN/FCER1G/PTPN6
REACTOME_SIGNALING_BY_PDGF	2.3 277 003 3	0.0198 64398	COL6A5/COL6A3/THBS1/COL5A1/COL6A2/COL3A1/COL6A1/GRB7/COL5A2/COL4A1/COL4A2/THBS3/FURIN/SAT6/COL5A3/STAT5A/PTPN12/PDGFRB/THBS2/STAT3
WP_TNF_RELATED_WEAK_INDUCER_OF_APOPTOSIS_TWEAK_SIGNALING_PATHWAY	2.3 105 723 53	0.0198 64398	IL6/CCL2/BIRC3/RELB/NFKB2/MMP9/CCL5/TRAF5/MAP3K14/TRIM63/TRAF1/NFKB1/CASP8/CASP7/RIPK1/JUN/NFKBIA/TRAF3
PID_FRA_PATHWAY	2.3 100 805 85	0.0198 64398	COL1A2/MMP1/IL6/LIF/CXCL8/LAMA3/THBD/CCL2/FOSL2/PLAUR/ITGB4/FOSL1/JUNB/MMP9/PLAU/NFATC2/HMOX1/JUN/NOS3/SP1/NFATC1/NFATC3/EP300
BIOCARTA_IL2RB_PATHWAY	2.3 080 814 16	0.0198 64398	IL2RA/IKZF3/FASLG/IL2RB/SHC1/SOCS3/JAK3/IL2RG/PIK3CG/FOS/STAT5A/SYK/SOCS1/IRS1/CFLAR/PTPN6



BIOCARTA_INFLAM_PATHWAY	2.3 078 867 67	0.0198 64398	CSF2/CSF3/IL6/CXCL8/IL11/TGFB2/IFNG/IL10/CD4/TGFB1/CSF1/IL15/IL1A/TGFB3/HLA-DRB1
WP_HEPATITIS_C_AND_HEPATOCELLULAR_CAR CINOMA	2.3 070 922 31	0.0198 64398	PTGS2/MMP1/IL6/CXCR1/CXCL8/NOS2/FASLG/BIRC3/MYOF/CD44/COL4A2/IL6R/LEF1/TGFB1/PODXL/VEGF A/VAV2/CDKN1A/NFKB1/STAT3/CASP7/JUN/HIF1A/SMAD3
REACTOME_SIGNALING_BY_MET	2.3 053 576 8	0.0198 64398	COL1A1/COL1A2/TNS4/COL5A1/COL3A1/LAMB1/LAMA3/ITGA2/MET/COL5A2/LAMA2/FN1/SHC1/LAMC1/ITGA 3/COL27A1/LAMC2/SPINT1/COL24A1/LAMA4/LAMA1/COL5A3/ITGB1/LAMB2/LAMA5
PID_P53_DOWNSTREAM_PATHWAY	2.3 041 256 79	0.0198 92136	VDR/LIF/SERPINE1/DKK1/FOXA1/MET/HIC1/BDKRB2/SNAI2/TNFRSF10C/EPHA2/STEAP3/PRDM1/TNFRSF10 A/IGFBP3/TNFRSF10D/COL18A1/NDRG1/PML/DUSP1/CAV1/NLRC4/BCL2A1/TNFRSF10B/GDF15/RNF144B/C DKN1A/ARID3A/DUSP5/MCL1/TRRAP/SFN/JUN/PLK3/SERPINB5/PERP/CASP1/SH2D1A/AIFM2/CASP10/SP1/T AP1/CTSD/GADD45A/PIDD1/HGF/BCL6/SPP1/EP300/PMAIP1/IRF5/VCAN/ATF3/FAS/PMS2/TP63
PID_CD8_TCR_PATHWAY	2.3 028 771 35	0.0198 64398	CD3E/GRAP2/SHC1/LCK/CD3G/PTPRC/PRF1/MAP3K8/CD80/RASSF5/CD28/ZAP70/LCP2/VAV1/MAP3K14/CD 3D/CD247/CARD11/MALT1/PTPN6/CD8A/RASGRP1/PLCG1/CD86/TRAF6/CBL/ORAI1/LAT/BCL10/IKBKB/STIM 1/AKT1/RASGRP2
PID_TOLL_ENDOGENOUS_PATHWAY	2.3 028 638 26	0.0198 64398	BGN/TLR6/TLR2/S100A8/CD14/S100A9/TLR1/TICAM1/IRAK2/MYD88/LY96/SFTPA1/TLR3/VCAN/TLR4/TIRAP/I RAK1
WP_IL1_AND_MEGAKARYOCYTES_IN_OBESITY	2.3 018 341 22	0.0198 64398	IL1R1/ICAM1/CCL2/TIMP1/CCR3/IFNG/TLR2/MMP9/S100A9/TLR1/IL1B/HBEGF/NLRP3/NFKB1/MYD88/F2R
REACTOME_TNFS_BIND_THEIR_PHYSIOLOGICAL _RECEPTORS	2.2 920 143 77	0.0198 64398	CD70/FASLG/TNFRSF18/TNFSF11/TNFSF14/TNFRSF9/TNFSF4/TNFSF15/TNFRSF1B/CD27/TNFRSF17/TNFS F8/EDA2R/TNFRSF14/TNFRSF8/TNFRSF13B/TNFSF13/TNFRSF1A/TNFRSF4/LTA/TNFRSF11B/TNFSF13B/ED A

WP_COMPLEMENT_AND_COAGULATION_CASCADES	2.2 910 880 41	0.0198 64398	CR1/BDKRB1/SERPINE1/CFB/C1R/THBD/CR2/SERPINA1/CFI/C5AR1/PLAUR/C1S/CFH/C3/SERPING1/PROS1/PLAU/C3AR1/F3/C7/LMAN1/C1QC/C1QA/C1QB/CFD/C2/VWF/F2R
PID_CD8_TCR_DOWNSTREAM_PATHWAY	2.2 888 110 43	0.0198 64398	IL2RA/FASLG/IL2RB/EOMES/TNFRSF18/CD3E/TNFRSF9/CD3G/IL2RG/EGR1/FOSL1/PRF1/IFNG/PTPN7/JUNB/FOS/NFATC2/GZMB/CD3D/CD247/JUN/NFATC1/CD8A/IFNA5/IFNA14/NFATC3/TNFRSF4/IFNAR1
WP_HYPOTHESIZED_PATHWAYS_IN_PATHOGENESIS_OF_CARDIOVASCULAR_DISEASE	2.2 866 334 98	0.0198 64398	POSTN/SERPINE1/FBN1/LTBP2/LTBP1/SHC1/RUNX2/FBN2/TGFBR2/FLNA/CCN2/ENG/AGTR1/SMAD3/ANGPT2
WP_HOSTPATHOGEN_INTERACTION_OF_HUMAN_CORONA_VIRUSES_INTERFERON_INDUCTION	2.2 733 925 99	0.0198 64398	OAS3/FOS/TLR7/TICAM1/IKKE/NFKB1/STAT2/MYD88/RIPK1/JUN/OAS2/NFKBIA/TRAF3/DDX58/IFIH1/TYK2/IFNAR1/OAS1/MAVS/TRAF6/MAPK14/IRF9/STAT1/IKKBK
WP_ONCOSTATIN_M_SIGNALING_PATHWAY	2.2 708 526 58	0.0198 64398	MMP1/SERPINE1/CCN1/MMP13/CCL2/SHC1/SOCS3/JAK3/OSMR/LDLR/EGR1/CEBPB/JUNB/OSM/FOS/MMP3/VEGFA/IRS1/NFKB1/STAT3/CASP7/PRKCD/PXN/HIF1A/NFKBIA/TYK2/JAK2/PIAS3/MAPK14/TP53/TIMP3/PRKCH/STAT1/AKT1/PTK2B/IL6ST/CDK2
WP_ADIPOGENESIS	2.2 700 731 58	0.0198 64398	DLK1/IL6/LEP/LIF/RETN/SERPINE1/SFRP4/FZD1/PCK1/PRLR/NAMPT/KLF5/SOCS3/PTGIS/GATA3/EGR2/PLIN2/CYP26A1/CEBPB/WWTR1/STAT6/CEBPD/OSM/BMP1/TGFB1/TWIST1/GADD45B/STAT5A/EBF1/SOCS1/EPA/S1/AGPAT2/IRS1/LMNA/NRIP1/KLF6/LPIN3/CDKN1A/PCK2/IRS2/STAT3/STAT2/CFD/FOXO1/KLF7/SP1/RORA/HIF1A/FOXC2/PPARD/GADD45A/SMAD3/LPL/LPIN2/SREBF1/FAS/PNPLA3/MEF2A/UCP1/CELF1
PID_HIF1_TFPATHWAY	2.2 681 208 02	0.0198 64398	LEP/SERPINE1/NOS2/CP/TF3/BHLHE40/CA9/PLIN2/FURIN/ADM/ITGB2/NDRG1/CXCL12/FOS/ENG/VEGFA/HK2/HDAC7/NT5E/HMOX1/MCL1/CITED2/ARNT/PFKFB3/JUN/SP1/RORA/IGFBP1/HIF1A/SLC2A1/SMAD3/EP300/TERT/PFKL/CXCR4/BHLHE41
PID_IL2_1PATHWAY	2.2 637 508 32	0.0198 64398	IL2RA/IKZF3/IL2RB/CISH/SHC1/SOCS3/JAK3/LCK/IL2RG/DOK2/IFNG/FOS/STAT5A/SYK/SOCS1/IRS1/IRS2/STAT3/JUN

WP_RANKLRANK_RECEPTOR_ACTIVATOR_OF_NFKB_LIGAND_SIGNALING_PATHWAY	2.2 607 793 89	0.0198 64398	ICAM1/TNFSF11/TNFRSF11A/FHL2/RELB/VCAM1/NFKB2/FOS/CALCR/TRAF5/SYK/CTSK/TRAF1/NFKB1/PAPSS2/ACP5/SPI1/JUN/LYN/NFKBIA/TRAF3/NFATC1/PLCG1/TRAF6/MAPK14/SQSTM1/CBL/TNFRSF11B/STAT1/IKBKB
REACTOME_CROSSLINKING_OF_COLLAGEN_FIBRILS	2.2 562 625 01	0.0198 64398	COL1A1/COL1A2/PCOLCE/LOX/LOXL4/LOXL1/PXDN/LOXL2/COL4A1/COL4A2/BMP1/LOXL3
SA_MMP_CYTOKINE_CONNECTION	2.2 537 381 42	0.0198 64398	TNFRSF1B/CD44/TGFB2/FCGR3A/IL6R/IL1B/TNFSF8/TGFB1/SELL/CSF1/SPN/TNFRSF8/ACE/TNFRSF1A
PID_TCR_CALCIIUM_PATHWAY	2.2 474 683 29	0.0198 64398	CSF2/PTGS2/IL2RA/FASLG/FOSL1/RCAN1/IFNG/JUNB/FOS/CD40LG/NFATC2/JUN/NFATC1/NFATC3
REACTOME_POTENTIAL_THERAPEUTICS_FOR_SARS	2.2 451 254 66	0.0198 64398	IL1R1/ITGA4/JAK3/FURIN/IL6R/TLR9/IL1RAP/TLR7/ITGB1/VEGFA/PDCD1/RIPK1/ATP1A1/CYSLTR1/ROCK1/TYK2/ROCK2/JAK2/IMPDH1/BRD4
PID_SYNDECAN_4_PATHWAY	2.2 425 737 11	0.0198 64398	THBS1/ADAM12/LAMA3/FN1/ACTN1/TNC/FZD7/ITGA5/FGFR1/LAMA1/MMP9/CXCL12/CCL5/ITGB1/TNFRSF13B/PRKCD
BIOCARTA_IL1R_PATHWAY	2.2 402 559 29	0.0198 64398	IL6/IL1R1/IL1RN/TGFB2/IL1B/IL1RAP/IRAK3/TGFB1/IL1A/IRAK2/MAP3K14/TGFB3/NFKB1/MYD88/JUN/NFKBIA/MAP2K3/TRAF6/MAPK14/IRAK1/IFNB1/IKBKB
WP_PLATELETMEDIATED_INTERACTIONS_WITH_VASCULAR_AND_CIRCULATING_CELLS	2.2 390 773 39	0.0198 64398	ICAM1/SELE/CCL2/SELP/TGFB2/TLR2/VCAM1/IL1B/CCL5/TLR7/TGFB1/CD40LG/TGFB3/CD40/PF4/TLR4/SELP

BIOCARTA_TOB1_PATHWAY	2.2 338 977 87	0.0198 64398	IL2RA/CD3E/CD3G/TGFBR2/TGFB2/IFNG/CD28/TGFB1/TGFB3/CD3D/CD247/SMAD3
PID_IL2_STAT5_PATHWAY	2.2 211 185 91	0.0198 64398	IL2RA/FASLG/IL2RB/SHC1/JAK3/LCK/IL2RG/FOXP3/PRF1/STAT5A/SP1/CDK6/LTA
WP_VITAMIN_B12_METABOLISM	2.2 199 989 73	0.0198 64398	IL6/SAA4/SERPINE1/ICAM1/SOD2/SAA2/CCL2/APOB/LDLR/SAA1/IFNG/TCN1/ABCA1/NFKB2/IL1B/CCL5/SERP INA3/NFKB1/MAT1A/MTR/CRP/CUBN
WP_NUCLEOTIDEBINDING_OLIGOMERIZATION_D OMAIN_NOD_PATHWAY	2.2 164 967 75	0.0198 64398	MEFV/NLRP12/NOD2/PRDM1/NAIP/NLRP7/IL1B/CASP5/NLRC4/NLRP3/CARD6/NLRP2/CASP8/CASP7/CARD9/ CASP1/NLRP10/NFKBIA/AIM2/CARD8/ACAP1/ERBIN
PID_IL12_STAT4_PATHWAY	2.2 056 991 53	0.0198 64398	IL2RA/IL18R1/CD3E/CD3G/PRF1/IFNG/CD80/IL18RAP/CD28/FOS/CD4/TGFB1/IRF1/CD3D/STAT3/CD247/JUN
BIOCARTA_LAIR_PATHWAY	2.2 056 328 36	0.0198 64398	IL6/CXCL8/ICAM1/SELP/ITGA4/C3/VCAM1/ITGB2/ITGAL/ITGB1/C5/C7/IL1A
WP_CELLS_AND_MOLECULES_INVOLVED_IN_LO CAL_ACUTE_INFLAMMATORY_RESPONSE	2.2 056 328 36	0.0198 64398	IL6/CXCL8/ICAM1/SELP/ITGA4/C3/VCAM1/ITGB2/ITGAL/ITGB1/C5/C7/IL1A
PID_TCPTP_PATHWAY	2.1 997 991 55	0.0198 64398	MET/SHC1/JAK3/PIK3CD/STAT6/CSF1R/EGF/ITGB1/STAT5A/PDGFRB/CSF1/VEGFA/LMAN1/ITGA1/STAT3/HG F/KDR/PTPN2/INSR/STAT1/PDGFB/PTPN1/CREBBP/ATR/KPNB1/PIK3CA/PIAS1/SOS1/PIK3CB/GRB2/STAT5B

WP_LTF_DANGER_SIGNAL_RESPONSE_PATHWAY	2.1 993 668 65	0.0198 64398	IL6/CXCL8/TREM1/LTF/TLR2/CD14/IL1B/IL1A/NFKB1/MYD88/TRAF6/TLR4/IRAK1/IFNB1
WP_PATHOGENESIS_OF_SARSCOV2_MEDIATED_BY_NSP9NSP10_COMPLEX	2.1 962 937 65	0.0198 64398	LBP/IL6/CXCL8/CD3E/LCK/CD3G/CD2/ZAP70/CD4/MMP25/CD247/HLA-DRB1/CD8A/CRP
WP_COMPLEMENT_ACTIVATION	2.1 951 575 61	0.0198 64398	CFB/C1R/C1S/C3/C5/C7/C1QC/C1QA/C1QB/CFD/C2/C8A/CFP/CD55/C4A/C4B/C8G/C6
WP_MIR5093P_ALTERATION_OF_YAP1ECM_AXIS	2.1 891 255 44	0.0198 64398	COL1A1/COL5A1/COL3A1/FN1/SNAI2/YAP1/TEAD3/TWIST1/THBS2/EDNRA/TEAD1/GPC6/TEAD4
REACTOME_SCAVENGING_BY_CLASS_A_RECEPTORS	2.1 870 003 38	0.0198 64398	COL1A1/COL1A2/COL3A1/MARCO/COLEC12/APOB/COL4A1/COL4A2
WP_VITAMIN_D_RECEPTOR_PATHWAY	2.1 868 424 75	0.0234 375	ORM1/VDR/BDKRB1/COL13A1/CEACAM1/PTGER4/TNFAIP3/TNFSF11/THBD/STEAP4/TNFSF4/TREM1/GXYLT2/PRDM1/ITGAM/EPHB4/CTLA4/CDKN2B/IGFBP3/SALL4/G0S2/ALOX5/CA9/SLC34A2/TGFB2/S100A8/LRRC25/SLC37A2/ALPG/IL1RL1/JUNB/HLA-DQA1/CD14/S100A9/SULT1C2/CAMP/MX2/EFNA5/IRF4/CRACR2A/CASP5/TGFB1/HLA-DQA2/CASP14/CYP7A1/CRACR2B/NFATC2/KRT34/ABCD1/NRIP1/CDKN1A/ADGRE5/CST6/ASAP2/CD40/FOXO1/STS/KLF4/SLC8A1/HLA-DRB1/IGFBP1/KL/CYP2S1/IL25/HIF1A/PPARD/GADD45A/MYO9B/CLDN2/MXD1/BCL6/KRT71/S100A4/SPP1/CYP24A1/RASGRP1/IGFBP5
BIOCARTA_COMP_PATHWAY	2.1 863 954 5	0.0198 64398	CFB/C1R/C1S/C3/C5/C7/C1QC/C1QA/C1QB/CFD/C2/C8A/C4A/C4B/C6

BIOCARTA_GRANULOCYTES_PATHWAY	2.1 827 492 58	0.0198 64398	CSF3/CXCL8/ICAM1/SELP/ITGAM/IFNG/ITGB2/ITGAL/SELL/C5/IL1A/PECAM1
WP_ALPHA_6_BETA_4_SIGNALING_PATHWAY	2.1 827 310 03	0.0198 64398	LAMB1/LAMA3/LAMA2/SHC1/LAMC1/ITGB4/LAMC2/LAMA1/LAMB2/LAMA5/IRS1/IRS2/PRKCD
WP_TLR4_SIGNALING_AND_TOLERANCE	2.1 824 471 69	0.0198 64398	IL6/CXCL8/IRAK3/TICAM1/IKBKE/INPP5D/NFKB1/MYD88/RIPK1/NFKBIA/TRAF3/IRF7/TRAF6/TLR4/TIRAP/IRAK1/IFNB1/IKBKB
REACTOME_HYALURONAN_METABOLISM	2.1 805 850 1	0.0198 64398	LYVE1/HAS3/CEMIP/HAS1/CD44/GUSB/STAB2/SLC9A1/HEXB
PID_PTP1B_PATHWAY	2.1 771 994 52	0.0198 64398	LEP/PRLR/SHC1/SOCS3/LCK/FCGR2A/ITGB3/CSF1R/EGF/CAV1/BLK/STAT5A/PDGFRB/CSF1/HCK/IRS1/CDH2/STAT3/LYN/SPRY2/TYK2/FGR/JAK2/ITGA2B/INSR/LAT/PDGFB/PTPN1/AKT1/NOX4
WP_TCELL_ANTIGEN_RECEPTOR_TCR_PATHWAY_DURING_STAPHYLOCOCCUS_AUREUS_INFECTION	2.1 766 512 21	0.0198 64398	CSF2/ICOS/ITK/GRAP2/LCK/CTLA4/PTPRC/IFNG/MAP3K8/IL10/CD28/ZAP70/LCP2/FOS/CD4/CD40LG/NFATC2/MAP3K14/PDCD1/CD3D/NFKB1/JUN/CARD11/MALT1/PTPN6/NFKBIA/CD8A
WP_SIGNAL_TRANSDUCTION_THROUGH_IL1R	2.1 743 157 81	0.0198 64398	IL6/IL1R1/IL1RN/TGFB2/IL1B/IL1RAP/IRAK3/TGFB1/IL1A/IRAK2/MAP3K14/TGFB3/NFKB1/MYD88/JUN/NFKBIA/MAP2K3/TRAF6/MAPK14/IRAK1/IFNB1/IKBKB
WP_OVERVIEW_OF_NANOPARTICLE_EFFECTS	2.1 734 844 46	0.0198 64398	PTGS2/IL6/CXCL8/LAMA3/FN1/PTGS1/COL4A1/PIK3CD/ITGAD/HMOX1

PID_INTEGRIN_CS_PATHWAY	2.1 714 315 03	0.0198 64398	ITGA2/ITGA11/ITGA4/ITGA3/ITGB4/ITGAM/ITGA5/ITGB3/ITGA10/ITGB2/ITGAD/ITGB7/ITGAL/ITGB1/ITGB5/ITGA1/ITGA7/ITGAX/ITGA9
KEGG_CELL_ADHESION_MOLECULES_CAMS	2.1 695 645 85	0.0198 64398	ICOS/ICAM1/SDC1/CLDN23/SIGLEC1/CLDN4/SELE/SELP/ITGA4/ITGAM/CTLA4/CD274/CLDN19/CD2/CD226/PTPRC/PDCD1LG2/VCAM1/CLDN1/CD80/CD6/ITGB2/HLA-DQA1/CD28/HLA-DOA/CD4/CLDN3/ITGB7/ITGAL/ICAM3/HLA-DQA2/HLA-DQB1/ITGB1/SELL/NECTIN2/CD40LG/CLDN18/PTPRF/SPN/PVR/PDCD1/HLA-DPA1/CDH2/HLA-C/CD40/HLA-B/NRCAM/NEO1/GLG1/CD276/CLDN7/F11R/CDH4/PECAM1/HLA-DRB1/CDH5/HLA-F/CLDN14/CLDN2/HLA-DPB1/CNTNAP1/CD8A/ITGA9/SDC2/HLA-E/CADM1/CD86/VCAN/HLA-DMA/SDC4
WP_TYPE_I_INTERFERON_INDUCION_AND_SIGNALING_DURING_SARSCOV2_INFECTIO	2.1 681 011 77	0.0198 64398	TREML4/OAS3/FOS/TLR7/IKBKE/NFKB1/STAT2/MYD88/JUN/OAS2/NFKBIA/TRAF3/TYK2/IFNAR1/OAS1/TRAF6/MAPK14/IRF9/STAT1/IKKBK
BIOCARTA_TH1TH2_PATHWAY	2.1 664 392 43	0.0198 64398	IL2RA/IL18R1/IL4R/IFNG/CD28/NR1I2/IL12B/CD40LG/CD40/IL12RB1/HLA-DRB1
WP_NEOVASCULARISATION_PROCESSES	2.1 648 159 61	0.0198 64398	EPHB4/NOTCH3/TGFB2/RELB/NFKB2/REL/MMP9/CXCL12/TGFB1/FLT4/TGFB3/NFKB1/HIF1A/ACVRL1/SMAD1/SMAD3/ANGPT1/KDR/DLL4/KITLG/JAG1/CXCR4
WP_HEMATOPOIETIC_STEM_CELL_DIFFERENTIATION	2.1 646 465 79	0.0198 64398	CSF2/FOSB/CSF3/IL6/TNXP/RUNX1/CIITA/ITGB3/IKZF1/MIR221/PIM1/MUC1/NCKAP1L/FOS/IL1B/VAV1/LEF1/STAT5A/CSF1/RHOH/NFATC2/IL1A/TRAF3IP3/SPI1/FLI1
NABA_SECRETED_FACTORS	2.1 629 138 98	0.0365 9437	CCL13/CCL11/EREG/CSF2/CCL20/CXCL13/CCL18/CXCL5/CCL7/IL20/CSF3/IL6/LEP/SFRP2/LIF/IL36B/PPBP/NF3/CXCL8/CXCL3/IL36RN/CCL23/CXCL1/FST/SFRP4/IL11/CHRDL2/FASLG/INHBA/CBLN4/IL24/IL1RN/IL19/TNFSF11/TNFSF14/CCL2/CXCL2/CCL22/INSL3/TNFSF4/TNFSF15/WNT3A/CLCF1/AREG/CXCL6/FGF19/ANGPTL4/CXCL9/LTB/IL22/IL36G/PF4V1/FGF10/TGFB2/EGFL6/INS-IGF2/IFNG/S100A8/IL10/CCL26/S100A9/VEGFC/CXCL12/INHBE/OSM/CCL14/IL37/IL1B/CCL5/TCHH/IL12B/GDF5/ARTN/TNFSF8/TGFB1/HBEGF/EGF/FSTL1/CCL24/CBLN3/CSF1/DHH/CCL8/VEGFA/S100A5/GDF15/IL15/XCL2/IL1A/S100P/IFNE/SFRP5/TGFB3/NRG1/MEGF8/TNFSF13/CXCL10/INHBB/CRNN/S100A11/FGF11/TNFSF10/F

			STL3/IL16/FGF5/PDGFD/BMP5/IL25/S100A12/XCL1/PF4/ANGPT1/HGF/ANGPT2/BTC/ANGPTL6/S100A4/IFNA5/IFNA14
PID_IL27_PATHWAY	2.1 626 725 29	0.0198 64398	IL6/GATA3/IFNG/IL1B/IL12B/TGFB1/STAT5A/IL27RA/STAT3/STAT2/IL12RB1/IL27/TYK2/JAK2/STAT1/EBI3/IL6S T/IL2
PID_GMCSF_PATHWAY	2.1 622 556 68	0.0198 64398	CSF2/CSF2RB/CISH/CCL2/SHC1/PIM1/OSM/FOS/STAT5A/SYK/STAT3/LYN/JAK2/IRF8/STAT1/PRKACA/IKBKB
WP_REGULATION_OF_WNTBCATENIN_SIGNALING_BY_SMALL_MOLECULE_COMPOUNDS	2.1 599 230 75	0.0198 64398	SFRP4/FZD1/FZD7/LRP1/MBOAT1/FZD8/LEF1
KEGG_LEUKOCYTE_TRANSENDOTHELIAL_MIGRATION	2.1 576 040 43	0.0198 64398	MYL10/ITK/ICAM1/CLDN23/CLDN4/ITGA4/ACTN1/ITGAM/TXK/CLDN19/CYBB/PIK3CG/MAPK13/VCAM1/CLDN1 /RASSF5/ITGB2/PIK3CD/MMP9/VCL/NCF2/CXCL12/PIK3R5/RAC2/VAV1/CLDN3/ITGAL/MYL7/ITGB1/MSN/RHO H/CLDN18/MYL9/SIPA1/PLCG2/VAV2/NCF1/ACTN4/CLDN7/PXN/F11R/PECAM1/VASP/CDH5/ROCK1/CLDN14/ CLDN2/NCF4/ROCK2/PLCG1/CTNND1
BIOCARTA_NO2IL12_PATHWAY	2.1 524 894 42	0.0198 64398	CXCR3/NOS2/CD3E/CCR5/CD3G/CD2/IFNG/CD4/CD3D/CD247/IL12RB1/TYK2/JAK2
WP_TGFBETA_RECEPTOR_SIGNALLING_IN_SKELETAL_DYSPLASIAS	2.1 505 977 53	0.0198 64398	THBS1/LIF/SERPINE1/FST/FBN1/INHBA/LTBP1/RUNX2/TGFBR2/LTBP3/IFNG/FOS/LEF1/TGFB1/EGF/ENG/NF KB1/STAT3/RUNX3/JUN/SKI/SMAD1/SMAD3/SPP1/EP300/FOXH1/TFE3/WNT1/LEFTY2/STAT1/ADAMTSL2
BIOCARTA_IL2_PATHWAY	2.1 491 882 7	0.0198 64398	IL2RA/IL2RB/SHC1/JAK3/LCK/IL2RG/FOS/STAT5A/SYK/JUN
REACTOME_INTERFERON_SIGNALING	2.1 478	0.0239 69653	ICAM1/GBP5/SOCS3/CIITA/EGR1/CD44/XAF1/GBP4/OAS3/IFNG/IFI30/VCAM1/FLNA/HLA- DQA1/MX2/TRIM38/PML/IRF4/HLA-DQB2/GBP3/HLA-DQA2/HLA-DQB1/TRIM22/PTAFR/SOCS1/HLA- H/MX1/IFITM2/GBP2/NUP210/IRF1/HLA-DPA1/HLA-C/GBP6/STAT2/POM121/HLA-



	460 35		B/UBA7/PRKCD/POM121C/TRIM34/TRIM5/SAMHD1/IFITM1/OAS2/IFITM3/GBP1/HLA-DRB1/PTPN6/IRF6/TRIM10/DDX58/HLA-F/OASL/HLA-DPB1/IFNA5/IFNA14/TYK2/TRIM14/SP100/TRIM6/PLCG1/HLA-E/PTPN2/EIF4G1/IRF7/JAK2/IRF8/IFNAR1/OAS1/NUP98/IRF5/TRIM25/FCGR1A/TRIM45/TPR/RSAD2/RNASEL/HERC5/MID1/CAMK2D/ADAR/IRF9/HLA-G/IRF2/STAT1/USP18/IFNB1/NUP188/NUP205/TRIM26/PTPN1/BST2/TRIM21/HLA-DRA/ISG20/NEDD4/NUP62/NUP153/IFNA17
PID_GLYPICAN_1PATHWAY	2.1 471 482 1	0.0198 64398	PLA2G2A/LCK/TGFB2/TGFB2/FGFR1/LAMA1/TGFB1/BLK/VEGFA/HCK/TGFB3/NGR1/SLIT2/LYN/GPC1/FLT1
BIOCARTA_MONOCYTE_PATHWAY	2.1 445 904 52	0.0198 64398	ICAM1/SELE/SELP/ITGA4/ITGAM/CD44/ITGB2/ITGAL/ITGB1/SELL
REACTOME_LEISHMANIA_INFECTIO	2.1 403 502 44	0.0331 92879	IGHV4-59/IGHG2/IGHG4/IGHV1-2/GNGT1/IGKV5-2/IL6/IGKV1-39/IGHV1-46/IGKV2-30/IGKV2D-30/PTGER2/IGHV2-70/MC3R/GCG/GIP/IGKV3-15/CD163/IGLV3-25/IGHV4-34/IGKV1-16/ITPR3/CTSG/PTGER4/IGHG1/MEFV/IGLV3-21/IGLV1-47/IGLV2-23/IGLV1-44/IGLV3-1/INSL3/GPR39/GPR84/IGHV3-33/IGLV2-14/HRH2/FZD7/IGHV3-11/PTGIR/CD3G/FCGR2A/IGKV1D-16/IGHV3-30/IGLV3-19/IGHV2-5/IGLV1-40/MYH9/C3/IGLC2/MYO1C/IGKV1D-12/ARPC1B/ADCY7/GPR15/IGKV1-5/IGKV2D-28/IL10/IGHV3-23/FURIN/FCGR3A/ADM/IGKV3-11/IGKV1D-39/IGLV2-8/NFKB2/NCKAP1L/IGLV2-11/RHBDF2/IGLV7-43/IGKV4-1/IL1B/VAV1/CALCR/IGHV1-69/IGLV1-51/C3AR1/IGHV4-39/GPR25/IGLV6-57/SYK/GPBAR1/NLRP3/WIPF3/WAS/HCK/WIPF1/HTR7/PLCG2/IL1A/VAV2/NT5E/IGKV3-20/NFKB1/ADM2/ADCY3/CALCA/IGHV3-7/GPR20/CD247/JUN/LYN/PSTPIP1/CASP1/IGKV1-17/IGHV3-48/IGHV3-53/DPEP2/ITPR2/IGKV1-12/MC1R/WASF2/MYO9B/ADCY4/ENTPD5/CYSLTR1
WP_SIMPLIFIED_DEPICTION_OF_MYD88_DISTINCT_INPUTOUTPUT_PATHWAY	2.1 398 754 89	0.0198 64398	TLR8/TLR6/TLR2/TLR5/TLR9/TLR1/TLR7/IL1A/NFKB1/MYD88/TIFA/JUN/TRAF6/TLR4/IRAK1
KEGG_T_CELL_RECEPTOR_SIGNALING_PATHWAY	2.1 392 903 64	0.0198 64398	CSF2/ICOS/CBLC/ITK/CD3E/GRAP2/TEC/LCK/CD3G/CTLA4/PTPRC/PIK3CG/MAPK13/IFNG/NFATC4/MAP3K8/IL10/PIK3CD/CD28/PIK3R5/ZAP70/LCP2/FOS/CD4/VAV1/CD40LG/NFATC2/VAV2/MAP3K14/PDCD1/CD3D/NFKB1/CD247/JUN/CARD11/MALT1/PTPN6/NFKBIA/NFATC1/CD8A/NFAT5/NFATC3/RASGRP1/PLCG1

PID_SHP2_PATHWAY	2.1 392 489 94	0.0198 64398	IL6/IL2RA/NTF3/IL2RB/SHC1/JAK3/LCK/IL2RG/NTRK1/IFNG/IL6R/EGF/PDGFRB/VEGFA/IRS1/NOS3/ANGPT1/SDC2/KDR/JAK2/BDNF/IGF1R/STAT1/PRKACA/PDGFB
BIOCARTA_IL12_PATHWAY	2.1 373 937 41	0.0198 64398	CXCR3/IL18R1/CD3E/CCR5/CD3G/IFNG/CD3D/CD247/JUN/IL12RB1/TYK2/ETV5/JAK2/MAPK14
KEGG_SMALL_CELL_LUNG_CANCER	2.1 320 936 42	0.0198 64398	PTGS2/LAMB1/LAMA3/NOS2/ITGA2/LAMA2/FN1/BIRC3/LAMC1/ITGA3/LAMC2/CDKN2B/COL4A1/COL4A2/PIK3CG/LAMA4/LAMA1/PIK3CD/PIK3R5/ITGB1/LAMB2/TRAF5/LAMA5/TRAF1/NFKB1/LAMC3/CDK6/NFKBIA/TRAF3/LAMB3/TRAF6/PIAS3/LAMB4/ITGA2B/TP53/RXRA/ITGAV/IKBKB/CCNE1/AKT1/CDK2/PTEN/ITGA6/PIK3CA/BCL2/COL4A6/PIAS1
ST_TUMOR_NECROSIS_FACTOR_PATHWAY	2.1 297 451 46	0.0198 64398	TNFAIP3/BIRC3/TNFRSF1B/NFKB2/NFKB1/CASP8/RIPK1/JUN/RALBP1/CFLAR/TNFRSF1A/NFKBIA/MAP3K3
REACTOME_INTERLEUKIN_6_FAMILY_SIGNALING	2.1 294 090 51	0.0198 64398	IL31RA/IL6/LIF/IL11/SOCS3/CLCF1/OSMR/IL6R/OSM/STAT3/TYK2/JAK2/CBL/CTF1/STAT1
PID_TAP63_PATHWAY	2.1 266 755 52	0.0198 64398	VDR/TFAP2C/ITGA3/ITGB4/IGFBP3/EGR2/PML/CLCA2/GDF15/CDKN1A/PRKCD/SERPINB5/PERP/SP1/GADD45A/EP300/DICER1/PMAIP1/FAS/JAG1/TP63/CDKN2A/GPX2/IKBKB/SHH/ABL1
BIOCARTA_CTLA4_PATHWAY	2.1 252 875 8	0.0198 64398	ICOS/ITK/CD3E/LCK/CD3G/CTLA4/CD80/CD28/CD3D/CD247/HLA-DRB1
REACTOME_SIGNALING_BY_SCF_KIT	2.1 249 666 56	0.0198 64398	GRB7/PTPRU/GRAP2/TEC/CMA1/LCK/GRB10/FES/MMP9/VAV1/STAT5A/SH2B3/SOCS1/STAT3/LYN/PTPN6/KITLG/JAK2

REACTOME_ANTI_INFLAMMATORY_RESPONSE_F AVOURING_LEISHMANIA_PARASITE_INFECTION	2.1 213 142 46	0.0253 15243	IGHV4-59/IGHG2/IGHG4/IGHV1-2/GNGT1/IGKV5-2/IL6/IGKV1-39/IGHV1-46/IGKV2-30/IGKV2D-30/PTGER2/IGHV2-70/MC3R/GCG/GIP/IGKV3-15/CD163/IGLV3-25/IGHV4-34/IGKV1-16/ITPR3/PTGER4/IGHG1/IGLV3-21/IGLV1-47/IGLV2-23/IGLV1-44/IGLV3-1/INSL3/GPR39/GPR84/IGHV3-33/IGLV2-14/HRH2/IGHV3-11/PTGIR/CD3G/FCGR2A/IGKV1D-16/IGHV3-30/IGLV3-19/IGHV2-5/IGLV1-40/MYH9/IGLC2/IGKV1D-12/ADCY7/GPR15/IGKV1-5/IGKV2D-28/IL10/IGHV3-23/FURIN/FCGR3A/ADM/IGKV3-11/IGKV1D-39/IGLV2-8/IGLV2-11/RHBDF2/IGLV7-43/IGKV4-1/CALCR/IGHV1-69/IGLV1-51/IGHV4-39/GPR25/IGLV6-57/SYK/GPBAR1/HCK/HTR7/PLCG2/IGKV3-20/ADM2/ADCY3/CALCA/IGHV3-7/GPR20/CD247/LYN/IGKV1-17/IGHV3-48/IGHV3-53/DPEP2/ITPR2/IGKV1-12/MC1R
BIOCARTA_THELPER_PATHWAY	2.1 179 912 36	0.0198 64398	ICAM1/CD3E/CD3G/CD2/PTPRC/ITGB2/CD28/CD4/ITGAL/CD3D/CD247
REACTOME_RUNX1_AND_FOXP3_CONTROL_THE _DEVELOPMENT_OF_REGULATORY_T_LYMPHOC YTES_TREGS_	2.1 149 506 98	0.0198 64398	CR1/IL2RA/TNFRSF18/RUNX1/CTLA4/FOXP3/IFNG/NFATC2
ST_INTERLEUKIN_4_PATHWAY	2.1 131 520 05	0.0198 64398	PI3/CISH/SHC1/JAK3/IL2RG/IL4R/STAT6/INPP5D/IL13RA1
SIG_PIP3_SIGNALING_IN_B_LYMPHOCYTES	2.1 088 945 92	0.0198 64398	ITPR3/TEC/PTPRC/PIK3R5/VAV1/DAPP1/SYK/PLCG2/RPS6KA3/LYN/ITPR2/FOXO3/CYTH3/CDKN2A/BTK/AKT1/RPS6KA1/PTEN/FLOT2/PIK3CA/PREX1/RPS6KA2/PITX2/CD19/RPS6KB1/AKT2/PDPK1
REACTOME_INTERLEUKIN_3_INTERLEUKIN_5_AN D_GM_CSF_SIGNALING	2.1 087 450 65	0.0198 64398	CSF2/IL2RA/IL2RB/CSF2RB/SHC1/JAK3/TEC/IL2RG/PIK3CD/VAV1/STAT5A/SYK/HCK/INPP5D/LYN/PTPN6
WP_SELENIUM_MICRONUTRIENT_NETWORK	2.0 991 313 69	0.0198 64398	XDH/PTGS2/IL6/SAA4/SERPINE1/ICAM1/SOD2/SAA2/CCL2/APOB/LDLR/PTGS1/ALOX5/SAA1/IFNG/ABCA1/KYNU/NFKB2/IL1B/SELENON/ALOX5AP/SERPINA3/FGG/NFKB1/ALOX15B/KMO/GGT2/GGTLC2

PID_INTEGRIN4_PATHWAY	2.0 962 920 84	0.0198 64398	LAMB1/LAMA3/LAMA2/LAMC1/ITGB4/LAMC2/LAMA1/LAMB2/LAMA5
WP_B_CELL_RECEPTOR_SIGNALING_PATHWAY	2.0 948 045 09	0.0198 64398	CR2/SHC1/TEC/LCK/PTPRC/PIK3CG/REL/PIK3AP1/RAC2/IRF4/VAV1/DAPP1/BLK/SYK/HCLS1/NFATC2/MAP4 K1/INPP5D/PLCG2/VAV2/NFKB1/FOXO1/MAPK4/PRKCD/JUN/LYN/CARD11/MALT1/PTPN6/NFKBIA/KLF11/PT PN18/BCL6/NFATC3/PLCG1/GTF2I/SH3BP2/MAPK14/BTK/CBL/BCL10/IKBKB/MEF2D/AKT1/BRAF/RPS6KA1/L AT2/CD79A/PIP5K1A/MAP3K7/BLNK/SOS1/ETS1
REACTOME_INTERLEUKIN_2_SIGNALING	2.0 934 741 72	0.0198 64398	IL2RA/IL2RB/SHC1/JAK3/LCK/IL2RG/STAT5A/SYK
BIOCARTA_DC_PATHWAY	2.0 899 331 97	0.0198 64398	CSF2/ANPEP/CD5/CD2/CD7/IFNG/IL10/TLR7/CD40/CD33/ITGAX
REACTOME_GPVI_MEDIATED_ACTIVATION_CASCADE	2.0 898 577 4	0.0198 64398	COL1A1/COL1A2/LCK/PIK3R6/PIK3CG/PIK3R5/LCP2/RAC2/VAV1/PDPN/SYK/PLCG2/VAV2/LYN/FCER1G/PTP N6
WP_OVERVIEW_OF_LEUKOCYTEINTRINSIC_HIPPO_PATHWAY_FUNCTIONS	2.0 892 508 97	0.0198 64398	CCR7/PRDM1/FOXP3/LATS2/YAP1/RASSF5/NDRG1/FYB1/TEAD3/ITGAL/FERMT3/FOXO1/LPL/RAB13/FOXO3/ MOB1A/TEAD1/MAPK14/TEAD4/STK3/LATS1/SAV1
PID_DELTA_NP63_PATHWAY	2.0 865 179 5	0.0198 64398	VDR/COL5A1/BDKRB2/FOSL2/RUNX1/ITGA3/RAB38/TBXT/IGFBP3/YAP1/CEBPD/RRAD/IL1A/NRG1/SFN/AXL/ PERP/KRT5/POU2F2/HELLS/TP63/CDKN2A/GPX2
BIOCARTA_IL6_PATHWAY	2.0 854 707 91	0.0198 64398	IL6/SHC1/JAK3/CEBPB/IL6R/FOS/STAT3/SRF/JUN

REACTOME_PLATELET_ADHESION_TO_EXPOSED _COLLAGEN	2.0 854 294 25	0.0198 64398	COL1A1/COL1A2/ITGA2/ITGA10/ITGB1/ITGA1/GP1BA/VWF/LYN/FCER1G
WP_AMPLIFICATION_AND_EXPANSION_OF_ONCO GENIC_PATHWAYS_AS_METASTATIC_TRAITS	2.0 838 184 65	0.0198 64398	POSTN/TNC/PIK3CG/CYTIP/VCAM1/LEF1/VEGFA/EPAS1/JAG1/CXCR4/TCF7
WP_TGFBETA_RECEPTOR_SIGNALING	2.0 827 060 18	0.0198 64398	THBS1/LIF/SERPINE1/FST/INHBA/LTBP1/RUNX2/TGFBR2/IFNG/FOS/LEF1/TGFB1/EGF/ENG/NFKB1/STAT3/R UNX3/JUN/SKI/SMAD1/SMAD3/SPP1/EP300
BIOCARTA_LYM_PATHWAY	2.0 818 888 92	0.0198 64398	CXCL8/ICAM1/ITGA4/VCAM1/ITGB2/ITGAL/ITGB1/SELL/IL1A/PECAM1
BIOCARTA_IL17_PATHWAY	2.0 807 332 34	0.0198 64398	CSF3/IL6/CXCL8/CD3E/CD3G/CD2/CD4/CD3D/CD247/CD8A/KITLG
REACTOME_PURINERGIC_SIGNALING_IN_LEISHM ANIASIS_INFECTION	2.0 769 644 43	0.0198 64398	CTSG/MEFV/C3/NFKB2/IL1B/C3AR1/NLRP3/IL1A/NT5E/NFKB1/PSTPIP1/CASP1/ENTPD5
KEGG_NATURAL_KILLER_CELL_MEDIATED_CYTO TOXICITY	2.0 764 488 49	0.0198 64398	CSF2/ICAM1/FASLG/SHC1/TNFRSF10C/KIR2DL1/LCK/RAET1L/FCGR3B/KIR2DL4/TNFRSF10A/TNFRSF10D/PI K3CG/PRF1/IFNG/NFATC4/RAET1G/FCGR3A/ITGB2/PIK3CD/PIK3R5/ZAP70/ULBP3/LCP2/RAC2/VAV1/ITGAL/ NCR1/SYK/TNFRSF10B/NFATC2/PLCG2/VAV2/MICB/GZMB/HLA-C/KIR2DS4/KIR3DL2/HLA- B/CD247/FCER1G/TNFSF10/SH2D1A/PTPN6/KIR3DL1/NFATC1/MICA/KLRD1/IFNA5/NFAT5/IFNA14/NFATC3/P LCG1/HLA-E/IFNAR1/FAS/SH3BP2/KIR2DL3/ULBP2/ULBP1/ARAF/CD244/LAT/HLA-G
REACTOME_ANTIGEN_PRESENTATION_FOLDING _ASSEMBLY_AND_PEPTIDE_LOADING_OF_CLASS _I_MHC	2.0 756 428 68	0.0198 64398	ERAP2/ERAP1/SEC24D/TAPBP/PDIA3/HLA-C/HLA-B/TAP1/HSPA5/HLA-F/HLA- E/SEC23A/SEC24A/CALR/TAP2/HLA-G/SEC31A/CANX/SEC24C

WP_REGULATORY_CIRCUITS_OF_THE_STAT3_SIGNALING_PATHWAY	2.0 722 232 22	0.0198 64398	IL2RA/IL7R/IL21R/IL2RB/IL22RA1/CSF2RB/IL9R/SOCS3/JAK3/AGTR2/OSMR/IL2RG/PTPRC/MAPK13/F2RL3/CSF3R/IL15RA/IL10RA/IL6R/F2RL2/PDGFRB/AGTR1/IL27RA/STAT3/MAPK4/F2R/IFNLR1/TYK2/IL20RB/JAK2/IFNAR1/IL10RB/PIAS3/MAPK14/GHR/DUSP2/CTF1
BIOCARTA_BLYMPHOCYTE_PATHWAY	2.0 719 705 86	0.0198 64398	CR1/ICAM1/CR2/FCGR2B/PTPRC/CD80/ITGB2/ITGAL/CD40/HLA-DRB1
REACTOME_CASPASE_ACTIVATION_VIA_DEATH_RECEPTORS_IN_THE_PRESENCE_OF_LIGAND	2.0 707 963	0.0198 64398	FASLG/TNFRSF10A/TICAM2/CD14/TNFRSF10B/TICAM1/CASP8/RIPK1/TNFSF10/CFLAR/LY96/FAS/TLR4
REACTOME_ACTIVATION_OF_MATRIX_METALLOPROTEINASES	2.0 657 273 42	0.0198 64398	MMP1/MMP10/MMP13/CTSG/MMP7/MMP14/MMP8/TPSAB1/CMA1/TIMP1/MMP11/COL18A1/FURIN/MMP9/ELANE/MMP3/MMP25/CTSK
BIOCARTA_CTL_PATHWAY	2.0 655 728 82	0.0198 64398	ICAM1/FASLG/CD3E/CD3G/PRF1/ITGB2/ITGAL/GZMB/CD3D/CD247
WP_SPINAL_CORD_INJURY	2.0 610 752 24	0.0198 64398	PTGS2/IL6/LEP/CCR2/CXCL8/ROS1/IL1R1/CXCL1/ICAM1/NOS2/FCGR2C/CCL2/CXCL2/SELP/PLA2G2A/LILRB2/LILRB3/LTB/FCGR2A/EGR1/COL4A1/LTB4R/ZFP36/IFNG/MMP12/EFNB2/MMP9/NR4A1/ARG1/SLIT3/FOS/IL1B/TGFB1/C5/IL1A/TNFSF13/SLIT2/CXCL10/C1QB/PLA2G5/LGALS3/VIM/MIR23B
WP_IL2_SIGNALING_PATHWAY	2.0 608 888 77	0.0198 64398	IL2RA/IL2RB/CISH/SHC1/SOCS3/JAK3/LCK/IL2RG/FOS/STAT5A/SYK/STAT3/JUN
REACTOME_RESPONSE_TO_ELEVATED_PLATELET_CYTOSOLIC_CA2_	2.0 593 779 22	0.0198 64398	THBS1/ORM1/F13A1/SERPINE1/PPBP/FN1/SELP/CD109/SERPINA1/ACTN1/TOR4A/ITGB3/TIMP1/A2M/TGFB2/SERPING1/PHACTR2/PROS1/FLNA/VCL/VEGFC/RARRES2/LHFPL2/ECM1/TGFB1/EGF/CD36/SERPINA3/CTSW/GAS6/TLN1/PLEK/VEGFA/FERMT3/FGG/TGFB3/STXBP2/ACTN4/CALU/CFD/SRGN/VWF/PECAM1/HSPA5/LGALS3BP/PF4/HGF/QSOX1/APLP2/SYTL4/PDGFA
REACTOME_INTERLEUKIN_15_SIGNALING	2.0 552	0.0198 64398	IL2RB/SHC1/JAK3/IL2RG/IL15RA/STAT5A/IL15/STAT3

	214 69		
WP_NEPHROTIC_SYNDROME	2.0 548 205 69	0.0198 64398	ITGA3/ITGB4/CTLA4/SYNPO/APOL1/MYO1E/MYH9/CD2AP/LAMB2/PODXL/EMP2/WT1/LMNA/ACTN4/PAX2/PLCE1/GPC5/CUBN/ARHGAP24/CD151
PID_A6B1_A6B4_INTEGRIN_PATHWAY	2.0 545 205 65	0.0198 64398	LAMB1/LAMA3/MET/LAMA2/SHC1/LAMC1/ITGB4/LAMC2/ERBB2/LAMA4/LAMA1/EGF/ITGB1/LAMB2/LAMA5/IL1A/SFN/CASP7/LAMC3
REACTOME_TOLL_LIKE_RECEPTOR_CASCADES	2.0 510 105 11	0.0212 74503	LBP/BIRC3/NOD2/TLR8/ITGAM/APOB/TICAM2/TLR6/SAA1/TLR2/S100A8/MAP3K8/ITGB2/TLR5/NFKB2/CD14/S100A9/CTSB/TLR9/TLR1/FOS/IRAK3/TLR7/CD36/CTSS/DUSP4/SOCS1/TICAM1/IKBKE/CD180/UNC93B1/FGG/PLCG2/CTSK/IRAK2/CTSL/LGMN/NFKB1/RIPK3/RPS6KA3/CASP8/MYD88/RIPK1/JUN/NFKBIA/S100A12/TRAF3/LY96/DUSP6/MAP2K3/IRF7/SFTPA1/TRAF6/TLR3/MEF2A/DUSP3/TLR4/MAPKAPK2/MAPK14/TIRAP/IRAK1/HSP90B1/BPI/BTK
BIOCARTA_TCYTOTOXIC_PATHWAY	2.0 502 104 09	0.0198 64398	ICAM1/CD3E/CD3G/CD2/PTPRC/ITGB2/CD28/ITGAL/CD3D/CD247/CD8A
BIOCARTA_EICOSANOID_PATHWAY	2.0 482 451 51	0.0246 21212	PTGS2/PTGER2/PTGFR/PTGES/PTGER4/PTGIS/PTGIR/PTGS1/ALOX5/ALOX5AP/TBXA2R/TBXAS1/CYSLTR1
PID_CXCR4_PATHWAY	2.0 451 489 23	0.0198 64398	ITGA2/ITGA11/CD3E/ITGA4/ITGA3/LCK/CD3G/ITGA5/PIK3R6/PTPRC/PIK3CG/ITGA10/PIK3CD/MMP9/CXCL12/PIK3R5/CD4/VAV1/ITGB1/BLK/STAT5A/PLCB2/HCK/LIMK1/ITGA1/SSH1/CD3D/STAT3/STAT2/FOXO1/CD247/LYN/PXN/ITGA7/PTPN6/ARR3/ITGA9/PLCB3/FGR/JAK2
PID_VEGFR1_2_PATHWAY	2.0 411 898 66	0.0198 64398	SH2D2A/MYOF/ITGB3/IQGAP1/GRB10/FES/VCL/CAV1/VEGFA/PRKCD/FLT1/NOS3/PXN/PTPN6/CDH5/PTPRJ/ROCK1/MAP2K3/KDR/PLCG1/PTPN2/MAPKAPK2/MAPK14/CBL/CTNNA1/PRKACA/ITGAV/AKT1/BRAF/NEDD4/PTK2B/PRKAA1/PIK3CA/PRKCA/DNM2/SHB/GRB2/HGS

WP_AGERAGE_PATHWAY	2.0 369 226 8	0.0198 64398	MMP13/NOS2/MMP7/MMP14/SHC1/MMP9/STAT5A/MSN/MSR1/IRS1/NCF1/NFKB1/STAT3/CASP8/MYD88/FOX O1/INHBB/PRKCD/JUN/LGALS3/NOS3/SP1/HIF1A/NFKBIA/ROCK1/SMAD3/JAK2/MAPK14/TIRAP/DIAPH1/INSR /STAT1/IKBKB/AKT1/MMP2
REACTOME_ACYL_CHAIN_REMODELLING_OF_PS	2.0 359 144 06	0.0246 21212	PLA2R1/PLA2G2A/PLA2G2F/MBOAT1/PLA2G4E/OSBPL10/PLA2G5/PLA2G2D/LPCAT3/PLA2G4D/PLA2G4F/OS BPL5/PLA2G4B
WP_INTEGRINMEDIATED_CELL_ADHESION	2.0 335 121 77	0.0198 64398	CAPN6/ITGA2/ITGA11/SHC1/ITGA4/ITGA3/ITGB4/ITGAM/ITGA5/ITGB3/ITGA10/ITGB2/VCL/RAC2/ITGAD/ITGB7 /ITGAL/MIR34C/ITGB1/CAV1/ITGB5/ZYX/TLN1/CAPN11/VAV2/ITGA1/MAPK4/PXN/ITGA7/TNS1/VASP/ITGAX/R OCK1/ITGA9/MAP2K3/ROCK2/GIT2
BIOCARTA_CLASSIC_PATHWAY	2.0 283 515 74	0.0198 64398	C1R/C1S/C3/C5/C7/C1QC/C1QA/C1QB/C2/C8A/C4A/C4B/C6
REACTOME_INTERLEUKIN_RECEPTOR_SHC_SIG NALING	2.0 280 454 94	0.0198 64398	CSF2/IL2RA/IL2RB/CSF2RB/SHC1/JAK3/IL2RG/PIK3CD/INPP5D/PTPN6/INPPL1/JAK2
WP_EBV_LMP1_SIGNALING	2.0 276 264 81	0.0247 7454	CCL20/CXCL8/NFKB2/CCL5/MAP3K14/TRAF1/NFKB1/NFKBIA/PDLIM7/MAP3K3/TRAF6/IRAK1/IFNB1/IKBKB/T RADD
SA_B_CELL_RECEPTOR_COMPLEXES	2.0 273 930 58	0.0198 64398	PAPPA/SHC1/FOS/VAV1/SYK/VAV2/RPS6KA3/JUN/LYN
WP_FOLATE_METABOLISM	2.0 273 722 36	0.0198 64398	IL6/SAA4/SERPINE1/ICAM1/SOD2/SAA2/CCL2/APOB/LDLR/SAA1/IFNG/ABCA1/NFKB2/IL1B/SERPINA3/CSF1/ FGG/NFKB1/MAT1A/FOLR2/MTR/CRP/SOD3/GPX2/INSR/SHMT1/TP53/FOLR3/MTHFR/MTHFD1



REACTOME_TNF_RECEPTOR_SUPERFAMILY_TNF_SF_MEMBERS_MEDIATING_NON_CANONICAL_NF_KB_PATHWAY	2.0 268 201 75	0.0198 64398	TNFSF11/TNFSF14/BIRC3/LTB/TNFRSF11A/CD40LG/MAP3K14/CD40/LTBR/TRAF3/LTA
BIOCARTA_NTHI_PATHWAY	2.0 259 990 77	0.0247 7454	CXCL8/TGFBR2/IL1B/DUSP1/MAP3K14/NFKB1/MYD88/NFKBIA/SMAD3/MAP2K3/EP300/MAPK14/IKBKB/CREB BP/TGFBR1/MAP3K7/TNF/NR3C1/RELA
REACTOME_DISEASES_OF_GLYCOSYLATION	2.0 249 076 03	0.0198 92136	THBS1/KERA/SBSPON/LUM/SDC1/MUCL1/SPON2/ADAMTS1/ADAMTS2/B4GALT1/MUC3A/ADAMTS14/HSPG2 /BGN/ADAMTS3/ADAMTSL4/ADAMTS12/ADAMTSL1/NOTCH3/GPC4/CHSY1/ADAMTS9/MUC1/SLC26A2/ADAM TSL5/NOTCH2/ADAMTS16/OGN/GALNT12/GALNT3/HEXB/THBS2/CTSA/PAPSS2/MGAT2/GPC1/ADAMTS4/GP C5/CFP/ADAMTS13/ADAMTS7/AGRN/PRELP/SDC2/FMOD/CHST14/MUC13/GPC6/VCAN/SDC4/EXT1/DCN/CH ST3/GLB1/EXT2
WP_RELATIONSHIP_BETWEEN_INFLAMMATION_COX2_AND_EGFR	2.0 219 577 41	0.0198 64398	PTGS2/MMP1/PTGER2/PTGER4/PIK3CG/PIK3CD/ESR1
WP_RESISTIN_AS_A_REGULATOR_OF_INFLAMMATION	2.0 209 442 24	0.0198 64398	IL6/RETN/CXCL8/PIK3CG/PIK3CD/IL12B/PLCB2/PLCG2/NFKB1/NFKBIA/PLCE1/PLCG1/PLCB3/MAPK14
WP_VEGFAVEGFR2_SIGNALING_PATHWAY	2.0 184 206 14	0.0408 93152	PTGS2/DKK1/CXCL8/CCN1/MMP10/ICAM1/TNXB/SOD2/ADAMTS1/MMP14/FN1/SELE/CCL2/SH2D2A/SHC1/TN FRSF10C/PLAUR/EPHA2/ITGB3/CYBB/IGFBP3/IQGAP1/EGR1/P4HA2/RCAN1/MYH9/FHL2/NRP2/TXNDC5/PTP N14/MYO1C/GRB10/CGNL1/EGR3/STAT6/NDRG1/ADAMTS9/HLX/VCL/NCF2/NR4A1/ADAM9/SLC2A14/PLAU/C CN2/PRKG1/NEXN/HBEGF/ENG/ITGB1/CAV1/ITGB5/ERN1/MOV10/TPP1/PLOD3/NR4A2/VEGFA/F3/NFATC2/F GG/HDAC7/RHOJ/VAV2/LMAN1/NR4A3/FHOD1/LIMK1/DUSP5/NCF1/NFKB1/TMOD3/STAT3/CALU/HSPA1A/FL II/KATNAL2/FOXO1/PTPN9/PRKCD/ARNT/SRF/PLA2G5/JUN/GPC1/FGD5/FLT1/NOS3/ARF6/C15orf39/PXN/AC ACB/SLC8A1/PRKD2/P4HB/KL/PTPN6/CDH5/MKNK1/NFKBIA/PTPRJ/ADAM10/MYH11/ROCK1/NFATC1/MAP2 K3/INPP4B/ROCK2/NUMB/FOXO3/ANXA1/HSPB1/KDR/DLL4/PLCG1/PLCB3/EIF4G1/ASCC3/CTNND1/PALM2A KAP2/PDIA6/MAP3K5/FAS/SEMA6D/SMARCA2/MMRN2/ADRB2/JAG1/MAPKAPK2/MAPK14/FAM120A/BRD4/A RHGEF15/ERG/TEAD4/RCN1/IER5/TRAF3IP2/PRRC2C/FMNL3/CBL/TPM3/CALR/CTNNA1/STAT1/SND1/EEA1/ CCRL2/ITGAV/CAPN2/ABL1/SDCBP/PTPN1/TNFRSF25

WP_PI3KAKTMTOR_VITD3_SIGNALLING	2.0 168 189 99	0.0246 21212	VDR/HK3/SLC2A3/IL10/CD80/CYP24A1/CD86/RXRA/PFKFB4/HLA-DRA/AKT1/PIK3CA/LDHA/MTOR
PID_SYNDECAN_2_PATHWAY	2.0 158 878 97	0.0198 64398	CSF2/CXCL8/LAMA3/ITGA2/FN1/ITGA5/LAMA1/TGFB1/ITGB1/TNFRSF13B/PRKCD
WP_PROLACTIN_SIGNALING_PATHWAY	2.0 132 675 47	0.0198 64398	NOS2/PRLR/CISH/SHC1/SOCS3/TEC/PIK3CG/ERBB2/FLNA/ZAP70/FOS/VAV1/ITGB1/STAT5A/SOCS1/IRS1/AV2/IRF1/NFKB1/IRS2/STAT3/JUN/PXN/PTPN6/NFKBIA/CTSD
PID_SMAD2_3NUCLEAR_PATHWAY	2.0 110 302 19	0.0198 64398	COL1A2/VDR/SERPINE1/RUNX1/LAMC1/RUNX2/GATA3/CDKN2B/IGHA1/CEBPB/IL10/FOS/ESR1/ITGB5/DLX1/CDKN1A/FOXO1/RUNX3/JUN/SKI/SP1/SMAD3/FOXO3/EP300/IRF7/SIN3A/ATF3/PIAS3/CITED1/FOXH1/TFE3/SIN3B/IFNB1/AR/AKT1/FOXG1/SP3/CREBBP/TFDP1/CDK2
KEGG_TYPE_I_DIABETES_MELLITUS	2.0 100 131 63	0.0198 64398	FASLG/PRF1/IFNG/CD80/HLA-DQA1/CD28/HLA-DOA/IL1B/IL12B/HLA-DQA2/HLA-DQB1/IL1A/GZMB/HLA-DPA1/HLA-C/HLA-B/HLA-DRB1/HLA-F/HLA-DPB1/HLA-E/LTA/CD86/FAS/HLA-DMA/HLA-DOB/HLA-G
WP_VIRAL_ACUTE_MYOCARDITIS	2.0 037 628 99	0.0198 64398	IL6/LAMA2/NOD2/CCR5/CCR3/IFNG/KRT8/IL10/CD80/ITGB2/TLR5/NFKB2/MMP9/RAC2/CD4/IL12B/ITGAL/TGFB1/CAV1/CD40LG/SOCS1/TICAM1/ABL2/STAT3/CASP8/CASP7/CASP1/CASP2/DMD/MICA/EIF4G1/CD55/TLR3/HLA-DMA/TLR4/CXCR4/AIF1/RASA1/BNIP2/STAT1/ABL1/DAG1/AKT1/CASP6
WP_COVID19_ADVERSE_OUTCOME_PATHWAY	2.0 026 166 65	0.0198 64398	CSF3/IL6/IL2RA/CXCL8/CCL2/IL10/IL1B/CXCL10
PID_FCER1_PATHWAY	2.0 007 103 31	0.0198 64398	IGHE/ITK/SHC1/FCGR2B/LCP2/FOS/VAV1/DUSP1/SYK/HCLS1/WIPF1/NFATC2/NFKB1/JUN/LYN/FCER1G/PXN/PLCG1/SPHK1/BTK/RASA1/CBL/PLD2/LAT/IKBKB/MS4A2/AKT1/LAT2/PIK3CA/SOS1/DOK1/FER/GRB2

KEGG_ASTHMA	1.9 957 613 3	0.0198 64398	CCL11/IL10/HLA-DQA1/HLA-DOA/HLA-DQA2/HLA-DQB1/CD40LG/RNASE3/HLA-DPA1/CD40/FCER1G/HLA-DRB1/HLA-DPB1/HLA-DMA/HLA-DOB/HLA-DRA/MS4A2
REACTOME_SARS_COV_INFECTIONS	1.9 929 246 92	0.0198 64398	IL1R1/ITGA4/JAK3/ST3GAL1/FURIN/IL6R/TLR9/IL1RAP/TLR7/ITGB1/ST6GALNAC2/VEGFA/PARP14/PARP10/C TSL/PDCD1/PARP4/RIPK1/ATP1A1/CYSLTR1/ROCK1/TYK2/ROCK2/GANAB/JAK2/IMPDH1/TMPRSS2/BRD4/M GAT1/PARP9
PID_PI3KCI_PATHWAY	1.9 920 753 77	0.0198 64398	ITK/LCK/PIK3R6/PIK3CG/PIK3CD/PIK3R5/ZAP70/DAPP1/BLK/SYK/HCK/PLCG2/LYN/ARF6/FOXO3/INPPL1/PLC G1/CYTH3/FGR
WP_APOPTOSIS_MODULATION_AND_SIGNALING	1.9 898 447 27	0.0198 64398	IL1R1/FASLG/IL1R2/BIRC3/TNFRSF10C/TNFRSF10A/TNFRSF10D/TNFRSF1B/NAIP/FOS/BLK/CASP4/BCL2A1/ TNFRSF10B/MAP3K14/NFKB1/MCL1/CASP8/HSPA1A/MYD88/CASP7/RIPK1/JUN/BMF/CASP1/TNFSF10/CFLA R/AIFM2/CASP10/TNFRSF1A/CASP2/NFKBIA/TRAF3/PIDD1/BCL2L11/PMAIP1/TRAF6/MAP3K5/FAS/CDKN2A/I RAK1/TP53/TNFRSF11B
ST_INTERFERON_GAMMA_PATHWAY	1.9 894 247 54	0.0198 64398	REG1A/CISH/PTPRU/PLA2G2A/IFNG
BIOCARTA_NFKB_PATHWAY	1.9 883 911 98	0.0246 21212	IL1R1/TNFAIP3/TNFRSF1B/IL1A/MAP3K14/NFKB1/MYD88/RIPK1/TNFRSF1A/NFKBIA/TRAF6
WP_HEPATITIS_B_INFECTION	1.9 881 974 41	0.0212 74503	IL6/CXCL8/FASLG/JAK3/HSPG2/TGFBR2/EGR2/TICAM2/MAPK13/TGFB2/TLR2/EGR3/NFATC4/PIK3CD/STAT6 /MMP9/CREB3L1/FOS/TGFB1/STAT5A/TICAM1/IKBKE/NFATC2/CREB3L2/CDKN1A/TGFB3/NFKB1/STAT3/CAS P8/STAT2/MYD88/JUN/CASP10/TRAF3/DDX58/SMAD3/NFATC1/IFNA5/IFNA14/IFIH1/TYK2/MAP2K3/NFATC3/E P300/IRF7/JAK2/IFNAR1/MAVS/TRAF6/TLR3/FAS/TLR4/MAPK14/TIRAP/IRAK1/ARAF/DDB2/DDX3X/STAT1/IFN B1/IKKBK/AKT1/BRAF/CREBBP/PTK2B/IFNA17
BIOCARTA_TNFR2_PATHWAY	1.9 871 691 62	0.0198 64398	TNFAIP3/TNFRSF1B/DUSP1/MAP3K14/TRAF1/NFKB1/RIPK1/NFKBIA/TRAF3

PID_BCR_5PATHWAY	1.9 853 969 63	0.0198 64398	SHC1/FCGR2B/PTPRC/FOS/DAPP1/CD72/BCL2A1/SYK/SH3BP5/MAP4K1/PLCG2/VAV2/NFKB1/JUN/LYN/CARD11/MALT1/PTPN6/NFKBIA/POU2F2/NFATC1/TRAF6/IBTK/MAPK14/BTK/RASA1/BCL10/IKBKB/AKT1/PTEN/CD79A/PIK3CA/MAP3K7/BLNK/SOS1/ETS1/DOK1
REACTOME_IRAK4_DEFICIENCY_TLR2_4_	1.9 825 034 48	0.0198 64398	TLR6/TLR2/CD14/TLR1/CD36/MYD88/LY96/TLR4/TIRAP/BTK
BIOCARTA_CASPASE_PATHWAY	1.9 812 591 21	0.0246 21212	BIRC3/PRF1/CASP4/LMNA/GZMB/CASP8/CASP7/CASP1/CASP10/CASP2
REACTOME_PEPTIDE_LIGAND_BINDING_RECEPTORS	1.9 802 377 62	0.0239 07265	CCL13/CCL11/CCL20/CXCL13/XCR1/CXCL5/CCR8/CCL7/BDKRB1/FPR2/CCR2/CCR4/CXCR3/PPBP/CXCR1/CXCL8/CXCL3/MC3R/UTS2/CCL23/CXCL1/PROK2/BDKRB2/CCL2/CXCL2/CCL22/INSL3/FPR3/AGTR2/F2RL1/C5AR1/PROKR1/CXCR5/NPY2R/CCR7/CCR5/CCR6/CXCL6/NTS/CXCL9/CCR1/C3/SAA1/F2RL3/CCR3/CXCR2/CXCR6/CXCL12/C5AR2/CCL5/HCRTR1/TAC3/F2RL2/FPR1/C3AR1/GRPR/C5/QRFP/PYY/XCL2/KISS1R/ECE1/AGTR1/OXTR
PID_AMB2_NEUTROPHILS_PATHWAY	1.9 796 047 89	0.0198 64398	IL6/ICAM1/SELP/PLAUR/LCK/ITGAM/LRP1/APOB/ITGB2/MMP9/PLAU/CCN2/BLK/TLN1/HCK/NFKB1/LYN
ST_STAT3_PATHWAY	1.9 787 79	0.0198 64398	REG1A/IL6/CISH/PTPRU/JAK3/IL6R/STAT3/JAK2/PIAS3
KEGG_ANTIGEN_PROCESSING_AND_PRESENTATION	1.9 742 372 17	0.0198 64398	KIR2DL1/CIITA/KIR2DL4/IFI30/HLA-DQA1/CTSB/HLA-DOA/CD4/HLA-DQA2/HLA-DQB1/CTSS/TAPBP/CTSL/HSPA1B/LGMN/HLA-DPA1/PDIA3/HLA-C/KIR2DS4/CD74/HSPA6/HSPA1A/KIR3DL2/HLA-B/HLA-DRB1/TAP1/KIR3DL1/HSPA5/HLA-F/HLA-DPB1/CD8A/KLRD1/IFNA5/IFNA14/HLA-E/LTA/HLA-DMA/KIR2DL3/HLA-DOB/CALR/TAP2/HLA-G
REACTOME_SIGNALING_BY_LEPTIN	1.9 712 405 91	0.0198 64398	LEP/SOCS3/STAT5A/IRS1/IRS2/STAT3/JAK2

WP_TGFB_SIGNALING_IN_THYROID_CELLS_FOR_EPITHELIALMESENCHYMAL_TRANSITION	1.9 700 897 69	0.0198 64398	FN1/SNAI2/RUNX2/TNC/TGFB1/CDH6/CDH2/VIM/SMAD3
WP_FOCAL_ADHESIONPI3KAKTMTORSIGNALING_PATHWAY	1.9 678 082 65	0.0340 05146	THBS1/COL1A1/COL1A2/GNGT1/CSF3/COL5A1/IL2RA/COL6A2/COL3A1/IL7R/LAMB1/LAMA3/FOXA1/TNXB/NOS2/ITGA2/MET/IL2RB/COL5A2/PRLR/LAMA2/ITGA11/FN1/ITGA4/JAK3/LAMC1/IBSP/ITGA3/OSMR/EPHA2/SLC2A3/TNC/TCL1A/ITGB4/FGF19/IL2RG/IL4R/LAMC2/COMP/ITGA5/ITGB3/FGF10/COL4A1/COL4A2/PIK3CG/ITGA10/THBS3/LAMA4/CSF3R/FGFR1/LAMA1/ITGB2/PIK3CD/IL6R/VEGFC/PIK3R5/COL5A3/OSM/CREB3L1/ITGAD/EFNA5/TNN/CSF1R/ITGB7/ITGAL/EGF/ITGB1/ITGB5/LAMB2/PDGFRB/LAMA5/CSF1/FLT4/VEGFA/EPAS1/CREB3L2/IRS1/CDKN1A/THBS2/IRS2/VWF/FOXO1/LAMC3/PFKFB3/F2R/FGF11/FLT1/NOS3/ITGA7/TBC1D1/PDGFD/HIF1A/SLC2A1/ITGAX/ANGPT1/HGF/ANGPT2/GYS1/ITGA9/SPP1/FOXO3/KDR/KITLG/PDGFA/LAMB3/SREBF1/JAK2/IFNAR1
WP_DIFFERENTIATION_PATHWAY	1.9 669 347 67	0.0198 64398	IL6/DKK1/CXCR1/FST/IL11/INHBA/TNFSF11/WNT3A/FGF10/ALK/IL6R/CSF1R/GDF5/TGFB1/EGF/CSF1/VEGFA/NT5E/TGFB3
BIOCARTA_IL4_PATHWAY	1.9 649 190 06	0.0198 64398	SHC1/JAK3/IL2RG/IL4R/STAT6/IRS1
REACTOME_DAP12_INTERACTIONS	1.9 612 379 23	0.0198 64398	CD300E/GRAP2/SHC1/TREM1/LCK/SIGLEC15/CLEC5A/CD300LB/LCP2/SIGLEC14/SYK/SIRPB1/PLCG2/VAV2/HLA-C/KIR2DS4/HLA-B/KLRD1/PLCG1/HLA-E
PID_AVB3_OPN_PATHWAY	1.9 607 183 1	0.0198 64398	ITGB3/CD44/MMP9/PLAU/FOS/SYK/MAP3K14/NFKB1/JUN/NFKBIA/SPP1/ROCK2/ITGAV/MMP2/PTK2B/GSN/AV3/PIK3CA/PIP5K1A
REACTOME_ANCHORING_FIBRIL_FORMATION	1.9 598 030 91	0.0198 64398	COL1A1/COL1A2/LAMA3/COL7A1/LAMC2/COL4A1/COL4A2/BMP1

REACTOME_TNFR2_NON_CANONICAL_NF_KB_PATHWAY	1.9 555 927 76	0.0198 64398	CD70/FASLG/TNFRSF18/TNFSF11/TNFSF14/TNFRSF9/BIRC3/TNFSF4/TNFSF15/LTB/TNFRSF11A/TNFRSF1B/RELB/CD27/NFKB2/TNFRSF17/TNFSF8/EDA2R/CD40LG/TNFRSF14/TNFRSF8/MAP3K14/TNFRSF13B/TNFSF13/CD40/TNFRSF1A/LTBR/TRAF3/TNFRSF4/PSME4/LTA
WP_MATRIX_METALLOPROTEINASES	1.9 539 014 19	0.0198 64398	MMP1/MMP10/MMP13/MMP7/MMP14/MMP19/MMP8/TIMP1/MMP11/MMP12/MMP9/MMP3/MMP25
REACTOME_GLYCOSAMINOGLYCAN_METABOLISM	1.9 535 305 14	0.0198 64398	KERA/LUM/LYVE1/HS3ST3B1/SDC1/HAS3/CEMIP/HAS1/B4GALT1/HSPG2/BGN/CHSY3/ST3GAL1/DSE/GPC4/CD44/CHSY1/CHST13/SLC26A2/HPSE/HS3ST3A1/GUSB/CHST2/STAB2/OGN/GNS/HGSNAT/B3GNT2/SLC9A1/CHPF2/HEXB/CHST7/PAPSS2/GPC1/GALNS/HS6ST1/GPC5/CSGALNACT2/SGSH/XYL2/AGRN/PRELP/SDC2/FMOD/CHST14/CHPF/GPC6/VCAN/ARSB/B3GNT3/SDC4/EXT1/CHST15/DCN/CHST3/B4GALT5/GLB1/EXT2/IDUA/HAS2
REACTOME_HYALURONAN_UPTAKE_AND_DEGRADATION	1.9 534 231 65	0.0198 64398	LYVE1/CD44/GUSB/STAB2/SLC9A1/HEXB
BIOCARTA_TCRA_PATHWAY	1.9 527 765 88	0.0198 64398	CD3E/LCK/CD3G/PTPRC/ZAP70/CD4/CD3D/CD247/HLA-DRB1
REACTOME_DISEASES_ASSOCIATED_WITH_GLYCOSAMINOGLYCAN_METABOLISM	1.9 527 348 32	0.0198 64398	KERA/LUM/SDC1/B4GALT1/HSPG2/BGN/GPC4/CHSY1/SLC26A2/OGN/HEXB/PAPSS2/GPC1/GPC5/AGRN/PRELP/SDC2/FMOD/CHST14/GPC6/VCAN/SDC4/EXT1/DCN/CHST3/EXT2
KEGG_PATHWAYS_IN_CANCER	1.9 471 683 9	0.0329 51051	PTGS2/MMP1/IL6/CXCL8/CBLCLAMB1/LAMA3/NOS2/FASLG/ITGA2/MET/FZD1/LAMA2/FN1/BIRC3/RUNX1/WNT3A/LAMC1/ITGA3/GLI1/FZD7/FGF19/GLI3/LAMC2/TGFBR2/GLI2/CDKN2B/FZD8/FGF10/COL4A1/NTRK1/COL4A2/PIK3CG/FZD5/ERBB2/TGFB2/LAMA4/CSF3R/FGFR1/LAMA1/RASSF5/PIK3CD/NFKB2/MMP9/VEGFC/FLT3/PIK3R5/RAC2/FOS/PML/LEF1/CSF1R/TGFB1/EGF/ITGB1/STAT5A/LAMB2/JUP/PDGFRB/TRAF5/LAMA5/VEGFA/EPAS1/PLCG2/CDKN1A/NKX3-1/TRAF1/TGFB3/NFKB1/STAT3/CASP8/SPI1/FOXO1/LAMC3/ARNT/JUN/RALBP1/FGF11/STK36/FZD10/SMO/FGF5/HIF1A/CDK6/PPARD/NFKBIA/SLC2A1/TRAF3/FZD2/SMAD3/HGF/FZD4/EP300/PLCG1/KITLG/PDGFA/FZD6/LAMB3/TRAF6/FAS/MECOM/TPR/PIAS3/CDKN2A/LAMB4/FLT3LG/PTCH2/ITGA2B/STK4/IGF1R/HSP90B1/TP

			53/TCF7/RXRA/CBL/ARAF/TPM3/WNT1/CTNNA1/STAT1/ITGAV/IKBKB/AR/PDGFB/PPARG/SHH/ABL1/PAX8/FGF7/CCNE1/WNT5B/AKT1/MMP2/BRAF/CREBBP
REACTOME_PLATELET_ACTIVATION_SIGNALING_AND_AGGREGATION	1.9 469 365 29	0.0287 31884	THBS1/COL1A1/COL1A2/ORM1/GNGT1/F13A1/SERPINE1/PPBP/ITPR3/FN1/SELP/CD109/SHC1/SERPINA1/ACTN1/LCK/TOR4A/ITGB3/TIMP1/PIK3R6/A2M/PIK3CG/TGFB2/SERPING1/F2RL3/PHACTR2/PROS1/FLNA/GNA15/VCL/VEGFC/RARRES2/PIK3R5/LHFPL2/LCP2/RAC2/ECM1/VAV1/F2RL2/TGFB1/EGF/CD36/SERPINA3/PDPN/CTSW/GAS6/SYK/TLN1/TRPC7/PLEK/VEGFA/P2RY1/FERMT3/FGG/PLCG2/VAV2/TBXA2R/TGFB3/STXPB2/GP1BA/ACTN4/CALU/CFD/SRGN/VWF/PRKCD/GNA14/LYN/FCER1G/F2R/ITPR2/PECAM1/ADRA2A/PTPN6/HSPA5/LGALS3BP/PF4/HGF/QSOX1/RASGRP1/APBB1IP/APLP2/MPIG6B/SYTL4/PDGFA
BIOCARTA_ERYTH_PATHWAY	1.9 452 243 13	0.0198 64398	CSF2/CSF3/IL6/IL11/TGFB2/FLT3/TGFB1/IL1A/TGFB3
WP_PI3KAKT_SIGNALING_PATHWAY	1.9 443 123 07	0.0356 83216	COL6A5/COL6A3/THBS1/COL1A1/COL1A2/GNGT1/CSF3/IL6/IL2RA/COL6A2/NTF3/IL7R/LAMB1/COL6A1/LAMA3/TNXB/FASLG/ITGA2/MET/IL2RB/PCK1/PRLR/LAMA2/ITGA11/FN1/ITGA4/JAK3/LAMC1/IBSP/ITGA3/OSMR/EPHA2/TNC/TCL1A/ITGB4/FGF19/IL2RG/IL4R/LAMC2/COMP/ITGA5/ITGB3/PIK3R6/FGF10/COL4A1/NTRK1/COL4A2/PIK3CG/ITGA10/THBS3/LAMA4/TLR2/CSF3R/FGFR1/LAMA1/PIK3CD/IL6R/VEGFC/PIK3AP1/FLT3/PIK3R5/OSM/CREB3L1/EFNA5/TNN/CSF1R/ITGB7/EGF/ITGB1/ITGB5/LAMB2/PDGFRB/SYK/LAMA5/CSF1/FLT4/VEGFA/CREB3L2/IRS1/ITGA1/CDKN1A/THBS2/NFKB1/PCK2/MCL1/VWF/LAMC3/F2R/FGF11/FLT1/NOS3/ITGA7/FGF5/PDGFD/CDK6/ANGPT1/PKN3/HGF/ANGPT2/GYS1/IFNA5/ITGA9/SPP1/IFNA14/BCL2L11
WP_ESTROGEN_SIGNALING_PATHWAY	1.9 439 933 81	0.0247 7454	GNGT1/FOS/ESR1/NFKB1/JUN/SP1/MAPK14/PRKACA/IKBKB/AKT1/BRAF/PIK3CA/BCL2
BIOCARTA_TCR_PATHWAY	1.9 400 977 34	0.0198 64398	CD3E/SHC1/LCK/CD3G/PIK3CG/NFATC4/PTPN7/ZAP70/FOS/VAV1/NFATC2/CD3D/NFKB1/CD247/JUN/NFKB1A/NFATC1/NFATC3/PLCG1
SIG_IL4RECEPTOR_IN_B_LYPHOCYTES	1.9 383 958 14	0.0198 64398	SHC1/JAK3/IL4R/PIK3CD/STAT6/SOCS1/MAP4K1/IRS1/IRS2
REACTOME_INFECTION_WITH_MYCOBACTERIUM_TUBERCULOSIS	1.9 369	0.0198 64398	MRC1/NOS2/CTSG/LTF/TLR2/RNF213

	063 36		
KEGG_LYSOSOME	1.9 356 622 73	0.0198 64398	CTSG/CTSZ/TCIRG1/SLC11A1/IGF2R/CTSC/CTSB/GAA/MAN2B1/GUSB/CTSS/TPP1/CTSW/GNS/HGSNAT/CD68/LAPTM5/LAMP3/CTSK/HEXB/CTSL/CTSA/LGMN/ACP5/FUCA1/NAGA/GBA/GALNS/CTSD/ARSG/MANBA/LAMP1/PLA2G15/NPC2/SGSH/ACP2/CD164/AP4E1/NPC1/ARSB/M6PR/SORT1/SUMF1/GLB1/GM2A/AP1S3/AP1B1/IDUA/AP3D1/HEXA/CTNS/GGA2/AP3B1/ARSA/GALC/DNASE2
WP_TCELL_RECEPTOR_AND_COSTIMULATORY_SIGNALING	1.9 330 232 7	0.0198 64398	ITK/LCK/CTLA4/CD28/ZAP70/NFATC2/PDCD1/NFKB1/PTPN6/NFKBIA/CD8A/RASGRP1/PLCG1/RASA1/AKT1/IL2/PTEN/CD8B/DYRK2
ST_GAQ_PATHWAY	1.9 246 470 69	0.0250 51994	ITPR3/CFB/NFKB2/NFKB1/ITPR2/NFKBIA/PHKA2/PLD2/GRK2/DAG1/AKT1/TONSL/ITPKB/PIK3CB/PLD3/PITX2/AKT2/PDPK1/IKBKG
PID_INTEGRIN5_PATHWAY	1.9 246 321 76	0.0198 64398	CCN1/FBN1/SDC1/FN1/ITGA4/PLAUR/VCAM1/PLAU/ITGB7/ITGB5
WP_HEMATOPOIETIC_STEM_CELL_GENE_REGULATION_BY_GABP_ALPHABETA_COMPLEX	1.9 228 522 12	0.0329 21564	FLT3/ETV6/GZMB/MCL1/ZFX/FOXO3/EP300/DNMT3A/DNMT1/ATM/CREBBP/PTEN/BCL2
WP_DEVELOPMENT_AND_HETEROGENEITY_OF_THE_ILC_FAMILY	1.9 171 192 59	0.0198 64398	IL6/EOMES/TSLP/AREG/GATA3/IL22/IFNG/GFI1/IL1B/IL12B/IL15/RORA/IL25
WP_PHOTODYNAMIC_THERAPYINDUCED_AP1_SURVIVAL_SIGNALING	1.9 158 652 83	0.0198 64398	IL6/FASLG/BCL3/MAPK13/IFNG/JUNB/FOS/HBEGF/TRAF5/CDKN1A/MCL1/JUN/BMF/TNFSF10/CFLAR/TNFRSF1A/BCL2L11/MAP2K3/TRAF6/MAP3K5/FAS/MAPK14/CDKN2A/TP53/FGF7/CCNE1/NFE2L2/MMP2
WP_IL10_ANTIINFLAMMATORY_SIGNALING_PATHWAY	1.9 132	0.0239 69653	IL6/IL10/IL10RA/IL1A/HMOX1/STAT3/STAT2/IL10RB/STAT1



	460 18		
SA_CASPASE_CASCADE	1.9 110 796 42	0.0239 86691	FASLG/BIRC3/PRF1/GZMB/CASP8/CASP7/CASP10/SREBF1/FAS
WP_THE_HUMAN_IMMUNE_RESPONSE_TO_TUBERCULOSIS	1.9 089 074 94	0.0339 69215	SOCS1/MX1/IRF1/STAT2/IFITM1/TAP1/MED14/TYK2/PTPN2/JAK2/IFNAR1/OAS1/IRF9/STAT1/PIAS1/IFNGR2
WP_NANOPARTICLEMEDIATED_ACTIVATION_OF_RECEPTOR_SIGNALING	1.9 072 391 64	0.0250 51994	COL1A1/FN1/AREG/MAPK13/PIK3CD/ITGB1/TLN1/ITGA1/PXN
WP_EPITHELIAL_TO_MESENCHYMAL_TRANSITION_IN_COLORECTAL_CANCER	1.9 033 728 61	0.0212 71459	DLK1/CLDN23/FZD1/FN1/CLDN4/SNAI2/SHC1/WNT3A/FZD7/TWIST2/TGFBR2/CLDN19/ITGA5/NOTCH3/FZD8/LATS2/COL4A1/COL4A2/FZD5/NRP2/MAPK13/TGFB2/CLDN24/CLDN1/PIK3CD/MMP9/CLDN3/TGFB1/TWIST1/NOTCH2/JUP/CLDN18/GDF15/TGFB3/CDH2/CLDN7/FZD10/HIF1A/FOXC2/FZD2/SMAD3/CLDN14/CLDN2/FZD4/MAP2K3/DLL4/CTDSP1/FZD6/PKD1/TRAF6/JAG1/MAPK14
KEGG_B_CELL_RECEPTOR_SIGNALING_PATHWAY	1.9 026 021 39	0.0198 64398	CR2/LILRB3/FCGR2B/PIK3CG/NFATC4/PIK3CD/PIK3AP1/PIK3R5/RAC2/FOS/VAV1/DAPP1/CD72/SYK/NFATC2/INPP5D/PLCG2/VAV2/NFKB1/JUN/LYN/CARD11/IFITM1/MALT1/PTPN6/NFKBIA/NFATC1/NFAT5/NFATC3
WP_PHOTODYNAMIC_THERAPYINDUCED_HIF1_SURVIVAL_SIGNALING	1.9 012 135 42	0.0198 64398	PTGS2/SERPINE1/NOS2/SLC2A3/IGFBP3/BCL2A1/VEGFA/TGFB3/MCL1/ARNT/IGFBP1/HIF1A/SLC2A1/ANGPT1/ANGPT2/PMAIP1/PFKL/TP53/HK1
WP_VITAMIN_D_IN_INFLAMMATORY_DISEASES	1.9 005 660 87	0.0335 62823	VDR/IL6/DUSP1/NFKB1/NFKBIA/SMAD3/NFATC1/MED14/MAP2K3/MAPK14/RXRRA/IKBKB
WP_MESODERMAL_COMMITMENT_PATHWAY	1.8 977	0.0208 68055	GATA6/HMGA2/DKK1/FOXA1/INHBA/EOMES/ADAM19/KLF5/WNT3A/BHLHE40/GATA3/ZIC5/FZD8/FZD5/ZIC2/FOXA2/YAP1/ARID5B/TBX1/FGFR1/LEF1/MIR200A/ATP8B2/RARG/ELK4/SRF/TRIM5/AHDC1/ZFH4/KLF4/PLC

	957 92		H1/FOXC2/SMAD1/SMAD3/FZD4/POU5F1/MACF1/FOXC1/TWGS1/HAND1/WDHD1/ASCC3/TEAD1/JAK2/KDM6A/EXT1/FOXH1/NCAPG2/BCORL1/CEP250/EXT2/SNAI1/SLC2A12/UBR5/LEFTY2/AEBP2/PRKACA/C6orf201
REACTOME_RUNX2_REGULATES_BONE_DEVELOPMENT	1.8 962 319 38	0.0198 64398	COL1A1/RUNX2/GLI3/GLI2/YAP1/WWTR1/SATB2/SMAD1/MAF/ZNF521
PID_CD40_PATHWAY	1.8 947 891 38	0.0198 64398	TNFAIP3/BIRC3/JAK3/STAT5A/CD40LG/MAP3K14/TRAF1/NFKB1/CD40/JUN/NFKBIA/TRAF3/TRAF6/MAPK14/FAMR
WP_TRANSCRIPTION_FACTOR_REGULATION_IN_ADIPOGENESIS	1.8 942 029 73	0.0335 62823	IL6/LEP/CEBPB/CEBPD/TWIST1/IRS1/NRIP1/PCK2/IRS2/FOXO1
BIOCARTA_STEM_PATHWAY	1.8 927 949 51	0.0198 64398	CSF2/CSF3/IL6/CXCL8/IL11/CD4/CSF1
WP_CANONICAL_AND_NONCANONICAL_TGFB_SIGNALING	1.8 890 614 66	0.0239 69653	LOX/LOXL4/LOXL1/LOXL2/TGFBR2/BMP1/TGFB1
REACTOME_TCR_SIGNALING	1.8 879 105 58	0.0198 64398	ITK/TRAV29DV5/CD3E/TRAV8-4/GRAP2/TRAV19/PTPN22/LCK/CD3G/TRBV7-9/TRAT1/PTPRC/TRBV12-3/HLA-DQA1/FYB1/ZAP70/LCP2/CD4/HLA-DQB2/HLA-DQA2/HLA-DQB1/WAS/INPP5D/PLCG2/HLA-DPA1/CD3D/NFKB1/CD247/CARD11/MALT1/VASP/HLA-DRB1/NFKBIA/PTPRJ/HLA-DPB1/PSME4/PLCG1
KEGG_AUTOIMMUNE_THYROID_DISEASE	1.8 868 380 53	0.0198 64398	FASLG/CTLA4/PRF1/IL10/CD80/HLA-DQA1/CD28/HLA-DOA/HLA-DQA2/HLA-DQB1/CD40LG/GZMB/HLA-DPA1/HLA-C/CD40/HLA-B/HLA-DRB1/HLA-F/HLA-DPB1/IFNA5/IFNA14/HLA-E/CD86/FAS/HLA-DMA
BIOCARTA_CD40_PATHWAY	1.8 863	0.0198 64398	TNFAIP3/DUSP1/CD40LG/MAP3K14/NFKB1/CD40/NFKBIA/TRAF3/TRAF6/IKKB

	210 19		
REACTOME_THE_ACTIVATION_OF_ARYLSULFATASES	1.8 858 840 13	0.0239 07265	ARSI/ARSJ/ARSD/STS/ARSF/ARSG/ARSB/SUMF1/ARSL/ARSA
PID_PDGFBRB_PATHWAY	1.8 850 670 53	0.0198 64398	SHC1/LCK/LRP1/ITGB3/IQGAP1/PIK3R6/PIK3CG/GRB10/ARPC1B/PIK3CD/PIK3R5/SLA/FOS/BLK/STAT5A/PDGFRB/SIPA1/HCK/VAV2/RPS6KA3/ACTN4/STAT3/SFN/PRKCD/SRF/JUN/LYN/ACTA2/ARAP1/WASF2/PTPRJ/MYOCD/PLCG1/PTPN2/FGR/TAGLN/JAK2/SPHK1/RASA1/CBL/ACTR2/STAT1/ITGAV/PDGFB/ABL1/PTPN1/DOCK4/BRAF/PTEN/PIK3CA/WASL/SOS1/DOK1/PRKCA/DNM2/CTTN/PIK3CB/ACTR3/GRB2/EPS8/STAT5B/AFDN
REACTOME_ACYL_CHAIN_REMODELLING_OF_PI	1.8 840 548 31	0.0239 69653	PLA2R1/PLA2G2A/PLA2G2F/PLBD1/PLA2G4E/PLA2G5/PLA2G2D/MBOAT7/PLA2G4D/PLA2G4F
REACTOME_TOLL_LIKE_RECEPTOR_4_TLR4_CASCADE	1.8 839 807 3	0.0198 64398	LBP/BIRC3/NOD2/ITGAM/TICAM2/TLR6/SAA1/TLR2/MAP3K8/ITGB2/NFKB2/CD14/TLR1/FOS/IRAK3/CD36/DUSP4/SOCS1/TICAM1/IKBKE/CD180/PLCG2/IRAK2/NFKB1/RIPK3/RPS6KA3/CASP8/MYD88/RIPK1/JUN/NFKBIA/S100A12/TRAF3/LY96/DUSP6/MAP2K3/IRF7/SFTPA1/TRAF6/MEF2A/DUSP3/TLR4/MAPKAPK2/MAPK14/TIRAP/IRAK1/BPI/BTK
BIOCARTA_HIVNEF_PATHWAY	1.8 836 950 02	0.0198 64398	FASLG/BIRC3/TNFRSF1B/LMNA/MAP3K14/TRAF1/NFKB1/CASP8/CASP7/RIPK1/PRKCD/CFLAR/TNFRSF1A/CASP2/NFKBIA/MAP3K5/FAS/RASA1/PRKDC/ARHGDI3/CDK11A/CASP6/GSN/TRADD/NUMA1/BCL2/CASP3/TNFR2/TRAF2/RELA/XIAP/PAK2/LMNB2/CDK11B/FADD/APAF1
WP_ARYL_HYDROCARBON_RECEPTOR_PATHWAY	1.8 836 870 42	0.0198 64398	CYP1B1/MYOF/SERPINB2/IFNG/JUNB/ALDH3A1/IL1B/IL12B/TGFB1/ARNT/JUN/CES3/IGFBP1/EP300/MGST1/GSTA2/NFE2L2/IL2/HES1/UGT1A1/UGT1A7/NCOA1
WP_TRANSCRIPTION_COFACTORS_SKI_AND_SKIL_PROTEIN_PARTNERS	1.8 834 455 93	0.0239 69653	LATS2/TEAD3/MERTK/SKI/SATB2/TEAD1/SIN3A/TEAD4/STK3/LATS1/MECP2
REACTOME_SMOOTH_MUSCLE_CONTRACTION	1.8 826	0.0198 64398	MYL10/VCL/ACTG2/CALD1/MYL7/ITGB5/TLN1/ANXA2/MYL9/ITGA1/DYSF/TPM2/PXN/TPM4/ACTA2/MYH11/ANXA1

	004 79		
WP_ESTROGEN_RECEPTOR_PATHWAY	1.8 817 715 24	0.0239 07265	CYP1B1/PCK1/ESR1/STAT3/JUN/SP1
WP_MAMMARY_GLAND_DEVELOPMENT_PATHWAY_PUBERTY_STAGE_2_OF_4	1.8 810 368 58	0.0239 07265	FN1/AREG/TIMP1/FOSL1/ERBB2/ESR1/EGF/STAT5A/NRIP1/VIM
REACTOME_RIPK1_MEDIATED_REGULATED_NECROSIS	1.8 807 537 2	0.0329 21564	FASLG/BIRC3/TNFRSF10A/MLKL/TNFRSF10B/RIPK3/CASP8/RIPK1/TNFSF10/CFLAR
REACTOME_DISEASES_ASSOCIATED_WITH_O_GLYCOSYLATION_OF_PROTEINS	1.8 805 707 36	0.0198 64398	THBS1/SBSPON/MUCL1/SPON2/ADAMTS1/ADAMTS2/MUC3A/ADAMTS14/ADAMTS3/ADAMTSL4/ADAMTS12/ADAMTSL1/NOTCH3/ADAMTS9/MUC1/ADAMTSL5/NOTCH2/ADAMTS16/GALNT12/GALNT3/THBS2/ADAMTS4/CFP/ADAMTS13/ADAMTS7
WP_IL3_SIGNALING_PATHWAY	1.8 803 880 84	0.0198 64398	CXCL8/CSF2RB/SHC1/CCR3/PIK3CD/FOS/VAV1/TGFB1/STAT5A/SYK/HCK/INPP5D/STAT3/JUN/LYN/PTPN6/JAK2/CD86
BIOCARTA_IL10_PATHWAY	1.8 786 281 02	0.0239 07265	IL6/IL10/IL10RA/STAT5A/IL1A/HMOX1/STAT3/IL10RB/STAT1
PID_CMYB_PATHWAY	1.8 783 040 25	0.0198 64398	COL1A2/PTGS2/ANPEP/BIRC3/GATA3/IQGAP1/LYZ/CEBPB/PIM1/CEBPD/CD4/ELANE/LEF1/CSF1R/ZFH3/LECT2/CDKN1A/TFEC/SPI1/SKI/SP1/CDK6/MAF/EP300/KITLG/SIN3A/GSTM1/SMARCA2/PIAS3/CDKN2A/PRTN3/GATA1/WNT1/CA1/SND1/CD34/CASP6/CREBBP/MCM4/TAB2/HES1/NCOR1/ADORA2B/BCL2/ETS2
REACTOME_INTERLEUKIN_6_SIGNALING	1.8 779	0.0239 07265	IL6/SOCS3/IL6R/STAT3/TYK2/JAK2/CBL/STAT1/IL6ST

	984 33		
PID_TNF_PATHWAY	1.8 728 168 63	0.0198 64398	TNFAIP3/BIRC3/TNFRSF1B/NRK/CAV1/TRAF1/NFKB1/CASP8/RIPK1/TNFRSF1A/MAP3K3/MAP2K3/RFFL/MAP3K5/ADAM17/SQSTM1/STAT1/IKKBK/NSMAF/CYLD/MAP4K2/TRADD/TAB2/MAP3K7/SMPD1
KEGG_APOPTOSIS	1.8 714 437 41	0.0198 64398	IL1R1/FASLG/CSF2RB/BIRC3/TNFRSF10C/TNFRSF10A/TNFRSF10D/NTRK1/PIK3CG/PIK3CD/PIK3R5/IL1B/IL1RAP/IRAK3/TNFRSF10B/IL1A/IRAK2/MAP3K14/NFKB1/CASP8/MYD88/CASP7/RIPK1/TNFRSF10/CFLAR/CASP10/TNFRSF1A/NFKBIA
REACTOME_O_GLYCOSYLATION_OF_TSR_DOMA IN_CONTAINING_PROTEINS	1.8 704 358 03	0.0198 64398	THBS1/SBSPON/SPON2/ADAMTS1/ADAMTS2/ADAMTS14/ADAMTS3/ADAMTSL4/ADAMTS12/ADAMTSL1/ADAMTSL9/ADAMTSL5/ADAMTS16/THBS2/ADAMTS4/CFP/ADAMTS13/ADAMTS7
WP_INTERFERON_TYPE_I_SIGNALING_PATHWAY S	1.8 703 779 33	0.0198 64398	SOCS3/LCK/PTPRC/PIK3CD/REL/ZAP70/VAV1/STAT5A/SOCS1/IRS1/IRS2/STAT3/STAT2/PTPN6/TYK2/MAP2K3/IFNAR1/PIAS3/MAPK14/CBL/IRF9/STAT1/RPS6KA4
REACTOME_ACYL_CHAIN_REMODELLING_OF_PC	1.8 682 412 03	0.0198 64398	PLA2R1/PLA2G2A/PLA2G2F/PLBD1/PLA2G4E/PLB1/PLA2G5/PLA2G2D/LPCAT3/PLA2G4D/PLA2G4F/PLA2G4B/LPCAT1
REACTOME_RUNX2_REGULATES_OSTEOLAST_ DIFFERENTIATION	1.8 667 532 67	0.0247 7454	COL1A1/RUNX2/GLI3/YAP1/WWTR1/SATB2/MAF/ZNF521
REACTOME_NCAM1_INTERACTIONS	1.8 656 553 6	0.0198 64398	COL6A5/COL6A3/COL5A1/COL6A2/COL3A1/COL6A1/COL5A2/ST8SIA4/COL4A1/COL4A2/COL5A3/ARTN
WP_GASTRIN_SIGNALING_PATHWAY	1.8 643	0.0198 64398	PTGS2/SERPINE1/CXCL8/MMP7/BIRC3/SHC1/SERPINE2/EGR1/CD44/RHOD/HDC/CLDN1/FOS/ITGB1/ANXA2/VEGFA/SLC9A1/HDAC7/IRS1/CDKN1A/NFKB1/STAT3/FOXO1/PRKCD/JUN/PXN/KLF4/SP1/PRKD2/NFKBIA/RO

	497 4		CK1/FOXO3/PLCG1/JAK2/JAG1/ARHGEF28/MAPK14/CDKN2A/SLC9A3/PRKCH/MAP3K11/PRKACA/IKBKB/PPARG/MEF2D
WP_NOVEL_INTRACELLULAR_COMPONENTS_OF_RIGILIKE_RECEPTOR_RLR_PATHWAY	1.8 640 767 85	0.0198 64398	CXCL8/MAPK13/IFNG/CXCL12/IKBKE/STING1/IFNE/NFKB1/CXCL10/CASP8/RIPK1/CASP10/NFKBIA/TRAF3/NLRX1/DDX58/IFIH1/IRF7/MAVS/TRAF6/TRIM25/DHX58/MAPK14/DDX3X/IFNB1/IKBKB/CYLD
REACTOME_DISEASES_OF_METABOLISM	1.8 615 662 75	0.0268 29213	THBS1/KERA/SBSPON/LUM/CYP1B1/SDC1/MUCL1/SPON2/ADAMTS1/ADAMTS2/CSF2RB/B4GALT1/CYP4F22/MUC3A/ADAMTS14/HSPG2/BGN/ADAMTS3/ADAMTSL4/ADAMTS12/ADAMTSL1/NOTCH3/GPC4/SLC34A2/CHSY1/ADAMTS9/MUC1/SLC26A2/GAA/ADAMTSL5/NOTCH2/GUSB/SLC35D1/ADAMTS16/OGN/GNS/GALNT12/HGSNAT/GALNT3/HEXB/THBS2/CTSA/LCT/PAPSS2/MAT1A/MGAT2/OPLAH/GPC1/GBE1/GCLM/GALNS/ADAMTS4/TBXAS1/GPC5/CFP/ADAMTS13/HLCS/SFTP/SGSH/GYS1/MTR/ADAMTS7/AGRN/PRELP/CYP24A1/CUBN/SDC2/FMOD/SFTP/CHST14/MUC13/GPC6/VCAN/ARSB/SDC4/EXT1/DCN/CHST3
REACTOME_IL_6_TYPE_CYTOKINE_RECEPTOR_LIGAND_INTERACTIONS	1.8 609 269 25	0.0239 69653	IL31RA/LIF/IL11/CLCF1/OSMR/OSM
PID_HNF3A_PATHWAY	1.8 587 263 36	0.0198 64398	GCG/FOXA1/SERPINA1/APOB/C4BPB/FOXA2/FOXA3/CEBPB/COL18A1/FOS/ESR1/NRIP1/NKX3-1/JUN/NFIC/SP1/NR2F2/EP300/SFTP/PRDM15/BRCA1/AP1B1/NCOA3/TFF1/AR/SHH
WP_APOPTOSISRELATED_NETWORK_DUE_TO_ALTERED_NOTCH3_IN_OVARIAN_CANCER	1.8 586 308 93	0.0198 64398	THBS1/IL7R/SOCS3/BCL3/IER3/ERN1/YBX3/TNFRSF10B/CDKN1A/TRAF1/NRG1/NFKB1/CASP7/F2R/VIM/HSPA5/HELLS/HSPB1/SQSTM1/CTNNA1/CARD14/ABL1/APP/AKT1/CUL1/PTK2B
WP_NAD_METABOLISM_SIRTUINS_AND_AGING	1.8 551 887 67	0.0239 07265	ROS1/NAMPT/NFKB1/FOXO1/HIF1A/FOXO3
REACTOME DISSOLUTION_OF_FIBRIN_CLOT	1.8 537 572 48	0.0239 07265	SERPINE1/PLAUR/SERPINB2/PLAU/ANXA2/SERPINB8

BIOCARTA_ASBCCELL_PATHWAY	1.8 520 303 24	0.0239 07265	FASLG/IL10/CD80/CD28/CD4/CD40LG/CD40/HLA-DRB1/FAS/HLA-DRA/IL2
BIOCARTA_MAPK_PATHWAY	1.8 517 725 89	0.0198 64398	SHC1/MAPK13/TGFB2/MAP3K8/MAP3K6/FOS/TGFB1/MAP4K1/MAP3K14/TGFB3/NFKB1/MKNK2/RPS6KA3/RI PK1/MAPK4/JUN/SP1/MKNK1/NFKBIA/MAP3K3/MAP2K3/MAP3K12/MAP3K5/MAPKAPK2/MAPK14/STAT1/MAP 3K2/MAP3K11/RPS6KA4/IKBKB/MAP4K2/TRADD/RPS6KA1/MAPK7/TGFBR1/MAP3K7/GRB2/RPS6KA2/MAX/T RAF2/RPS6KB1/RELA/PAK2/MAPKAPK3
WP_AOPOPTOSIS	1.8 517 309 26	0.0198 64398	FASLG/BIRC3/TNFRSF1B/PRF1/IRF4/CASP4/TNFRSF10B/IRF1/GZMB/TRAF1/NFKB1/MCL1/CASP8/CASP7/RI PK1/JUN/CASP1/TNFSF10/CFLAR/CASP10/TNFRSF1A/CASP2/IRF6/NFKBIA/TRAF3/HELLS/BCL2L11/PMAIP1/ LTA/IRF7/IRF5/FAS/TP63/CDKN2A/IGF1R/TP53/SCAF11/IRF2/IKBKB/TNFRSF25/AKT1/CASP6/TRADD/IGF1
WP_EPO_RECEPTOR_SIGNALING	1.8 515 075 2	0.0198 64398	CISH/PTPRU/SHC1/PTPRC/PIK3CG/STAT5A/SOCS1/IRS1/IRS2/STAT3
REACTOME_GP1B_IX_V_ACTIVATION_SIGNALLIN G	1.8 448 529 48	0.0239 07265	COL1A1/COL1A2/FLNA/GP1BA/VWF
ST_B_CELL_ANTIGEN_RECEPTOR	1.8 442 957 64	0.0198 64398	PI3/SHC1/PIK3CD/NFKB2/VAV1/SYK/PLCG2/NFKB1/LYN/NFKBIA/NFAT5/BTK/DAG1/AKT1/PIK3CA/TONSL/BL NK/SOS1/ITPKB/GRB2/CD19/CSK
BIOCARTA_P53HYPOXIA_PATHWAY	1.8 438 028 23	0.0510 20408	HIC1/IGFBP3/FHL2/CDKN1A/HSPA1A/HIF1A/GADD45A/TAF1/EP300/TP53/ATM/AKT1/DNAJB1
WP_SMALL_CELL_LUNG_CANCER	1.8 418 814 44	0.0198 64398	PTGS2/LAMB1/LAMA3/NOS2/ITGA2/LAMA2/FN1/BIRC3/LAMC1/ITGA3/LAMC2/CDKN2B/COL4A1/COL4A2/LAM A4/LAMA1/PIK3CD/GADD45B/ITGB1/LAMB2/TRAF5/LAMA5/CDKN1A/TRAF1/NFKB1/CASP8/LAMC3/CDK6/NFK BIA/TRAF3/GADD45A

PID_INTEGRIN_A4B1_PATHWAY	1.8 417 127 76	0.0198 64398	THBS1/FN1/ITGA4/JAML/VCAM1/CD14/ITGB1/TLN1/THBS2/ADAM28/ARF6/PXN/SPP1
WP_LEPTIN_SIGNALING_PATHWAY	1.8 414 662 31	0.0198 64398	LEP/IL1RN/CISH/SHC1/SOCS3/ERBB2/REL/IL1B/ESR1/PLCG2/IRS1/NFKB1/STAT3/FOXO1/NOS3/SP1/ACACB/ROCK1/ROCK2/PLCG1/JAK2/MAPK14/STAT1/IKKBK/PTPN1/SOCS2/AKT1/RPS6KA1/PTEN/PRKAA1
WP_FAS_LIGAND_FASL_PATHWAY_AND_STRESS_INDUCTION_OF_HEAT_SHOCK_PROTEINS_HSP_REGULATION	1.8 410 368 94	0.0198 64398	FASLG/MIR34C/IL1A/LMNA/CASP8/CASP7/JUN/CFLAR/CASP10/HSPB1/FAS/MAPKAPK2/ACTA1/PRKDC/ARHGDIB/CASP6/BCL2/MAP3K7/ACTB/NFX1/CASP3/TNF/PAK2/MAPKAPK3/LMNB2/FADD/APAF1
WP_NETRINUNC5B_SIGNALING_PATHWAY	1.8 408 370 49	0.0198 64398	COL1A1/ICAM1/SELE/CCL2/ITGB4/YAP1/VCAM1/IL10/CCN2/INPP5D/IL1A/JUN/NEO1/CDH5/UNC5B/DCSTAMP/KDR/MAPK14/ARHGEF12/TP53
REACTOME_TRAF3_DEPENDENT_IRF_ACTIVATION_PATHWAY	1.8 391 550 63	0.0239 07265	IKBKE/RNF135/TRAF3/DDX58/IFIH1/EP300/IRF7/MAVS/TRIM25/IFNB1/CREBBP
REACTOME_REGULATION_BY_C_FLIP	1.8 390 659 57	0.0239 07265	FASLG/TNFRSF10A/TNFRSF10B/CASP8/RIPK1/TNFSF10/CFLAR/FAS
REACTOME_NUCLEOTIDE_BINDING_DOMAIN_LEUCINE_RICH_REPEAT_CONTAINING_RECEPTOR_NLR_SIGNALING_PATHWAYS	1.8 371 548	0.0198 64398	TNFAIP3/MEFV/BIRC3/NOD2/MAPK13/NFKB2/NLRC4/CASP4/NLRP3/IRAK2/NFKB1/CASP8/CARD9/PSTPIP1/CASP1/CASP2/AIM2/TRAF6/MAPK14/IRAK1/TAB3/IKKBK/CYLD/APP/TAB2/BCL2/MAP3K7/PYCARD/UBC
BIOCARTA_CYTOKINE_PATHWAY	1.8 348 503 29	0.0329 21564	IL6/CXCL8/IFNG/IL10/IL15/IL1A/IL16
REACTOME_INTERLEUKIN_21_SIGNALING	1.8 347	0.0239 07265	IL21R/JAK3/IL2RG/STAT5A/STAT3



	274 61		
WP_INTERLEUKIN11_SIGNALING_PATHWAY	1.8 272 984 12	0.0198 64398	IL11/ICAM1/ITGA2/SOCS3/RUNX2/IBSP/FES/TGFB1/STAT3/TYK2/JAK2/PIAS3/STAT1/IKBKB/AKT1/IL6ST/RPS6KA1/BCL2/PIAS1
KEGG_PRION_DISEASES	1.8 271 911 18	0.0198 64398	IL6/LAMC1/EGR1/IL1B/CCL5/C5/C7/IL1A/C1QC/C1QA/C1QB/HSPA1A/HSPA5/C8A
KEGG_VIRAL_MYOCARDITIS	1.8 252 376 56	0.0198 64398	ICAM1/LAMA2/MYH9/PRF1/MYH4/CD80/ITGB2/HLA-DQA1/CD28/HLA-DOA/RAC2/ITGAL/HLA-DQA2/HLA-DQB1/CAV1/CD40LG/ABL2/HLA-DPA1/HLA-C/CASP8/CD40/HLA-B/HLA-DRB1/DMD/MYH11/HLA-F/HLA-DPB1/HLA-E/EIF4G1/CD55/CD86/HLA-DMA/HLA-DOB/HLA-G/MYH3/ABL1/HLA-DRA/DAG1
REACTOME_MUCOPOLYSACCHARIDOSES	1.8 239 513 79	0.0323 06543	GUSB/GNS/HGSNAT/GALNS/SGSH/ARSB/GLB1/IDUA
WP_PROTEOGLYCAN_BIOSYNTHESIS	1.8 216 939 21	0.0239 69653	CHSY1/SLC26A2/PAPSS2/EXTL3/XYL2/CHST14/CANT1/EXT1/CHST3/EXT2/SLC35B3
WP_METABOLIC_PATHWAY_OF_LDL_HDL_AND_TRIGLUCERIDES_INCLUDING_DISEASES	1.8 202 217 31	0.0198 64398	LIPG/APOA2/APOB/LDLR/ABCA1/ANXA2/LPL/MTTP
PID_ARF6_TRAFFICKING_PATHWAY	1.8 175 232 78	0.0198 64398	IL2RA/ITGA2/ITGA11/ITGA4/ITGA3/ITGA5/ITGA10/ITGB1/AGTR1/ITGA1/ASAP2/ARF6/ITGA7/ITGA9/ACAP1/CTNND1/ADRB2/PLD2/CTNNA1/ITGA8/ITGAV/SCAMP2
PID_REG_GR_PATHWAY	1.8 147	0.0198 64398	CSF2/MMP1/IL6/CXCL8/ICAM1/SELE/GATA3/EGR1/IFNG/NR4A1/FOS/STAT5A/KRT17/FKBP5/FGG/IRF1/CDKN1A/NFKB1/PCK2/SFN/SPI1/JUN/KRT5/NFATC1

	223 76		
BIOCARTA_CSK_PATHWAY	1.8 145 581 24	0.0329 21564	CD3E/LCK/CD3G/PTPRC/ZAP70/CD4/CD3D/CD247/HLA-DRB1
BIOCARTA_RELA_PATHWAY	1.8 133 914 83	0.0239 69653	TNFRSF1B/NFKB1/RIPK1/TNFRSF1A/NFKBIA/EP300/TRAF6/IKBKB/CREBBP/TRADD/TNF/RELA/FADD/IKBKG
REACTOME_O_LINKED_GLYCOSYLATION	1.8 131 096 42	0.0198 64398	THBS1/GALNT5/SBSPON/GCNT1/GALNT4/MUCL1/SPON2/ADAMTS1/ADAMTS2/MUC3A/ADAMTS14/ADAMTS3/B3GNT8/ADAMTSL4/ADAMTS12/ADAMTSL1/ST3GAL1/GALNT2/ADAMTS9/MUC1/ADAMTSL5/GCNT7/ADAMTS16/ST6GALNAC2/GALNT12/B3GNT2/B3GNT5/LARGE2/A4GNT/CHST4/GALNT10/GALNT3/THBS2/B3GNT9/ADAMTS4/CFP/GCNT3/ADAMTS13/B3GALNT2/GALNT6/ADAMTS7
BIOCARTA_IL7_PATHWAY	1.8 130 040 46	0.0198 64398	IL7R/JAK3/LCK/PIK3CG/STAT5A/EP300/NMI/CREBBP/IL7/PTK2B/PIK3CA/BCL2
REACTOME_SHC1_EVENTS_IN_EGFR_SIGNALING	1.8 127 136 65	0.0239 07265	EREG/SHC1/AREG/HBEGF/EGF
REACTOME_NF_KB_ACTIVATION_THROUGH_FADD_RIP_1_PATHWAY_MEDIATED_BY_CASPASE_8_AND_10	1.8 119 837 53	0.0326 9429	RNF135/CASP8/RIPK1/CASP10/DDX58/IFIH1/MAVS/TRIM25/IKBKB
WP_IL6_SIGNALING_PATHWAY	1.8 118 674 03	0.0198 64398	IL6/SHC1/SOCS3/PRDM1/TIMP1/JUNB/IL6R/VAV1/HCK/IRF1/STAT3/PRKCD/CRP/TYK2/JAK2/STAT1/AKT1/CREBBP/IL6ST/NR2F6/MAP3K7/SOS1/NCOA1
SIG_BCR_SIGNALING_PATHWAY	1.8 105	0.0198 64398	ITPR3/CR2/SHC1/PTPRC/PIK3CD/VAV1/SYK/NFATC2/MAP4K1/INPP5D/PLCG2/LYN/ITPR2/NFATC1

	582 31		
WP_NUCLEAR_RECEPTORS_METAPATHWAY	1.8 050 082 42	0.0344 63277	CCL20/TNS4/PTGS2/VDR/CYP1B1/IL11/TNFAIP3/PCK1/SRPX2/THBD/CCL2/ABCB11/BIRC3/SNAI2/MYOF/SER PINA1/APOA2/ABCC3/SERPIN2/EPHA2/SLC2A3/BHLHE40/FGF19/ANGPTL4/CES1/TGFBR2/EGR1/SCNN1A/ ZIC2/TGFB2/SLC39A14/SLC39A8/IFNG/SLCO2B1/RGS2/JUNB/NFKB2/ALDH3A1/CYP4F12/SLC26A2/NR1I2/SL C2A14/SLC2A10/SLC5A3/IL1B/ESR1/IL12B/TGFB1/HBEGF/GADD45B/ALOX5AP/PLTP/SLC2A5/CYP7A1/EPHA 3/SPRY1/AKAP13/B3GNT5/FKBP5/NRIP1/PRRG4/AMIGO2/S100P/NRG1/HMOX1/IRS2/GSTM5/CDC42EP3/STA T3/HSPA1A/SRGN/FOXO1/ARNT/SERPIN9/JUN/SERTAD2/GGT2/CES3/SLC6A6/SP1/GGTLC2/GCLM/GCC1/I GFBP1/PPARD/STOM/SLC2A1/HGF/MAFF/POU5F1/EP300/SREBF1/SLC39A13/GSTM1/SMC1A/SEC14L1/SOD 3/SLC6A14/GPX2/ADGRF4/SPINK13/SQSTM1/MGST1/SLC27A1/NCOA3/RXRA/PLK2/SLC5A10/FGD4/SLC6A16 /GSTA2/SLC5A6/SLC2A12/SLC39A1/SLC39A7/KTN1/CYP8B1/PDK4
PID_EPO_PATHWAY	1.8 020 557 71	0.0263 01824	SHC1/SOCS3/TEC/STAT5A/SH2B3/PLCG2/VAV2/NFKB1/IRS2/LYN/PTPN6/PLCG1/JAK2/MAPK14/BTK/CBL/ST AT1
WP_OXIDATIVE_DAMAGE	1.8 019 224 2	0.0198 64398	C1R/CR2/C5AR1/C1S/TNFRSF1B/MAPK13/C3AR1/C5/CDKN1A/C1QC/TRAF1/NFKB1/C1QA/C1QB/C2/TRAF3/ GADD45A/TRAF6/C4B
WP_BLADDER_CANCER	1.8 012 897 95	0.0198 64398	THBS1/MMP1/CXCL8/TYMP/ERBB2/MMP9/HBEGF/EGF/VEGFA/CDKN1A
PID_FAK_PATHWAY	1.7 967 684 71	0.0198 64398	GRB7/MMP14/ACTN1/ITGA5/VCL/ITGB1/ITGB5/TLN1/JUN/PXN/ROCK2/GIT2/PLCG1/RRAS/ARHGEF28/ACTA1 /ARHGAP26/RASA1/ITGAV/CAPN2/ASAP1/BRAF/PTPN21/PIK3CA/KLF8/WASL/SOS1/ETS1/GRB2/DOCK1
WP_OSTEOCLAST_SIGNALING	1.7 955 264 4	0.0239 69653	TNFSF11/TNFRSF11A/ITGB3/SLC9A1/CTSK/ACP5/GPR68/SPP1/IFNAR1/TNFRSF11B/IFNB1/PDGFB
KEGG_CYTOSOLIC_DNA_SENSING_PATHWAY	1.7 894	0.0198 64398	IL6/IL1B/CCL5/IKBKE/STING1/NFKB1/ZBP1/RIPK3/CXCL10/RIPK1/CASP1/NFKBIA/AIM2/DDX58/IFNA5/IFNA14/ IRF7/MAVS/ADAR/IFNB1/IKBKB

	967 92		
WP_SMALL_LIGAND_GPCRS	1.7 850 783 94	0.0494 51235	PTGER2/PTGFR/PTGER4/MTNR1B/PTGIR/S1PR4/PTAFR/CNR2/CNR1/TBXA2R
WP_AUTOSOMAL_RECESSIVE_OSTEOPETROSIS_PATHWAYS	1.7 839 811 56	0.0323 06543	TNFSF11/TCIRG1/TNFRSF11A/NFKB1/TRAF6/IKBKB/CLCN7/PLEKHM1
WP_HIPPOYAP_SIGNALING_PATHWAY	1.7 830 014 89	0.0514 04272	LATS2/NDRG1/TEAD3/MAP4K1/CXCL10/TEAD1/TEAD4/STK3/MAP4K2/LATS1/SAV1/MST1/MINK1/YY1AP1/RA SSF1/NF2/TEAD2/MAP4K4
WP_DEVELOPMENT_OF_PULMONARY_DENDRITIC_CELLS_AND_MACROPHAGE_SUBSETS	1.7 829 355 44	0.0321 50097	CSF2/RUNX2/IKZF1/IRF4/CSF1/STAT3/SPI1/IRF8/FLT3LG
BIOCARTA_RANKL_PATHWAY	1.7 821 758 12	0.0321 50097	TNFSF11/FOSL2/TNFRSF11A/FOSL1/FOS/NFKB1/IFNAR1/TRAF6/IRF9/IFNB1
KEGG_BLADDER_CANCER	1.7 820 054 75	0.0198 64398	THBS1/MMP1/CXCL8/TYMP/ERBB2/MMP9/VEGFC/EGF/VEGFA/CDKN1A
PID_ANGIOPOIETIN_RECEPTOR_PATHWAY	1.7 809 887 45	0.0198 64398	GRB7/FN1/SHC1/ITGA5/DOK2/FES/ITGB1/STAT5A/AGTR1/CDKN1A/NFKB1/FOXO1/NOS3/PXN/ANGPT1/ANG PT2/MAPK14/RASA1/PLD2/ELF1
PID_NFKAPPAB_CANONICAL_PATHWAY	1.7 806	0.0425 53191	TNFAIP3/NOD2/NFKB1/MALT1/TNFRSF1A/NFKBIA/TRAF6/ATM/BCL10/IKBKB/CYLD/PRKCA/TNF/ERC1/RELA/ IKBKG

	554 67		
ST_P38_MAPK_PATHWAY	1.7 805 320 46	0.0268 62385	IL1R1/MAPK13/DUSP1/NFKB1/MKNK2/SRF/MKNK1/GADD45A/MAP2K3/HSPB1/EEF2K/TRAF6/MAP3K5/MAPK APK2/MAPK14/AKT1/TAB2/CREB5/MAP3K7/NR2C2
KEGG_FC_EPSILON_RI_SIGNALING_PATHWAY	1.7 768 337 92	0.0198 64398	CSF2/PLA2G2A/PLA2G2F/PLA2G4E/PIK3CG/MAPK13/PIK3CD/PIK3R5/LCP2/RAC2/VAV1/SYK/INPP5D/PLCG2/ VAV2/PRKCD/PLA2G5/LYN/FCER1G/PLA2G2D/MAP2K3/JMJD7- PLA2G4B/PLCG1/MAPK14/PLA2G2C/BTK/PLA2G4B/LAT
REACTOME_NCAM_SIGNALING_FOR_NEURITE_O UT_GROWTH	1.7 754 662 68	0.0198 64398	COL6A5/COL6A3/COL5A1/COL6A2/COL3A1/COL6A1/COL5A2/ST8SIA4/COL4A1/COL4A2/FGFR1/SPTA1/COL5 A3/ARTN
KEGG_RENIN_ANGIOTENSIN_SYSTEM	1.7 750 542	0.0239 69653	MME/ANPEP/CTSG/AGTR2/CMA1/AGTR1/CTSA/ACE/LNPEP/ENPEP
BIOCARTA_DEATH_PATHWAY	1.7 745 586 1	0.0253 15243	BIRC3/LMNA/MAP3K14/NFKB1/CASP8/CASP7/RIPK1/TNFSF10/CFLAR/CASP10/NFKBIA/TNFRSF25/CASP6/T RADD/BCL2/GAS2/CASP3/TRAF2/RELA/XIAP/FADD/APAF1
REACTOME_METABOLISM_OF_ANGIOTENSINOGE N_TO_ANGIOTENSINS	1.7 723 825 94	0.0409 72031	MME/ANPEP/CTSG/CTSZ/CMA1/CES1/ACE/GZMH/ENPEP/CTSD
REACTOME_CHONDROITIN_SULFATE_DERMATA N_SULFATE_METABOLISM	1.7 663 856 2	0.0198 64398	SDC1/HSPG2/BGN/CHSY3/DSE/GPC4/CHSY1/CHST13/CHPF2/HEXB/CHST7/GPC1/GPC5/CSGALNACT2/XYL T2/AGRN/SDC2/CHST14/CHPF/GPC6/VCAN/ARSB/SDC4/CHST15/DCN/CHST3/IDUA/HEXA
WP_ROLE_OF_OSX_AND_MIRNAS_IN_TOOTH_DE VELOPMENT	1.7 647 510 55	0.0342 32186	DKK1/RUNX2/MIRLET7G/NOTCH3/MIRLET7F1/NOTCH2/SOST/MIR34AHG/MIRLET7D/KLF4/DMP1/MIRLET7A 1

PID_TXA2PATHWAY	1.7 639 136 76	0.0198 64398	ICAM1/SELE/LCK/PTGIR/PIK3R6/PIK3CG/TGM2/VCAM1/GNA15/PIK3R5/EGF/BLK/PLCB2/SYK/HCK/TBXA2R/PRKCD/GNA14/LYN/NOS3/ROCK1/ARR3/FGR/ARHGEF1/MAPK14/PRKCH/GRK2/PRKACA
REACTOME_CLASS_A_1_RHODOPSIN_LIKE_RECEPTORS_	1.7 598 487 19	0.0330 41667	CCL13/CCL11/CCL20/CXCL13/XCR1/CXCL5/CCR8/CCL7/HCAR3/BDKRB1/FPR2/HCAR2/CCR2/CCR4/CXCR3/PPBP/CXCR1/CXCL8/CXCL3/PTGER2/MC3R/PTGFR/UTS2/CCL23/CXCL1/PTGER4/PROK2/BDKRB2/P2RY10/MTNR1B/CCL2/CXCL2/CCL22/CMKLR1/INSL3/FPR3/GPR39/AGTR2/F2RL1/C5AR1/PROKR1/CXCR5/NPY2R/CCR7/CCR5/HRH2/CCR6/CXCL6/PTGIR/NTS/CXCL9/CCR1/GPR132/LTB4R2/P2RY6/HTR1D/LTB4R/FFAR2/C3/FAR3/GPR18/SAA1/P2RY4/F2RL3/CCR3/CXCR2/GPR31/CXCR6/S1PR4/CXCL12/C5AR2/CCL5/HCRTR1/TAC3/F2RL2/FPR1/HRH1/C3AR1/GPR183/PTAFR/GPBAR1/GRPR/C5/P2RY1/QRFP/CNR2/PYY/XCL2/HTR7/KISS1R/ECE1/SUCNR1/CNR1/AGTR1/OXER1/TBXA2R/OXTR
KEGG_PHENYLALANINE_METABOLISM	1.7 583 158 64	0.0493 48246	ALDH1A3/TAT/ALDH3B2/HPD/ALDH3A1/ALDH3B1/IL4I1/AOC3/MAOB
WP_OSTEOPONTIN_SIGNALING	1.7 577 513 45	0.0321 50097	ITGB3/MMP9/PLAU/MAP3K14/NFKB1/SPP1/ITGAV/IKBKB
PID_IL3_PATHWAY	1.7 554 553 05	0.0425 06812	CSF2RB/CISH/SHC1/CEBPB/PIM1/OSM/STAT5A
WP_EICOSANOID_METABOLISM_VIA_CYCLO_OXYGENASES_COX	1.7 540 419 89	0.0601 02318	PTGS2/PTGFR/PTGES/PTGIS/PTGIR/CYP4F2/PTGS1/CYP4F12/TBXA2R/PLA2G5/ACOX2/PPARD/TBXAS1
REACTOME_INTERLEUKIN_1_FAMILY_SIGNALING	1.7 519 905 27	0.0198 64398	IL36B/IL1R1/IL36RN/CTSG/IL18R1/IL1RN/IL1R2/NOD2/IL36G/ALOX5/PTPN14/SAA1/MAP3K8/PTPN7/IL1RL1/IL1RL2/NFKB2/IL18RAP/IL37/IL1B/IL1RAP/IRAK3/PTPN12/IL1A/IRAK2/NFKB1/STAT3/MYD88/PTPN9/CASP1/PTPN6/NFKBIA/S100A12/IL18BP/MAP3K3/SMAD3/PTPN18
WP_LEPTIN_INSULIN_OVERLAP	1.7 498	0.0493 99482	LEP/SOCS3/PIK3CG/SOCS1/IRS1/IRS2/STAT3/JAK2/INSR/SOCS2/AKT1

	032 06		
KEGG_ADHERENS_JUNCTION	1.7 495 142 34	0.0198 64398	MET/SNAI2/ACTN1/TGFBR2/IQGAP1/ERBB2/FGFR1/VCL/RAC2/LEF1/NECTIN2/WAS/PTPRF/ACTN4/PTPN6/WASF2/PTPRJ/SMAD3/EP300/NECTIN4/CTNND1/INSR/IGF1R/TCF7/SNAI1/CTNNA1/PTPN1/NECTIN3/CREBBP/PARD3/WASL/TGFBR1/MAP3K7/ACTB/TJP1/SSX2IP/FER
BIOCARTA_LLECTIN_PATHWAY	1.7 482 407 66	0.0408 54352	C3/C5/C7/C2/C8A/C4A/C4B/C6
WP_MIRNAS_INVOLVED_IN_DNA_DAMAGE_RESPONSE	1.7 452 738 42	0.0198 64398	MIR23A/MIR222/MIR27A/MIR210/MIRLET7F1/MIR221/MIR34C/CDKN1A/MIR34B/MIR503/MIRLET7D/MIR23B/CDK6/MIR93/MIR106B/MIR27B/MIRLET7A1/TP53/MIR421/ATM/ABL1/CCNE1
WP_SARS_CORONAVIRUS_AND_INNATE_IMMUNITY	1.7 418 116 2	0.0613 40044	TICAM1/IKBKE/STAT2/TRAF3/DDX58/IFNA5/IFNA14/IFIH1/TYK2/IFNAR1/MAVS/TLR3/IRF9/STAT1/IFNB1/IFNA17
REACTOME_GROWTH_HORMONE_RECEPTOR_SIGNALING	1.7 416 713 49	0.0514 04272	PRLR/CISH/SOCS3/STAT5A/SOCS1/IRS1/IRS2/STAT3/LYN/PTPN6/JAK2/ADAM17/GHR/STAT1/PTPN1/SOCS2
BIOCARTA_IL5_PATHWAY	1.7 412 140 36	0.0403 60856	CCL11/IL6/CCR3/IL1B/CD4
PID_TRAIL_PATHWAY	1.7 405 858 47	0.0437 69702	TNFRSF10C/TNFRSF10A/TNFRSF10D/PIK3CD/TNFRSF10B/CASP8/RIPK1/TNFSF10/CFLAR/CASP10
BIOCARTA_TOLL_PATHWAY	1.7 404	0.0587 3494	PGLYRP1/FOS/TLR7/MAP3K14/NFKB1/MYD88/JUN/NFKBIA/MAP2K3/TRAF6/TLR3/MAPK14

	933 46		
WP_EXTRACELLULAR_VESICLEMEDIATED_SIGNALING_IN_RECIPIENT_CELLS	1.7 397 005 11	0.0673 99223	MET/WNT3A/TGFBR2/ERBB2/TGFB2/PIK3R5/TGFB1/TGFB3/SMAD3/HGF
REACTOME_OTHER_SEMAPHORIN_INTERACTIONS	1.7 369 218 32	0.0709 40808	PTPRC/PLXND1/CD72/ITGB1/PLXNA1/ITGA1/PLXNC1/PLXNA4/SEMA6D/PLXNA2/SEMA7A
PID_MYC_REPRESS_PATHWAY	1.7 364 680 17	0.0198 64398	COL1A2/DKK1/ITGB4/CDKN2B/SLC11A1/ERBB2/NDRG1/GFI1/CEBPD/CCL5/DNTT/ITGB1/PDGFRB/ZFP36L1/CDKN1A/SPI1/CFLAR/SP1/GADD45A/SMAD3/FOXO3/EP300/IRF8/DNMT3A/BRCA1
REACTOME_PRE_NOTCH_PROCESSING_IN_GOLGI	1.7 336 205 28	0.0569 34034	B4GALT1/ATP2A3/NOTCH3/FURIN/NOTCH2
REACTOME_PECAM1_INTERACTIONS	1.7 333 167 51	0.0566 90099	LCK/ITGB3/INPP5D/LYN/PECAM1/PTPN6/PLCG1/ITGAV
REACTOME_GRB2_EVENTS_IN_ERBB2_SIGNALING	1.7 330 014 12	0.0328 93039	EREG/ERBB2/HBEGF/EGF/NRG1/BTC
KEGG_RIG_I_LIKE_RECEPTOR_SIGNALING_PATHWAY	1.7 325 117 12	0.0198 64398	CXCL8/MAPK13/IL12B/IKBKE/STING1/IFNE/NFKB1/CXCL10/CASP8/RIPK1/CASP10/NFKBIA/TRAF3/NLRX1/DDX58/IFNA5/IFNA14/IFIH1/IRF7/MAVS/TRAF6/TRIM25/DHX58/MAPK14/DDX3X/IFNB1/IKBKB/CYLD/IFNA17/TRADD
PID_VEGF_VEGFR_PATHWAY	1.7 317	0.0478 75873	NRP1/NRP2/VEGFC/FLT4/VEGFA/FLT1/KDR



	332 37		
WP_MICRORNAS_IN_CARDIOMYOCYTE_HYPERTROPHY	1.7 283 889 48	0.0198 64398	LIF/MIR23A/FZD1/CISH/WNT3A/PLA2G2A/RCAN1/MIR199A1/PIK3CG/NFATC4/PIK3CD/PRKG1/TGFB1/EGF/PLCB2/IKBKE/HDAC7/MAP3K14/NRG1/NFKB1/STAT3/MAPK4/FZD2/ROCK1/MAP2K3/ROCK2/MIR27B/MIR199A2/MAPK14/IGF1R/CAMK2D/CTF1/LRP5/MIR140/IKBKB/AKT1/IL6ST/IGF1/PIK3CA/MIR103A2/MAPK7
REACTOME_GAB1_SIGNALOSOME	1.7 270 442 85	0.0640 13562	EREG/AREG/HBEGF/EGF/PXN/BTC
PID_IL1_PATHWAY	1.7 269 593 48	0.0470 80942	IL1R1/IL1RN/IL1R2/TICAM2/IL1B/IL1RAP/IRAK3/IL1A/NFKB1/MYD88/JUN/CASP1/MAP3K3/TRAF6/IRAK1/SQSTM1
WP_TYPE_III_INTERFERON_SIGNALING	1.7 264 283 13	0.0478 75873	STAT2/IFNLR1/TYK2/IL10RB/IRF9/STAT1/IFNL3
REACTOME_SIGNALING_BY_VEGF	1.7 248 817 03	0.0198 64398	ITPR3/NRP1/SH2D2A/ITGB3/CYBB/NRP2/MAPK13/NCF2/VEGFC/NCKAP1L/VAV1/CAV1/JUP/FLT4/VEGFA/VAV2/NCF1/AXL/PRKCD/FLT1/ITPR2/NOS3/PXN/CDH5/WASF2/ROCK1/PRR5/NCF4/ROCK2/HSPB1/KDR/PLCG1/CTNND1/CYFIP1/SPHK1/MAPKAPK2/MAPK14
REACTOME_CASPASE_ACTIVATION_VIA_EXTRINSIC_APOPTOTIC_SIGNALLING_PATHWAY	1.7 242 612 88	0.0510 20408	FASLG/TNFRSF10A/TICAM2/CD14/TNFRSF10B/TICAM1/CASP8/RIPK1/TNFSF10/CFLAR/UNC5B/LY96/FAS/TLR4
WP_TNF_ALPHA_SIGNALING_PATHWAY	1.7 241 602 77	0.0198 64398	IL6/TNFAIP3/SELE/CCL2/BIRC3/TNFRSF1B/MAP3K8/PYGL/NFKB2/REL/MAP3K14/TRAF1/NFKB1/RIPK3/CASP8/CASP7/RIPK1/JUN/CFLAR/TNFRSF1A/NFKBIA/MAP3K3/MAP2K3/RFFL/MAP3K5/OTUD7B/TAB3/IKBKB/NSMAF/GLUL/MAP4K2/AKT1/CREBBP/CYBA/CUL1/TRADD
BIOCARTA_PML_PATHWAY	1.7 241	0.0640 13562	FASLG/TNFRSF1B/PML/TNFRSF1A/SP100/PRAM1/FAS/TP53/CREBBP

	189 21		
REACTOME_PLASMA_LIPOPROTEIN_CLEARANCE	1.7 210 754 4	0.0550 5033	APOB/LDLR/SOAT2/APOBR/CES3/SOAT1/NPC2/CUBN/HDLBP/APOC4/NPC1/NR1H3/AP2A2/VLDLR/LDLRAP1/AP2A1/APOA1/NCEH1/CLTC
REACTOME_TRAFFICKING_AND_PROCESSING_OF_ENDOSOMAL_TLR	1.7 205 357 44	0.0478 75873	TLR8/CTSB/TLR9/TLR7/CTSS/UNC93B1/CTSK/CTSL/LGMN/TLR3/HSP90B1
WP_NCRNAS_INVOLVED_IN_STAT3_SIGNALING_IN_HEPATOCELLULAR_CARCINOMA	1.7 205 319 05	0.0409 72031	IL6/IL11/JAK3/IL6R/MIR200A/NFKB1/STAT3/MIR200B
PID_P38_ALPHA_BETA_DOWNSTREAM_PATHWAY	1.7 185 181 71	0.0268 29213	PTGS2/NOS2/CEBPB/KRT8/ESR1/SLC9A1/ELK4/JUN/MKNK1/HSPB1/MEF2A/MAPKAPK2/MAPK14/TP53/RPS6KA4
PID_WNT_SIGNALING_PATHWAY	1.7 174 705 4	0.0598 5508	ROR2/DKK1/FZD1/WNT3A/FZD7/FZD8/FZD5/IGFBP4/CTHRC1/FZD10/KREMEN2/FZD2/FZD4/FZD6
REACTOME_INTERLEUKIN_37_SIGNALING	1.7 151 360 35	0.0659 54722	IL18R1/PTPN14/PTPN7/IL37/PTPN12/STAT3/PTPN9/CASP1/PTPN6/IL18BP/SMAD3/PTPN18/PTPN2
WP_WHITE_FAT_CELL_DIFFERENTIATION	1.7 149 041 75	0.0613 9038	KLF5/GATA3/EGR2/CEBPB/CEBPD/IRF4/STAT5A/EBF1/FOXO1/KLF4/RORA/NR2F2/SREBF1/MECOM/CTNNA1/PPARG
BIOCARTA_CTCF_PATHWAY	1.7 143	0.0512 81056	TGFBR2/PIK3CG/TGFB2/TGFB1/TGFB3/SMAD1/CDKN2A/TP53/PTEN/CD79A/PIK3CA/TGFB1/MTOR/TGFBR3

	500 69		
REACTOME_DECTIN_2_FAMILY	1.7 141 192 2	0.0587 3494	CLEC4D/CLEC10A/MUCL1/CLEC6A/MUC3A/MUC1/SYK/PLCG2/LYN/FCER1G
REACTOME_NOD1_2_SIGNALING_PATHWAY	1.7 139 971 93	0.0474 36268	TNFAIP3/BIRC3/NOD2/MAPK13/CASP4/IRAK2/CASP8/CARD9/CASP1/CASP2/TRAF6/MAPK14/IRAK1/TAB3/IKBKB/CYLD/TAB2/MAP3K7/UBC
PID_HIF2PATHWAY	1.7 136 066 07	0.0640 13562	SERPINE1/MMP14/BHLHE40/TWIST1/VEGFA/EPAS1/CITED2/ARNT/FLT1/SP1/SLC2A1/POU5F1/EP300/KDR
REACTOME_TP53_REGULATES_TRANSCRIPTION_OF_CELL_DEATH_GENES	1.7 124 476 69	0.0268 29213	TNFRSF10C/STEAP3/TNFRSF10A/IGFBP3/TNFRSF10D/NDRG1/NLRC4/TNFRSF10B/PERP/CASP1/AIFM2/CASP10/CASP2/PIDD1/BCL6/PMAIP1/FAS/TP63/TP53/ATM/CASP6/CREBBP/CHM/BCL2L14
REACTOME_SIGNALING_BY_ERYTHROPOIETIN	1.7 075 532 78	0.0587 3494	SHC1/PIK3CG/PIK3CD/PIK3R5/VAV1/STAT5A/PLCG2/IRS2/LYN/PLCG1/JAK2
WP_KIT_RECEPTOR_SIGNALING_PATHWAY	1.7 059 833 92	0.0198 64398	GRB7/SNAI2/SHC1/TEC/GRB10/JUNB/FOS/VAV1/STAT5A/SOCS1/INPP5D/RPS6KA3/STAT3/LYN/PTPN6/FOXO3/EP300/PLCG1/KITLG/JAK2/MAPK14/TBX2/BTK/CBL/SNAI1/STAT1/AKT1/RPS6KA1/BCL2/SOS1/DOK1/PRKCA/GRB2/STAT5B/SOCS6
KEGG_ACUTE_MYELOID_LEUKEMIA	1.7 048 003 52	0.0198 64398	RUNX1/PIK3CG/PIM1/PIK3CD/FLT3/PIK3R5/PML/LEF1/STAT5A/JUP/NFKB1/STAT3/SPI1/PPARD/TCF7/ARAF1/IKBKB/AKT1/BRAF/RUNX1T1/PIK3CA/SOS1/MTOR/PIK3CB/GRB2/STAT5B/RPS6KB1/RELA/ZBTB16/AKT2
REACTOME_REGULATION_OF_IFNG_SIGNALING	1.7 032	0.0556 80599	SOCS3/IFNG/SOCS1/PTPN6/PTPN2/JAK2/STAT1/PTPN1/PIAS1/IFNGR2

	132 76		
WP_IL9_SIGNALING_PATHWAY	1.7 030 367 25	0.0640 13562	IL9R/JAK3/IL2RG/STAT5A/STAT3
REACTOME_CARGO_CONCENTRATION_IN_THE_ER	1.7 027 051 88	0.0550 5033	CTSZ/SERPINA1/AREG/COL7A1/CTSC/SEC24D/CNIH3/LMAN1
REACTOME_REGULATION_OF_IFNA_SIGNALING	1.7 020 234 32	0.0587 3494	SOCS3/SOCS1/STAT2/PTPN6/IFNA5/IFNA14/TYK2/IFNAR1/STAT1/USP18/IFNB1/PTPN1/IFNA17
BIOCARTA_TPO_PATHWAY	1.7 009 019 84	0.0512 81056	SHC1/PIK3CG/FOS/STAT5A/STAT3/JUN/PLCG1/JAK2/THPO/RASA1/STAT1/PIK3CA/SOS1/PRKCA/GRB2/STAT5B
BIOCARTA_CARDIACEGF_PATHWAY	1.7 008 976 09	0.0569 34034	ADAM12/AGTR2/FOS/EGF/NFKB1/JUN/EDNRA/PLCG1
BIOCARTA_INTEGRIN_PATHWAY	1.7 008 020 64	0.0640 13562	SHC1/ACTN1/VCL/ITGB1/CAV1/ZYX/TLN1/JUN/TNS1/ROCK1
PID_BETA_CATENIN_NUC_PATHWAY	1.6 991 221 44	0.0198 64398	DKK1/CXCL8/CCN1/SNAI2/IGF2BP1/CDX1/TBXT/SALL4/ADCY7/MMP9/MDFIC/LEF1/TRRAP/TLE1/SFN/KRT1/JUN/KLF4/TBL1X/EP300/TERT/VCAN/CDKN2A/MED12/TCF7/TLE4/AR/CACNA1G/CHD8/BCL9/MMP2/CUL1
WP_NONGENOMIC_ACTIONS_OF_125_DIHYDROXYVITAMIN_D3	1.6 974	0.0198 64398	VDR/IL6/CXCL8/CCL2/NOD2/TLR8/MAPK13/IFNG/TLR2/RELB/NFKB2/CAMP/CAV1/PLCB2/CD40LG/PLCG2/NFKB1/STAT2/CD40/PRKCD/JUN/OAS2/TNFRSF1A/SP1/PLCE1/TYK2/CYP24A1/PLCB3/TLR4/MAPK14/RSAD2/RXRA/CAMK2D/PRKCH/STAT1/IKBKB

	979 18		
REACTOME_TP53_REGULATES_TRANSCRIPTION_OF_DEATH_RECEPTORS_AND_LIGANDS	1.6 959 586 93	0.0637 97265	TNFRSF10C/TNFRSF10A/IGFBP3/TNFRSF10D/TNFRSF10B/FAS/TP63/TP53
REACTOME_PLATELET_AGGREGATION_PLUGIN_FORMATION_	1.6 912 298 91	0.0367 9435	COL1A1/COL1A2/FN1/SHC1/ITGB3/SYK/TLN1/FGG/GP1BA/VWF/ADRA2A/RASGRP1/APBB1IP/THPO/ITGA2B
WP_METASTATIC_BRAIN_TUMOR	1.6 908 573 89	0.0840 30052	MIRLET7G/MIRLET7F1/MIR34C/MIR148A/MIR34B/MIRLET7D/CDK6/MIRLET7A1/TP53
BIOCARTA_FAS_PATHWAY	1.6 882 029 35	0.0746 67504	FASLG/LMNA/CASP8/CASP7/JUN/CFLAR/CASP10/FAS/PRKDC/ARHGDIB/CASP6/MAP3K7/CASP3/PTPN13/PAK2/LMNB2/FADD
REACTOME_ANTIMICROBIAL_PEPTIDES	1.6 879 824 54	0.0198 64398	PI3/CCR2/BPIFB4/EPPIN/LCN2/CTSG/PLA2G2A/LTF/CCR6/SLC11A1/PGLYRP1/RNASE7/LYZ/DEFA4/TLR2/S100A8/S100A9/TLR1/CAMP/CD4/ELANE/DEFB110/ITLN1/RNASE3/DEFA3/BPIFB2
REACTOME_ESTROGEN_DEPENDENT_NUCLEAR_EVENTS_DOWNSTREAM_OF_ESR_MEMBRANE_SIGNALING	1.6 876 043 73	0.0591 31299	EREG/AREG/FOS/HBEGF/EGF/SRF/BTC/FOXO3/UHMK1/AKT1/EPGN/BCL2
PID_AR_PATHWAY	1.6 836 720 37	0.0198 64398	SVIL/LATS2/FHL2/NRIP1/NKX3-1/RPS6KA3/CASP8/SRF/HIP1/CDK6/TGFB111/CTDSP1/TMPRSS2/PIAS3/CDKN2A/BRCA1/PRKDC/AR/TMF1/AKT1/ZNF318/CARM1/PTK2B/GSN/RANBP9/UBE3A/VAV3/KDM4C/PIAS1/KDM3A/PAWR/TGIF1/NCOA6
REACTOME_RIP_MEDIATED_NFKB_ACTIVATION_VIA_ZBP1	1.6 817	0.0640 13562	NFKB2/TICAM1/NFKB1/ZBP1/RIPK3/MYD88/RIPK1/NFKBIA/TLR3/IKBKB

	800 01		
REACTOME_MYD88_INDEPENDENT_TLR4_CASCA DE_	1.6 810 514 17	0.0198 64398	BIRC3/NOD2/TICAM2/SAA1/MAP3K8/NFKB2/CD14/FOS/DUSP4/TICAM1/IKBKE/IRAK2/NFKB1/RIPK3/RPS6KA 3/CASP8/RIPK1/JUN/NFKBIA/S100A12/TRAF3/LY96/DUSP6/MAP2K3/IRF7/TRAF6/MEF2A/DUSP3/TLR4/MAPK APK2/MAPK14/IRAK1
PID_HIV_NEF_PATHWAY	1.6 809 875 94	0.0647 1415	FASLG/BIRC3/MAP3K14/TRAF1/NFKB1/CASP8/CASP7/RIPK1/CD247/CFLAR/TNFRSF1A/CASP2/NFKBIA/MAP 3K5/FAS
ST_GA13_PATHWAY	1.6 804 229 09	0.0471 49758	PI3/CFB/NFKB2/TBXA2R/NFKB1/SRF/NFKBIA/ROCK1/ROCK2/MAP3K5/PHKA2/PLD2/AKT1/BCL2/TONSL/GNA 13/PIK3CB/PLD3/AKT2/PDPK1/IKBKG/PRKD1
WP_IL17_SIGNALING_PATHWAY	1.6 800 412 14	0.0897 61391	CEBPB/CEBPD/IL17RA/MAP3K14/NFKB1/STAT3/SP1/IL25/TRAF3/JAK2/TRAF6/TRAF3IP2/IL17RC/IKBKB/AKT1 /PIK3CA/MAP3K7
KEGG_GLYCOSAMINOGLYCAN_BIOSYNTHESIS_C HONDROITIN_SULFATE	1.6 786 230 52	0.0659 54722	CHSY3/DSE/CHSY1/CHST13/CHPF2/CHST7/CSGALNACT2/XYL2/CHST14/CHPF/CHST15/CHST3
PID_TELOMERASE_PATHWAY	1.6 781 174 15	0.0198 64398	IFNG/FOS/ESR1/TGFB1/EGF/WT1/IRF1/NFKB1/JUN/ZNF1/SMG6/SP1/SMAD3/NR2F2/MXD1/HUS1/SIN3A/TE RT/SIN3B/ATM/ABL1/PINX1/AKT1/SP3/RAD50/IL2/WRN/UBE3A/SMG5/MTOR/RAD9A/TNKS/MAX/HDAC1/NCL/ RPS6KB1/BLM/POT1
WP_IL1_SIGNALING_PATHWAY	1.6 767 377 81	0.0279 9647	IL1R1/CCL2/REL/IL1B/IL1RAP/IRAK3/IL1A/IRAK2/MAP3K14/NFKB1/MYD88/JUN/NFKBIA/MAP3K3/MAP2K3/PL CG1/TRAF6/MAPKAPK2/MAPK14/IRAK1/SQSTM1/TAB3/MAP3K2/IKBKB
PID_ATF2_PATHWAY	1.6 753	0.0198 64398	IL6/CXCL8/NOS2/SELE/SOCS3/COL24A1/TGFB2/IFNG/JUNB/ARG1/PLAU/FOS/ESR1/DUSP1/DUSP5/JUN/SER PINB5/GADD45A/EP300/ATF3/IL23A/MAPK14/BRCA1

	777 49		
WP_PDGF_PATHWAY	1.6 746 678 08	0.0551 24569	SHC1/FOS/VAV1/PDGFRB/VAV2/NFKB1/STAT3/SRF/JUN/NFKBIA/PLCG1/PDGFA/RASA1/STAT1/PDGFB/WAS L/SOS1/TIAM1/GRB2
NABA_ECM_AFFILIATED	1.6 736 809 8	0.0224 08304	REG1A/LGALS7/CD209/REG1B/FCN1/CLEC4D/CLEC10A/FCN2/MUC22/SDC1/MUCL1/CLEC6A/COLEC12/LGALS14/MUC3A/MUC2/LGALS12/C1QTNF6/C1QTNF1/ANXA8/GPC4/SEMA3A/PLXND1/ITLN2/CLEC5A/MUC1/PLXNB2/C1QL4/FREM1/CLEC2B/PLXDC2/PLXNA1/LGALS9C/CLEC7A/ANXA2/PLXDC1/SEMA3F/ITLN1/LMAN1/C1QC/PLXNA3/C1QA/GRIFIN/C1QB/GPC1/LGALS3/C1QTNF7/C1QTNF9/CLEC4M/GPC5/PLXNC1/SFTPB/LGALS8/SDC2/ANXA1/LGALS2/PLXNA4/ANXA4/SFTPA1/MUC13/GPC6/SEMA6D/SEMA3C/SDC4
BIOCARTA_UCALPAIN_PATHWAY	1.6 736 559 88	0.0623 79275	ACTN1/ITGB3/ITGB1/TLN1
PID_IL2_PI3K_PATHWAY	1.6 717 402 27	0.0720 49114	IL2RA/IL2RB/SHC1/JAK3/LCK/IL2RG/UGCG/NFKB1/FOXO3/TERT/EIF3A/AKT1/IL2/PIK3CA/BCL2/SMPD1/SOS1/MTOR/GRB2
WP_EICOSANOID_SYNTHESIS	1.6 696 084 32	0.0587 3494	PTGS2/PTGES/PLA2G2A/PTGIS/PTGS1/ALOX5/ALOX5AP/ALOX15B/PLA2G5/GGT2/GGTLC2/TBXAS1
WP_PHOTODYNAMIC_THERAPYINDUCED_NFE2L2_NRF2_SURVIVAL_SIGNALING	1.6 678 932 3	0.0737 34576	ABCC3/CES1/MAPK13/FOS/HMOX1/JUN/GCLM/MAPK14/ABCC6/SRXN1/NFE2L2
WP_HYPERTROPHY_MODEL	1.6 674 233 61	0.0956 44376	CCN1/IL1R1/IFNG/HBEGF/VEGFA/IL1A/NR4A3/ADAM10/ATF3
REACTOME_SEMAPHORIN_INTERACTIONS	1.6 673	0.0198 64398	MET/NRP1/MYH9/PTPRC/ERBB2/SEMA3A/PLXND1/FES/CD72/ITGB1/PLXNA1/TLN1/MYL9/LIMK1/ITGA1/PLXNA3/MYH11/ROCK1/PLXNC1/ROCK2/PLXNA4/RRAS/SEMA6D/LIMK2

	641 85		
BIOCARTA_PPARA_PATHWAY	1.6 673 536 79	0.0370 73784	PTGS2/NOS2/APOA2/PIK3CG/DUSP1/STAT5A/NRIP1/HSPA1A/CITED2/JUN/SP1/NFKBIA/LPL/EP300/PDGFA/RXRA/NCOR2/CREBBP/PIK3CA/NCOR1/NR1H3/PPARA/NCOA1/PRKCA/APOA1/STAT5B/TNF/PPARGC1A/RELA/PRKAR2A/MED1
WP_DEREGULATION_OF_RAB_AND_RAB_EFFECTOR_GENES_IN_BLADDER_CANCER	1.6 672 080 78	0.0706 69489	MLPH/RAB27A/SYTL1/SYTL5/UNC13D/SYTL4/SYTL3
REACTOME_TRANSCRIPTIONAL_ACTIVITY_OF_SMAD2_SMAD3_SMAD4_HETEROTRIMER	1.6 667 457 98	0.0367 9435	SERPINE1/CDKN2B/ATP1B4/WWTR1/JUNB/SKI/SP1/SMAD3/USP9X/NCOR2/CCNK/CCNT1/TFDP1/NCOR1/RNF111/UBC/SMURF2/TGIF1/RBL1/HDAC1/TGIF2/MEN1
REACTOME_SHC1_EVENTS_IN_ERBB4_SIGNALING	1.6 654 977 3	0.0623 79275	EREG/SHC1/HBEGF/NRG1/BTC
WP_ARYL_HYDROCARBON_RECEPTOR_NETPATH	1.6 637 143 81	0.0268 29213	PTGS2/CYP1B1/PLAGL1/ESR1/CD36/VEGFA/NRIP1/KLF6/CDKN1A/NFKB1/ARNT/LPL/EP300
WP_IL5_SIGNALING_PATHWAY	1.6 628 233 19	0.0367 9435	CSF2RB/SHC1/PIK3CG/FOS/STAT5A/SYK/STAT3/JUN/LYN/FOXO3/JAK2/BTK/SPRED1/STAT1/AKT1/RPS6KA1/IL2/BCL2/SOS1/GRB2/STAT5B
REACTOME_IRE1ALPHA_ACTIVATES_CHAPERONES	1.6 618 708 92	0.0272 67569	KDEL3/SHC1/PDIA5/CUL7/WIP1/ERN1/TPP1/TLN1/EDEM1/LMNA/DNAJC3/HSPA5/FKBP14/EXTL3/SRPRAP/DIA6/PLA2G4B/SSR1/SEC31A/SYVN1
ST_T_CELL_SIGNAL_TRANSDUCTION	1.6 613	0.0467 42785	ITK/GRAP2/LCK/CTLA4/PTPRC/NFKB2/CD28/ZAP70/LCP2/VAV1/RASGRP4/CD3D/NFKB1/NFKBIA/NFAT5/RASGRP1/PLCG1



	020 26		
BIOCARTA_SODD_PATHWAY	1.6 605 559 29	0.0688 31826	BIRC3/TNFRSF1B/CASP8/RIPK1/TNFRSF1A
PID_EPHA_FWDPATHWAY	1.6 594 833 1	0.0864 18308	EPHA2/LCK/PIK3R6/PIK3CG/EPHA1/PIK3R5/EFNA5/BLK/EPHA3/HCK/VAV2/LYN/ROCK1/PLCG1/FGR/ARHGE F15/EPHA4/CBL
PID_VEGFR1_PATHWAY	1.6 585 144 89	0.0659 54722	NRP1/NRP2/CAV1/CD2AP/VEGFA/FLT1/NOS3/HIF1A/PLCG1/RASA1/CBL/PRKACA/AKT1/PIK3CA
WP_HEDGEHOG_SIGNALING_PATHWAY_NETPAT H	1.6 584 766 75	0.0706 69489	GLI1/GLI3/GLI2/DHH/STK36/SMO/SIN3A/PTCH2/GRK2/SHH/KIF7
KEGG_VEGF_SIGNALING_PATHWAY	1.6 583 708 59	0.0198 64398	PTGS2/SH2D2A/PLA2G2A/PLA2G2F/PLA2G4E/PIK3CG/MAPK13/NFATC4/PIK3CD/PIK3R5/RAC2/VEGFA/NFAT C2/PLCG2/PLA2G5/NOS3/PXN/PLA2G2D/NFATC1/NFAT5/JMJD7- PLA2G4B/NFATC3/HSPB1/KDR/PLCG1/SPHK1/MAPKAPK2/MAPK14/PLA2G2C
BIOCARTA_41BB_PATHWAY	1.6 537 431 03	0.0838 13349	TNFRSF9/IFNG/NFKB1/JUN/NFKBIA/MAP3K5/MAPK14/IKBKB/IL2
REACTOME_INTERLEUKIN_12_FAMILY_SIGNALIN G	1.6 509 584 49	0.0198 64398	SOD2/SERPINB2/CNN2/LCP1/IFNG/IL10/IL12B/MSN/ANXA2/IL27RA/STAT3/IL12RB1/P4HB/IL27/TYK2/JAK2/IL2 3A/IL23R/MTAP/GSTA2/CA1/STAT1/EBI3/CAPZA1/IL6ST
PID_NFKAPPAB_ATYPICAL_PATHWAY	1.6 498	0.0706 69489	BCL3/LCK/REL/SYK/NFKB1/NFKBIA/MAPK14/IKBKB/PIK3CA

	365 58		
KEGG_ABC_TRANSPORTERS	1.6 468 933 84	0.0367 9435	ABCA13/ABCB11/ABCC3/ABCB5/ABCA6/ABCA7/ABCA1/ABCA12/ABCA8/ABCA9/ABCD1/ABCC9/ABCC1/TAP1/ABCA4
BIOCARTA_SPRY_PATHWAY	1.6 467 406 25	0.0777 27317	SHC1/SPRY4/EGF/SPRY1/SPRY2/RASA1/CBL
BIOCARTA_MET_PATHWAY	1.6 453 750 9	0.0783 39041	MET/PIK3CG/FOS/ITGB1/MAP4K1/STAT3/JUN/HGF/ACTA1/RASA1/PTK2B/PTEN/PIK3CA/SOS1/GRB2/DOCK1
PID_ECADHERIN_KERATINOCYTE_PATHWAY	1.6 439 919 15	0.0799 96349	FMN1/CASR/ZYX/JUP/AJUBA/VASP/PLCG1/CTNND1/CTNNA1/AKT1/PIK3CA/PIP5K1A
REACTOME_REGULATION_OF_TLR_BY_ENDOGENOUS_LIGAND	1.6 412 938 67	0.0839 21264	LBP/APOB/TLR6/TLR2/S100A8/CD14/S100A9/TLR1/CD36/FGG/LY96/SFTPA1/TLR4
WP_IL7_SIGNALING_PATHWAY	1.6 409 817 16	0.0659 54722	IL2RA/IL7R/JAK3/IL2RG/STAT5A/STAT3
REACTOME_CHONDROITIN_SULFATE_BIOSYNTHESIS	1.6 394 771 26	0.1007 42695	BGN/CHSY3/CHSY1/CHST13/CHPF2/CHST7/CSGALNACT2/CHPF/VCAN/CHST15/DCN/CHST3
REACTOME_TYPE_I_HEMIDESMOSOME_ASSEMBLY	1.6 387	0.0940 88644	LAMA3/ITGB4/LAMC2/KRT5/PLEC/LAMB3/CD151/COL17A1

	886 2		
REACTOME_SEMA3A_PLEXIN_REPULSION_SIGNALLING_BY_INHIBITING_INTEGRIN_ADHESION	1.6 362 369 98	0.0752 8481	NRP1/SEMA3A/FES/PLXNA1/TLN1/PLXNA3/PLXNA4/RRAS
REACTOME_INTERLEUKIN_35_SIGNALLING	1.6 359 094 12	0.0836 15978	IL27RA/STAT3/TYK2/JAK2/STAT1/EBI3/IL6ST/CANX
BIOCARTA_IL3_PATHWAY	1.6 351 249 09	0.0776 31216	CSF2RB/SHC1/FOS/STAT5A/PTPN6/JAK2
WP_STRUCTURAL_PATHWAY_OF_INTERLEUKIN_1_IL1	1.6 330 728 35	0.0272 67569	IL1R1/MAP3K8/FOS/IL1RAP/IL1A/IRAK2/MAP3K14/NFKB1/MKNK2/MYD88/MKNK1/NFKBIA/MAP3K3/MAP2K3/IRF7/TRAF6/MAPKAPK2/MAPK14/IRAK1/TAB3/IKBKB
BIOCARTA_TFF_PATHWAY	1.6 323 486 94	0.0864 18308	SHC1/MUC2/TFF3/PIK3CG/ERBB2/ITGB1
BIOCARTA_GSK3_PATHWAY	1.6 316 218 02	0.1007 42695	LBP/FZD1/LEF1/NFKB1/MYD88
REACTOME_FOXO_MEDIATED_TRANSCRIPTION_OF_OXIDATIVE_STRESS_METABOLIC_AND_NEURONAL_GENES	1.6 310 744 97	0.0943 86035	RETN/SOD2/PCK1/ABCA6/FBXO32/TRIM63/FOXO1/IGFBP1/SMAD3/FOXO3/PLXNA4/SREBF1/SIN3A
BIOCARTA_ARAP_PATHWAY	1.6 292	0.0838 13349	CYTH4/ASAP2/ARAP1/ARAP2/CYTH3/ARFGEF1/ARFGEF2/ASAP1

	871 22		
REACTOME_CONSTITUTIVE_SIGNALING_BY_ABE RRANT_PI3K_IN_CANCER	1.6 272 870 98	0.0198 64398	EREG/ICOS/MET/AREG/LCK/FGF19/TRAT1/FGF10/ERBB2/FGFR1/CD80/PIK3CD/CD28/PIK3AP1/RAC2/ESR1/ ESR2/VAV1/HBEGF/EGF/PDGFRB/IRS1/NRG1/IRS2/FGF5/KL/HGF/BTC/KITLG/PDGFA/CD86
WP_ACE_INHIBITOR_PATHWAY	1.6 247 075 74	0.0838 13349	BDKRB1/CTSG/BDKRB2/AGTR2/CMA1/TGFB1/AGTR1/ACE/NOS3
REACTOME_DDX58_IFIH1_MEDIATED_INDUCION _OF_INTERFERON_ALPHA_BETA	1.6 229 720 67	0.0198 64398	TNFAIP3/SAA1/NFKB2/NLRC5/IKBKE/NFKB1/RNF135/CASP8/RIPK1/UBA7/CASP10/NFKBIA/S100A12/TRAF3/ NLRX1/DDX58/RNF216/IFNA5/IFNA14/IFIH1/EP300/IRF7/MAVS/TRAF6/TRIM25/DHX58/HERC5/IFNB1/IKBKB/C YLD/APP/CREBBP/IFNA17
REACTOME_RORA_ACTIVATES_GENE_EXPRESSI ON	1.6 215 909 75	0.0838 13349	HELZ2/RORA/TBL1X/EP300/SREBF1/RXRA/CREBBP/CARM1/CPT1A/PPARA/NCOA1/NCOA6/MED1/TGS1
BIOCARTA_D4GDI_PATHWAY	1.6 215 086 32	0.0948 21802	PRF1/GZMB/CASP8/JUN/CASP1/CASP10
REACTOME_ACYL_CHAIN_REMODELLING_OF_PE	1.6 205 087 99	0.0831 17236	PLA2R1/PLA2G2A/PLA2G2F/PLBD1/MBOAT1/PLA2G4E/PLA2G5/PLA2G2D/LPCAT3/PLA2G4D/PLA2G4F
PID_NECTIN_PATHWAY	1.6 196 340 13	0.0943 86035	ITGB3/IQGAP1/CLDN1/PDGFRB/NECTIN2/TLN1/VAV2/PVR/F11R/CTNNA1/ITGAV/PDGFB/NECTIN3/PIK3CA
REACTOME_OVARIAN_TUMOR_DOMAIN_PROTEA SES	1.6 192	0.0799 96349	TNFAIP3/NOD2/TNIP3/ESR1/RNF135/RIPK1/TRAF3/DDX58/IFIH1/MAVS/TRAF6/TRIM25/TP53/OTUD7B/TNIP1/ OTUD3

	787 4		
REACTOME_UNFOLDED_PROTEIN_RESPONSE_UPR_	1.6 191 323 93	0.0198 64398	CXCL8/KDEL3/CCL2/SHC1/PDIA5/CEBPB/CUL7/CREB3L1/WIPI1/ERN1/TPP1/TLN1/EDEM1/CREB3L2/LMNA/DNAJC3/IGFBP1/HSPA5/FKBP14/EXTL3/SRPRA/DCSTAMP/PDIA6/ATF3/HSP90B1/PLA2G4B/CALR/SSR1/EIF2S3/SEC31A/SYVN1/ATF6/HYOU1/EIF2AK3/PARN/MBTPS2
REACTOME_SIGNALING_BY_ERBB2_IN_CANCER	1.6 166 172 28	0.0729 37146	EREG/SHC1/ERBB2/HBEGF/EGF/PTPN12/NRG1/BTC/PLCG1/ERBIN
REACTOME_FOXO_MEDIATED_TRANSCRIPTION	1.6 146 157 91	0.0198 64398	RETN/FASLG/SOD2/PCK1/ABCA6/CAV1/FBXO32/CDKN1A/TRIM63/SFN/FOXO1/CITED2/KLF4/IGFBP1/GADD45A/SMAD3/BCL6/BCL2L1/FOXO3/EP300/PLXNA4/SREBF1/SIN3A
REACTOME_PI3K_AKT_SIGNALING_IN_CANCER	1.6 127 510 26	0.0198 64398	EREG/ICOS/MET/AREG/LCK/FGF19/TRAT1/FGF10/ERBB2/FGFR1/CD80/PIK3CD/CD28/PIK3AP1/NR4A1/RAC2/ESR1/ESR2/VAV1/HBEGF/EGF/PDGFRB/IRS1/CDKN1A/NRG1/IRS2/FOXO1/FGF5/KL/HGF/BTC/PRR5/FOXO3/KITLG/PDGFA/CD86
WP_SIGNALING_OF_HEPATOCYTE_GROWTH_FACTOR_RECEPTOR	1.6 106 112 23	0.0864 18308	MET/FOS/ITGB1/MAP4K1/ITGA1/STAT3/JUN/PXN/HGF/RASA1/PTK2B/PTEN/PIK3CA/SOS1/GRB2/DOCK1
REACTOME_SIGNALING_BY_EGFR_IN_CANCER	1.6 083 039 61	0.0928 57143	EREG/SHC1/AREG/HBEGF/EGF
REACTOME_OTHER_INTERLEUKIN_SIGNALING	1.6 080 645 29	0.0933 82007	CSF3/SDC1/CSF3R/CD4/CSF1R/CSF1/STXBP2/IL16/IFNLR1/TYK2/IL32/IL10RB/PRTN3/TXLNA
WP_FGF23_SIGNALLING_IN_HYPOPHOSPHATEMIC_RICKETS_AND_RELATED_DISORDERS	1.6 075	0.0928 57143	ROS1/FAM20C/NFKB2/ENPP1/GALNT3/CDKN1A/NFKB1/SLC34A3/KL/SPP1/CYP24A1/DMP1

	456 83		
REACTOME_ACYL_CHAIN_REMODELLING_OF_PG	1.6 069 387 07	0.0895 49328	PLA2R1/PLA2G2A/PLA2G2F/PLA2G5/PLA2G2D/PLA2G4D/PLA2G4F/PLA2G4B/LPCAT1
BIOCARTA_ETS_PATHWAY	1.6 058 568 49	0.0838 13349	FOS/CSF1R/CSF1/JUN/SIN3A/ETV3/SIN3B/NCOR2/ETS2/ETS1/RBL1
KEGG_TGF_BETA_SIGNALING_PATHWAY	1.6 052 087 66	0.0198 64398	THBS1/FST/INHBA/LTBP1/TGFBR2/COMP/CDKN2B/THBS3/TGFB2/IFNG/INHBE/GDF5/TGFB1/THBS2/TGFB3/ NHBB/SP1/BMP5/ACVRL1/SMAD1/ROCK1/SMAD3/ROCK2/EP300
REACTOME_INTERLEUKIN_7_SIGNALING	1.6 052 058 5	0.0864 18308	IL7R/CISH/TSLP/JAK3/IL2RG/CRLF2/STAT5A/SOCS1/IRS1/RAG1/IRS2/STAT3
REACTOME_SHC1_EVENTS_IN_ERBB2_SIGNALIN G	1.6 049 262 85	0.0928 57143	EREG/SHC1/ERBB2/HBEGF/EGF/PTPN12/NRG1/PRKCD/BTC
WP_ECTODERM_DIFFERENTIATION	1.6 021 359 26	0.0199 95966	GATA6/ROR2/TFAP2C/CCL2/KRT6A/STC1/GLI3/ST8SIA4/ELOVL2/FZD8/FHL2/FZD5/MAFB/FOXA2/ARX/PIM1/ TRPM2/PLCXD3/FOXL1/MIR34C/RRBP1/BOC/EDA2R/JUP/ZBTB7B/PODXL/TSKU/CDH6/SPRY2/ZFH4/DMD/S ORCS1/PPARD/POU2F2/NFATC1/FZD4/NR2F2/TBL1X/CCDC88C/ZBTB2/WDR44/SMURF1/GLB1/CDON/TNFR SF11B/BAZ1A/LY6E/WNT1/C1GALT1/EDA/PLXNA2/SHH/SDCBP/MZF1/HDAC10/SOCS2/ARHGAP10
WP_PDGFREBETA_PATHWAY	1.6 019 805 71	0.0951 25409	SHC1/STAT6/FOS/STAT5A/PDGFRB/STAT3/SRF/JUN/PLCG1/JAK2/RASA1/STAT1/PIK3CA/SOS1/PRKCA/GRB 2/STAT5B
BIOCARTA_ARF_PATHWAY	1.6 012	0.0838 13349	PIK3CG/TWIST1/CDKN2A/TBX2/TP53/ABL1/PIK3CA/POLR1A

	362 17		
BIOCARTA_TGFB_PATHWAY	1.6 008 643 14	0.1007 42695	TGFBR2/TGFB2/TGFB1/TGFB3/SMAD3/EP300/CREBBP/TGFBR1/MAP3K7
KEGG_DORSO_VENTRAL_AXIS_FORMATION	1.6 003 004 12	0.0987 99784	NOTCH3/PIWIL1/ETV7/NOTCH2/ETV6/PIWIL4/PIWIL2/ETS2/SOS1/NOTCH4/ETS1/SPIRE1/GRB2
PID_S1P_S1P1_PATHWAY	1.5 995 804 78	0.1040 64039	PTGS2/ITGB3/PLCB2/PDGFRB/VEGFA/ABCC1/KDR/PLCG1/SPHK1/ITGAV/PDGFB
WP_NCRNAS_INVOLVED_IN_WNT_SIGNALING_IN_HEPATOCELLULAR_CARCINOMA	1.5 995 473 03	0.0198 64398	ROR2/SFRP2/DKK1/SFRP4/FZD1/WNT3A/FZD7/FZD8/FOSL1/FZD5/ROR1/PLAU/LEF1/SERPINF1/SOST/SFRP5/JUN/FZD10/KLF4/DKK2/FZD2/NKD2/CER1/FZD6
PID_ALK1_PATHWAY	1.5 988 709 08	0.0859 72	INHBA/TGFBR2/TGFB1/ENG/CAV1/TGFB3/ACVRL1/SMAD1
WP_MAMMARY_GLAND_DEVELOPMENT_PATHWAY_INVOLUTION_STAGE_4_OF_4	1.5 980 024 55	0.1259 11878	SOCS3/CHI3L1/MMP9/STAT3
WP_EICOSANOID_METABOLISM_VIA_LIPO_OXYGENASES_LOX	1.5 966 288 44	0.0951 25409	FPR2/TRPA1/LTB4R2/CYP4F2/LTB4R/ALOX5/CYP4F12/TRPV1/ALOX15B/ACOX2/PPARD/CYSLTR1/GGT5
REACTOME_GPCR_LIGAND_BINDING	1.5 961	0.0459 01829	CCL13/CCL11/CCL20/CXCL13/XCR1/CXCL5/CCR8/CCL7/ADGRE3/GNGT1/HCAR3/BDKRB1/FPR2/HCAR2/CCR2/CCR4/CXCR3/PPBP/CXCR1/CXCL8/CXCL3/PTGER2/MC3R/PTGFR/UTS2/CCL23/CXCL1/GCG/GIP/PTGER4/FZD1/PROK2/BDKRB2/P2RY10/MTNR1B/CCL2/CXCL2/CCL22/ADGRE2/CMKLR1/INSL3/FPR3/GPR39/WNT3

	097 88		A/AGTR2/F2RL1/C5AR1/PROKR1/CXCR5/NPY2R/CCR7/CCR5/HRH2/CCR6/CXCL6/FZD7/PTGIR/NTS/CXCL9/CCR1/GPR132/ADGRE1/LTB4R2/P2RY6/HTR1D/FZD8/LTB4R/FZD5/FFAR2/C3/FFAR3/GPR18/SAA1/P2RY4/TAS2R60/F2RL3/CCR3/CXCR2/GPR31/CXCR6/S1PR4/ADM/TAS2R40/CXCL12/C5AR2/CCL5/HCRTR1/CALCR/TAC3/F2RL2/FPR1/CASR/HRH1/C3AR1/GPR183/PTAFR/GPBAR1/DHH/GRPR/C5/P2RY1/QRFP/CNR2/PYY/XCL2/HTR7/KISS1R/ECE1/SUCNR1/CNR1/AGTR1/OXER1/TBXA2R/OXTR/ADGRE5
PID_CXCR3_PATHWAY	1.5 960 978 68	0.0551 24569	CCL11/CXCL13/CXCR3/CXCL9/ITGB2/PIK3CD/ITGAL
WP_BILE_ACIDS_SYNTHESIS_AND_ENTEROHEPATIC_CIRCULATION	1.5 939 042 09	0.1001 45581	SLC10A2/ABCB11/FGF19/LDLR/CYP7A1
WP_SRF_AND_MIRS_IN_SMOOTH_MUSCLE_DIFFERENTIATION_AND_PROLIFERATION	1.5 932 644 8	0.1001 45581	MIR199A1/SRF/KLF4/MYOC/MEF2A/CAMK2D/MEF2D/MEF2B
PID_CASPASE_PATHWAY	1.5 923 679 78	0.0475 07788	KRT18/BIRC3/PRF1/CASP4/LMNA/GZMB/LIMK1/CASP8/CASP7/RIPK1/VIM/CASP1/CASP10/TNFRSF1A/CASP2/PIDD1/SREBF1/ACTA1/ARHGDI1/APP/CASP6/GSN/TRADD/TOP1/NUMA1/BCL2
WP_PEPTIDE_GPCRS	1.5 906 464 76	0.0198 64398	CCR8/BDKRB1/FPR2/CCR2/CCR4/CXCR3/CXCR1/MC3R/BDKRB2/FPR3/AGTR2/C5AR1/CXCR5/NPY2R/CCR7/CCR5/CCR6/CCR1/CCR3/CXCR2/CXCR6/HCRTR1/FPR1/C3AR1/GRPR/AGTR1/OXTR
KEGG_FC_GAMMA_R_MEDIATED_PHAGOCYTOSIS	1.5 900 878 5	0.0198 64398	FCGR2C/FCGR2A/FCGR2B/PLA2G4E/PTPRC/PIK3CG/ARPC1B/DOCK2/FCGR3A/PIK3CD/PIK3R5/SCIN/RAC2/VAV1/SYK/WAS/HCK/INPP5D/PLCG2/VAV2/LIMK1/NCF1/ASAP2/PRKCD/LYN/ARF6/VASP/WASF2/PLA2G4D/PLCG1/PLA2G4F/FCGR1A/LIMK2/SPHK1/PLA2G4B/PLD2/LAT/ASAP3/ASAP1/AKT1/GSN/VAV3/PIK3CA/PIP5K1A/WASL/PIKFYVE
BIOCARTA_FREE_PATHWAY	1.5 897 391 54	0.1259 11878	XDH/CXCL8/NFKB1



REACTOME_KERATAN_SULFATE_KERATIN_META BOLISM	1.5 869 437 15	0.1001 45581	KERA/LUM/B4GALT1/ST3GAL1/CHST2/OGN/GNS/B3GNT2/HEXB/GALNS/PRELP/FMOD/B3GNT3/B4GALT5/G LB1/HEXA
BIOCARTA_IGF1_PATHWAY	1.5 859 025 53	0.1105 71081	SHC1/PIK3CG/FOS/IRS1/SRF/JUN/IGF1R/RASA1/IGF1/PIK3CA/SOS1/GRB2
ST_PHOSPHOINOSITIDE_3_KINASE_PATHWAY	1.5 837 888 69	0.0938 73927	SHC1/TEC/S100A9/DAPP1/INPP5D/RPS6KA3/SFN/FOXO1/IGFBP1/CYTH3/CD55/CDKN2A/BTK/AKT1/RPS6KA 1/PTEN/PIK3CA/SOS1/GRB2/RPS6KA2/RPS6KB1/AKT2/PDPK1
BIOCARTA_RNA_PATHWAY	1.5 832 716 75	0.1259 11878	MAP3K14/DNAJC3/NFKB1/NFKBIA/TP53
ST_JNK_MAPK_PATHWAY	1.5 820 504 82	0.1001 45581	PAPPA/IL1R1/SHC1/DUSP4/JUN/MAP3K20/GADD45A/MAP3K3/NFATC3/MAP3K12/TRAF6/MAP3K5/TP53/MAP 3K2/MAP3K11/AKT1/TAB2/MAPK7/MAP3K7/NR2C2/DLD
REACTOME_FORMATION_OF_FIBRIN_CLOT_CLOT TING_CASCADE_	1.5 818 323 83	0.0938 73927	F13A1/CD177/THBD/A2M/PF4V1/SERPING1/PROS1/F3/FGG/F11/GP1BA/VWF/F2R/PF4/KLKB1
REACTOME_SIGNAL_ATTENUATION	1.5 815 589 66	0.1259 11878	SHC1/GRB10/IRS1/IRS2/INSR/SOS1/GRB2
WP_ENVELOPE_PROTEINS_AND_THEIR_POTENTI AL_ROLES_IN_EDMD_PHYSIOPATHOLOGY	1.5 814 403 01	0.0557 91636	TGFB2/ADCY7/CCN2/TGFB1/TGFB3/ADCY3/SRF/SYNE3/SYNE4/ADCY4/SMAD3/SYNE2/PLEC/ADCY6/SUN1/ ADCY9

ST_INTEGRIN_SIGNALING_PATHWAY	1.5 808 633 35	0.0198 64398	GRB7/ITGA2/ITGA11/SHC1/ITGA4/ITGA3/ACTN1/ITGA5/ITGA10/CAV1/ZYX/TLN1/WAS/PLCG2/ITGA1/ITGA7/P4HB/VASP/ROCK1/ITGA9/ROCK2/PLCG1/CDKN2A/ARHGAP26/ACTR2/ARHGEF6/MAP3K11/ITGA8/ABL1/ASAP1/TLN2/AKT1/BRAF/PTEN/ITGA6/PIK3CA
REACTOME_RHO_GTPASE_CYCLE	1.5 807 872 4	0.0198 64398	SYDE2/DLC1/A2M/ARHGAP30/RHOD/ARHGEF35/RAC2/VAV1/ARHGAP4/ARHGAP29/ARHGAP9/ARHGAP45/RHOH/ARHGAP6/STARD8/ARHGAP18/FGD2/AKAP13/RHOJ/VAV2/TRIP10/STARD13/ARHGEF5/ARHGAP40/ARHGAP27/RALBP1/PLEKHG2/SYDE1/ARAP1/ARAP2/MYO9B/ARHGEF19/ARHGEF26/GMIP/ARHGEF1/ARHGEF40/TAGAP/TRIO/ARHGEF18/SRGAP2/ARHGEF15/ARHGAP24/RHOBTB1/ARHGEF12/ARHGAP26/ARHGEF10/FGD4/ARHGAP25/ARHGEF6/ARHGAP20/ARHGDI/ARHGAP8/ARHGAP10/INPP5B/ARHGAP1/ARAP3/VAV3/MYO9A/SRGAP1/ARHGAP11A/SOS1/GNA13/TIAM1/PREX1/PLEKHG5
BIOCARTA_VEGF_PATHWAY	1.5 795 270 86	0.1001 45581	SHC1/PIK3CG/FLT4/VEGFA/ARNT/FLT1/NOS3/HIF1A/KDR/PLCG1
REACTOME_METABOLISM_OF_CARBOHYDRATES	1.5 793 046 6	0.0330 41667	KERA/LUM/LYVE1/HS3ST3B1/SDC1/HK3/PCK1/HAS3/CEMIP/HAS1/B4GALT1/HSPG2/BGN/CHSY3/ST3GAL1/DSE/GPC4/CD44/SLC37A2/PYGL/CHSY1/CHST13/SLC26A2/GAA/MAN2B1/HPSE/HS3ST3A1/GUSB/CHST2/FUT7/STAB2/OGN/GNS/HGSNAT/HK2/B3GNT2/SLC9A1/NUP210/CHPF2/MAN2B2/HEXB/CHST7/PCK2/PAPSS2/GCKR/POM121/PRPS2/POM121C/PFKFB3/GPC1/GBE1/B3GALT5/GALNS/FUT4/MANBA/SLC2A1/FBP1/HS6ST1/GPC5/CSGALNACT2/SGSH/XYL2/GYS1/AGRN/PRELP/SDC2/FMOD/NUP98/CHST14/CHPF/GPC6/VCAN/ARSB/B3GNT3/TPR/SDC4/EXT1/PFKL/CHST15/DCN/CHST3/B4GALT5/XYLB/B3GALT1/PHKA2/GLB1/ADPGK/PGM2L1/EXT2/IDUA/HAS2
BIOCARTA_PITX2_PATHWAY	1.5 782 437 56	0.0895 49328	FZD1/LEF1/TRRAP/EP300/WNT1/CREBBP/PITX2/HDAC1/MED1
WP_GLOBO_SPHINGOLIPID_METABOLISM	1.5 767 164 04	0.1156 58363	GCNT1/A4GALT/ST3GAL1/GALNT2/ST6GALNAC5/ST6GALNAC2/GBGT1/B3GALT5
REACTOME_TOLL_LIKE_RECEPTOR_9_TLR9_CASCADE	1.5 766 939 14	0.0198 64398	NOD2/TLR8/TICAM2/SAA1/MAP3K8/NFKB2/CD14/TLR9/FOS/TLR7/DUSP4/TICAM1/IRAK2/NFKB1/RPS6KA3/MYD88/JUN/NFKBIA/S100A12/LY96/DUSP6/MAP2K3/IRF7/TRAF6/MEF2A/DUSP3/TLR4/MAPKAPK2/MAPK14/IRAK1/TAB3/EEA1/IKBKB/APP/CUL1/RPS6KA1/TAB2

WP_DNA_DAMAGE_RESPONSE_ONLY_ATM_DEPENDENT	1.5 757 102 03	0.0198 64398	FASLG/SOD2/SHC1/WNT3A/LDLR/FOSL1/PIK3CG/ERBB2/PIK3CD/NFKB2/PIK3R5/MLKL/PLAU/RAC2/LEF1/TGFB1/IRS1/CDKN1A/NFKB1/PCK2/JUN/SMAD3/BCL6/BCL2L11/FOXO3/PMAIP1/CDKN2A/INSR/TP53/TCF7/WNT1/ATM/ABL1/WNT5B/AKT1/PIK3C2A/PTEN/PIK3CA/BCL2
WP_TRANSCRIPTIONAL_CASCADE_REGULATING_ADIPOGENESIS	1.5 743 560 76	0.0986 09827	KLF5/GATA3/EGR2/CEBPB/CEBPD
WP_OVARIAN_INFERTILITY_GENES	1.5 693 744 12	0.0957 37909	VDR/PTGER2/DAZL/PRLR/EGR1/CEBPB/ESR2/NRIP1/MSH5/SMAD3/DMC1/SYNE2
REACTOME_TRAF6_MEDIATED_IRF7_ACTIVATION	1.5 677 261 19	0.1007 42695	IKBKE/RNF135/DDX58/IFNA5/IFNA14/IFIH1/EP300/IRF7/MAVS/TRAF6/TRIM25/IFNB1/CREBBP/IFNA17
REACTOME_P130CAS_LINKAGE_TO_MAPK_SIGNALING_FOR_INTEGRINS	1.5 662 075 13	0.0951 25409	FN1/ITGB3/TLN1/FGG/VWF/APBB1P/ITGA2B
REACTOME_NEGATIVE_REGULATION_OF_THE_PI3K_AKT_NETWORK	1.5 648 683 62	0.0198 64398	EREG/ICOS/MET/AREG/LCK/FGF19/TRAT1/IER3/FGF10/ERBB2/FGFR1/CD80/PIK3CD/IL1RL1/CD28/PIK3AP1/RAC2/IL1RAP/ESR1/ESR2/VAV1/HBEGF/EGF/PDGFRB/IRS1/NRG1/IRS2/MYD88/FGF5/KL/HGF/BTC/KITLG/PDGFA/CD86/TRAF6
REACTOME_SIGNALING_BY_WNT_IN_CANCER	1.5 646 167 75	0.1046 90308	DKK1/WNT3A/FZD8/FZD5/DKK2/KREMEN2/FZD4/FZD6
REACTOME_CIRCADIAN_CLOCK	1.5 644 833 69	0.0198 64398	SERPINE1/NAMPT/BHLHE40/SIK1/HELZ2/NPAS2/ELOVL3/NRIP1/RORA/HIF1A/ARNTL2/NOCT/TBL1X/EP300/SREBF1/CLOCK/PER1/RAI1/BHLHE41/RXRA/MEF2D/CRTC2/CREBBP/CARM1/CUL1/NFIL3/NR1D1/CPT1A/CSNK1D/NCOR1/CRTC3/PPARA/NCOA1/UBC/NCOA6/PER2/PPARGC1A/NR3C1/ARNTL/MED1/CRY1/TGS1

REACTOME_LDL_CLEARANCE	1.5 638 574 5	0.1125 99394	APOB/LDLR/SOAT2/CES3/SOAT1/NPC2/NPC1/AP2A2/LDLRAP1/AP2A1/NCEH1/CLTC
REACTOME_INFLAMMASOMES	1.5 631 687 78	0.1294 23605	MEFV/NFKB2/NLRC4/NLRP3/NFKB1/PSTPIP1/CASP1/AIM2
KEGG_BASAL_CELL_CARCINOMA	1.5 620 844 83	0.0385 57536	FZD1/WNT3A/GLI1/FZD7/GLI3/GLI2/FZD8/FZD5/LEF1/STK36/FZD10/SMO/FZD2/FZD4/FZD6/PTCH2/TP53/TCF7/WNT1/SHH/WNT5B
REACTOME_SMAD2_SMAD3_SMAD4_HETEROTRIMER_REGULATES_TRANSCRIPTION	1.5 604 681 32	0.0957 37909	SERPINE1/CDKN2B/ATP1B4/WWTR1/JUNB/SP1/SMAD3/CCNK/CCNT1/TFDP1/RNF111/UBC/TGIF1/RBL1/HDAC1/TGIF2/MEN1/SMAD2/SMAD7/SNW1/E2F4
BIOCARTA_LONGEVITY_PATHWAY	1.5 603 406 26	0.0951 25409	SOD2/SHC1/PIK3CG/FOXO3/SOD3/GHR/IGF1R/AKT1/IGF1/PIK3CA
REACTOME_NICOTINAMIDE_SALVAGING	1.5 592 703 89	0.1125 99394	PTGS2/NAMPT/PTGIS/NNMT/PARP14/PARP10/PARP4
REACTOME_TRP_CHANNELS	1.5 573 349 07	0.1001 45581	TRPA1/TRPM8/TRPV4/TRPM2/MLKL/TRPC7/TRPM5/RIPK3/TRPV1/TRPV2/RIPK1/TRPM3/TRPM7/MCOLN2/TRPM4
REACTOME_SEMA4D_IN_SEMAPHORIN_SIGNALING	1.5 554 826 25	0.1164 76049	MET/MYH9/ERBB2/MYL9/LIMK1/MYH11/ROCK1/ROCK2/RRAS/LIMK2/ARHGEF12

REACTOME_PI3K_EVENTS_IN_ERBB4_SIGNALING	1.5 548 601 01	0.1417 92019	EREG/HBEGF/NRG1/BTC
REACTOME_INTERLEUKIN_27_SIGNALING	1.5 524 944 49	0.1424 44123	IL27RA/STAT3/IL27/TYK2/JAK2/STAT1/EBI3/IL6ST/CANX
BIOCARTA_ATM_PATHWAY	1.5 521 761 26	0.1349 1386	CDKN1A/NFKB1/JUN/NFKBIA/GADD45A/BRCA1/TP53/ATM/ABL1/RBBP8/RAD50
WP_OXYSTEROLS_DERIVED_FROM_CHOLESTEROL	1.5 501 565 75	0.1331 05802	NR1I2/ESR1/ESR2/GPR183/CYP7A1/CH25H/RORC/IL25/HSD3B7
REACTOME_TNFR1_INDUCED_NFKAPPAB_SIGNALING_PATHWAY	1.5 499 671 21	0.1125 99394	TNFAIP3/BIRC3/TRAF1/RIPK1/TNFRSF1A/RNF31/OTUD7B/TAB3/IKBKB/CYLD/TRADD/TAB2/MAP3K7/USP4/RBCK1/UBC/TNF/TRAF2/XIAP/IKBKG
KEGG_GLYCOSAMINOGLYCAN_BIOSYNTHESIS_KERATAN_SULFATE	1.5 498 158 29	0.1005 72339	B4GALT1/ST3GAL1/CHST2/B3GNT2/CHST4
REACTOME_ANTIGEN_PROCESSING_CROSS_PPRESENTATION	1.5 496 573 03	0.0198 64398	MRC1/MRC2/CYBB/TLR6/TLR2/CD14/NCF2/TLR1/CD36/CTSS/ITGB5/TAPBP/CTSL/NCF1/PDIA3/HLA-C/MYD88/HLA-B/LNPEP/TAP1/LY96/HLA-F/NCF4/PSME4/HLA-E/FCGR1A/TLR4/TIRAP/BTK/CALR/TAP2/HLA-G/ITGAV/IKBKB
REACTOME_POU5F1_OCT4_SOX2_NANOG_REPRESSOR_GENES_RELATED_TO_DIFFERENTIATION	1.5 489 793 97	0.1417 92019	GATA6/DKK1/EOMES

PID_KIT_PATHWAY	1.5 487 090 25	0.0473 65435	SNAI2/GRAP2/SHC1/TEC/GRB10/VAV1/STAT5A/SH2B3/SOCS1/MAP4K1/SPRED2/STAT3/LYN/PTPN6/FOXO3/ KITLG/JAK2/SPRED1/CBL/STAT1/AKT1/CREBBP/PTEN/PIK3CA/BCL2/SOS1/DOK1/FER/GRB2
KEGG_CHRONIC_MYELOID_LEUKEMIA	1.5 479 663 39	0.0198 64398	CBLC/RUNX1/SHC1/TGFBR2/PIK3CG/TGFB2/PIK3CD/PIK3R5/TGFB1/STAT5A/CDKN1A/TGFB3/NFKB1/CDK6/ NFKBIA/SMAD3/MECOM/CDKN2A/TP53/CBL/ARAF/IKBKB/ABL1/AKT1/BRAF
ST_ADRENERGIC	1.5 476 946 59	0.1207 06714	CCL13/ITPR3/PTX3/CFB/PIK3CD/GNA15/CAMP/KCNJ5
WP_15Q133_COPY_NUMBER_VARIATION_SYNDROME	1.5 470 807 93	0.1349 1386	GOLGA8K/GOLGA8O/SERPINH1/CCL5/GOLGA8H/ULK4P2/CHRNA7/CHRFAM7A/GPR75
WP_CYTOSOLIC_DNASENSING_PATHWAY	1.5 465 082 27	0.0198 64398	IL6/IL1B/CCL5/IKBKE/STING1/NFKB1/ZBP1/RIPK3/CXCL10/CASP8/RIPK1/CGAS/CASP1/CASP10/NFKBIA/AIM 2/NLRX1/DDX58/IFNA5/IFNA14/IRF7/MAVS/TRIM25/ADAR/IFNB1/IKBKB/CYLD/IFNA17/TRADD
WP_ANGIOGENESIS	1.5 465 077 82	0.1230 74535	MMP9/VEGFA/ARNT/FLT1/NOS3/HIF1A/SMAD1/ANGPT1/KDR/PLCG1/MAPK14/TIMP3/PDGFB/AKT1/CREBBP/ TIMP2/PIK3CA
PID_IFNG_PATHWAY	1.5 458 118 45	0.1071 85498	IFNG/CEBPB/IL1B/SOCS1/IRF1/STAT3/PRKCD/CASP1/EP300/PTPN2/JAK2/CBL/CAMK2D/IRF9/STAT1/MAP3K 11/AKT1/CREBBP/PIK3CA/PIAS1/MTOR
REACTOME_MAPK3_ERK1_ACTIVATION	1.5 417 416 5	0.1460 87393	IL6/IL6R/TYK2/JAK2

PID_P73PATHWAY	1.5 392 086 78	0.0198 64398	SERPINE1/SERPINA1/IL4R/NTRK1/YAP1/PML/IL1RAP/CLCA2/GDF15/WT1/CDKN1A/SFN/PLK3/SP1/CASP2/CDK6/BCL2L1/FOXO3/EP300/FAS/TP63/MAPK14/AFP/GATA1/JAG2/ABL1/GRAMD4/BRCA2/CDK2/FLOT2
REACTOME_INTERLEUKIN_12_SIGNALING	1.5 383 468 17	0.0636 98474	SOD2/SERPINB2/CNN2/LCP1/IFNG/IL10/IL12B/MSN/ANXA2/IL12RB1/P4HB/TYK2/JAK2/MTAP/GSTA2/CA1
REACTOME_COMMON_PATHWAY_OF_FIBRIN_CLOT_FORMATION	1.5 364 960 67	0.1442 84129	F13A1/CD177/THBD/PF4V1/PROS1/FGG/F2R/PF4/PRTN3/PROCR/SERPINA5/SERPINC1
NABA_PROTEOGLYCANS	1.5 350 233 05	0.1278 23508	EPYC/KERA/LUM/PODNL1/HSPG2/BGN/ESM1/PRG4/HAPLN4/OGN/SPOCK2/ASPN/SRGN/HAPLN3/PRELP/FMOD/NYX
WP_EDA_SIGNALLING_IN_HAIR_FOLLICLE_DEVELOPMENT	1.5 338 014 58	0.1259 11878	DKK1/GLI1/LTB/RELB/BMP1
REACTOME_TOLL_LIKE_RECEPTOR_TLR1_TLR2_CASCADE	1.5 327 024 26	0.0198 64398	NOD2/TLR6/SAA1/TLR2/MAP3K8/NFKB2/CD14/TLR1/FOS/IRAK3/CD36/DUSP4/SOCS1/IRAK2/NFKB1/RPS6KA3/MYD88/JUN/NFKBIA/S100A12/LY96/DUSP6/MAP2K3/SFTPA1/TRAF6/MEF2A/DUSP3/TLR4/MAPKAPK2/MAPK14/TIRAP/IRAK1/BTK
WP_CANCER_IMMUNOTHERAPY_BY_CTLA4_BLOCKADE	1.5 313 191 66	0.1099 04832	CTLA4/CD80/PIK3CD/CD28/HLA-DRB1/PTPN6/CD86
REACTOME_MET_ACTIVATES_RAS_SIGNALING	1.5 312 601 6	0.1526 07608	MET/SHC1/HGF/RANBP10/RANBP9/SOS1/GRB2

REACTOME_ACTIVATION_OF_IRF3_IRF7_MEDIATED_BY_TBK1_IKK_EPSILON	1.5 310 126	0.1125 99394	TICAM2/CD14/TICAM1/IKBKE/TRAF3/LY96/IRF7/TLR4
REACTOME_CELL_CELL_COMMUNICATION	1.5 297 461 15	0.0198 64398	LAMA3/CLDN23/CLDN4/SIRPG/SDK1/ACTN1/ITGB4/LAMC2/CLDN19/IQGAP1/FBLIM1/CLDN1/KIRREL1/FLNA/FYB1/CDH17/KIRREL2/CLDN3/CDH11/ITGB1/CD2AP/JUP/NECTIN2/CLDN18/SIRPB1/PVR/CDH6/CDH2/ACTN4/LIMS1/CLDN7/PXN/F11R/CDH4/VASP/PTPN6/CDH5/KRT5/CLDN14/CLDN2/PLEC/NECTIN4/PARVA/CTNND1/LAMB3/CADM1/SFTPA1
WP_PATHWAYS_OF_NUCLEIC_ACID_METABOLISM_AND_INNATE_IMMUNE_SENSING	1.5 295 827 83	0.1068 4863	STING1/CGAS/SAMHD1/DDX58/IFIH1/OAS1/MAVS/RNASEL/RNASET2/ADAR/IFNB1
REACTOME_REGULATION_OF_TNFR1_SIGNALING	1.5 294 304 2	0.1114 45536	TNFAIP3/BIRC3/TRAF1/CASP8/RIPK1/TNFRSF1A/RNF31/OTUD7B/OTULIN/IKBKB/CYLD/TRADD/USP4/RBCK1/UBC/SPPL2A/TNF/TRAF2/XIAP/IKBKG/SPPL2B
WP_INSULIN_SIGNALING	1.5 285 567 05	0.0348 47442	REG1A/CBLC/SHC1/SOCS3/EGR1/PIK3CG/MAPK13/MYO1C/GRB10/MAP3K8/MAP3K6/EHD2/PIK3CD/RAC2/FOS/SOCS1/ENPP1/PTPRF/MAP4K1/RHOJ/RRAD/IRS1/MAP3K14/STXB2/IRS2/RPS6KA3/FOXO1/MAPK4/PRKCD/SRF/JUN/ARF6/SLC2A1/MAP3K3/GYS1/MAP2K3/FOXO3/INPPL1/CYTH3/MAP3K12/MAP3K5/PFKL/MAPK14/INSR/IGF1R/CBL/PRKCH/MAP3K2/MAP3K11/RPS6KA4/IKBKB/PTPN1/MAP4K2/AKT1/PIK3C2A/RPS6KA1/PTEN/FLOT2/PRKAA1/INPP4A/PIK3CA/TBC1D4/MAPK7
WP_LNCRNA_INVOLVEMENT_IN_CANONICAL_WNT_SIGNALING_AND_COLORECTAL_CANCER	1.5 279 801 82	0.0198 64398	ROR2/SFRP2/DKK1/SFRP4/FZD1/WNT3A/FZD7/FZD8/FOSL1/FZD5/ROR1/PLAU/LEF1/SERPINF1/SOST/SFRP5/MIR34AHG/JUN/FZD10/DKK2/CDK6/FZD2/NKD2/CER1/FZD6/ATF3
KEGG_GLYCOSAMINOGLYCAN_DEGRADATION	1.5 255 177 62	0.1392 33371	HS3ST3B1/HPSE/HS3ST3A1/GUSB/GNS/HGSNAT/HEXB/GALNS/SGSH/ARSB/GLB1/IDUA/HEXA
PID_P38_ALPHA_BETA_PATHWAY	1.5 205 008 06	0.1188 19299	LCK/DUSP1/BLK/HCK/RIPK1/LYN/MAP3K3/MAP2K3/FGR/CCM2/MAP3K12/TRAF6/MAPK14



REACTOME_INTEGRIN_SIGNALING	1.5 189 156 2	0.1296 17522	FN1/SHC1/ITGB3/SYK/TLN1/FGG/VWF/RASGRP1/APBB1IP/ITGA2B/PTPN1/AKT1/RASGRP2
PID_S1P_S1P3_PATHWAY	1.5 181 891 09	0.1076 28328	ITGB3/GNA15/PDGFRB/VEGFA/GNA14/FLT1/S1PR3/JAK2/CXCR4/ITGAV/PDGFB/AKT1/S1PR2/GNA12/GNAI2/GNA13
WP_WNT_SIGNALING	1.5 158 507 14	0.0198 92136	ROR2/SFRP2/DKK1/SFRP4/FZD1/WNT3A/FZD7/FZD8/FOSL1/GPC4/FZD5/NFATC4/ROR1/PLAU/LEF1/SERPINF1/PLCB2/NFATC2/SOST/SFRP5/JUN/FZD10/DKK2/FZD2/NFATC1/NKD2/DAAM1/VANGL1/ROCK2/NFATC3/CER1/PLCB3/PRICKLE2/FZD6
BIOCARTA_GH_PATHWAY	1.5 120 228 34	0.1353 83273	SHC1/PIK3CG/STAT5A/SOCS1/IRS1/SRF/PTPN6/PLCG1/JAK2/GHR/INSR/RPS6KA1/PIK3CA/SOS1/PRKCA/GRB2/STAT5B
KEGG_PROSTATE_CANCER	1.5 090 900 78	0.0198 64398	INSRR/PIK3CG/ERBB2/FGFR1/PIK3CD/PIK3R5/CREB3L1/LEF1/EGF/PDGFRB/CREB3L2/CDKN1A/NKX3-1/NFKB1/FOXO1/PDGFD/NFKBIA/EP300/PDGFA/IGF1R/HSP90B1/TP53/TCF7/ARAF/IKKB/AR/PDGFB/CCNE1/AKT1/BRAF/CREBBP/CDK2/PTEN/IGF1/PIK3CA/BCL2/CREB5/SOS1/MTOR/PIK3CB/GRB2
WP_RAC1PAK1P38MMP2_PATHWAY	1.5 084 938 7	0.0414 10642	GRB7/NOS2/FN1/TNIP3/DOK2/MAPK13/ERBB2/YAP1/ITGB1/STAT5A/NFKB1/STAT3/FOXO1/CASP7/PXN/NFKBIA/ANGPT1/ANGPT2
WP_OVERVIEW_OF_INTERFERONSMEDIATED_SIGNALING_PATHWAY	1.5 081 092 01	0.1269 36416	IFNG/IFNE/STAT2/IFNLR1/IFNA5/IFNA14/TYK2/JAK2/IFNAR1/IL10RB/IRF9/STAT1/IFNB1/IFNA17/PIK3CA/IFNGR2/IFNL3/PRKCA
REACTOME_IKK_COMPLEX_RECRUITMENT_MEDIATED_BY_RIP1	1.5 079 255 46	0.1456 35971	BIRC3/TICAM2/CD14/TICAM1/RIPK3/RIPK1/LY96/TRAF6/TLR4

REACTOME_C_TYPE_LLECTIN_RECEPTORS_CLRS -	1.5 066 420 8	0.0199 95966	CD209/CLEC4D/CLEC10A/ITPR3/MUCL1/CLEC6A/CCL22/MUC3A/RELB/NFKB2/MUC1/IL1B/ICAM3/SYK/CLEC7A/NFATC2/PLCG2/MAP3K14/NFKB1/CASP8/PRKCD/CARD9/LYN/FCER1G/CARD11/ITPR2/MALT1/NFKBIA/NFATC1/NFATC3/EP300/PSME4/MUC13/TRAF6
REACTOME_THE_NLRP3_INFLAMMASOME	1.5 060 443 06	0.1286 89199	MEFV/NFKB2/NLRP3/NFKB1/PSTPIP1/CASP1
BIOCARTA_ERK5_PATHWAY	1.5 060 035 95	0.1555 9401	SHC1/NTRK1/PIK3CG/PLCG1/AKT1/RPS6KA1/PIK3CA/MAPK7/GRB2
BIOCARTA_FCER1_PATHWAY	1.5 059 047 44	0.1183 64518	SHC1/PIK3CG/NFATC4/FOS/VAV1/SYK/NFATC2/JUN/LYN/FCER1G/NFATC1/NFATC3/PLCG1
BIOCARTA_TALL1_PATHWAY	1.5 048 759 96	0.1286 89199	TNFRSF17/MAP3K14/NFKB1/TNFSF13/TRAF3/TRAF6/MAPK14/TNFSF13B
REACTOME_TNFR1_INDUCED_PROAPOPTOTIC_S IGNALING	1.5 034 530 74	0.1555 9401	TNFAIP3/CASP8/RIPK1/TNFRSF1A/OTUD7B/CYLD/TRADD/USP4/TNF/TRAF2/FADD
WP_HEART_DEVELOPMENT	1.5 021 995 52	0.0861 97387	GATA6/BHLHE40/FGF10/FOXA2/NFATC4/TBX1/VEGFC/VEGFA/NFATC2/SRF/FOXC2/SMAD1/NFATC1/FOXC1/NFATC3/HAND1/FOXH1/TBX2
BIOCARTA_FIBRINOLYSIS_PATHWAY	1.4 984 430 01	0.1493 87755	F13A1/SERPINE1/SERPINB2/PLAU/FGG/F2R

KEGG_REGULATION_OF_ACTIN_CYTOSKELETON	1.4 983 771 34	0.0247 96748	BDKRB1/MYL10/ITGA2/BDKRB2/ITGA11/FN1/INSRR/ITGA4/ITGA3/ACTN1/ITGB4/FGF19/ITGAM/ITGA5/ITGB3/I QGAP1/FGF10/MYH9/PIK3CG/ITGA10/ARPC1B/FGFR1/ITGB2/PIK3CD/CD14/VCL/NCKAP1L/PIK3R5/SCIN/RA C2/ITGAD/VAV1/ITGB7/ITGAL/EGF/MYL7/ITGB1/ITGB5/PDGFRB/IQGAP2/MSN/MYL9/WAS/SLC9A1/VAV2/LIM K1/ITGA1/SSH1/ACTN4/F2R/FGF11/PXN/ITGA7/FGF5/PDGFD/IQGAP3/WASF2/ITGAX/ROCK1/DIAPH2/ITGA9/ ROCK2
BIOCARTA_PCAF_PATHWAY	1.4 959 788 05	0.1601 80447	IRF4/IRF1/NFKB1/JUN/IRF7/IRF5/IRF2/CREBBP
REACTOME_KERATAN_SULFATE_DEGRADATION	1.4 950 791 76	0.1601 80447	KERA/LUM/OGN/GNS/HEXB/GALNS/PRELP/FMOD/GLB1/HEXA
REACTOME_GRB2_SOS_PROVIDES_LINKAGE_TO _MAPK_SIGNALING_FOR_INTEGRINS_	1.4 931 378 14	0.1342 1452	FN1/ITGB3/TLN1/FGG/VWF/APBB1P/ITGA2B
REACTOME_NEPHRIN_FAMILY_INTERACTIONS	1.4 929 769 4	0.1558 93128	ACTN1/IQGAP1/KIRREL1/KIRREL2/CD2AP/ACTN4
BIOCARTA_ACE2_PATHWAY	1.4 921 715 15	0.1643 1522	AGTR2/CMA1/COL4A1/COL4A2/AGTR1/ACE
PID_EPHA2_FWD_PATHWAY	1.4 919 669 66	0.1406 85985	SHC1/EPHA2/VAV2/INPPL1/CBL/VAV3/PIK3CA/TIAM1/GRB2
KEGG_ALPHA_LINOLENIC_ACID_METABOLISM	1.4 887 149 49	0.1454 3258	PLA2G2A/PLA2G2F/PLA2G4E/PLA2G5/PLA2G2D/JMJD7-PLA2G4B/PLA2G2C/PLA2G4B

BIOCARTA_PTEN_PATHWAY	1.4 869 370 21	0.1449 91932	FASLG/SHC1/ITGB1/FOXO3/AKT1/PTEN/PIK3CA/SOS1/GRB2
WP_CELL_MIGRATION_AND_INVASION_THROUGH_P75NTR	1.4 842 749 7	0.1423 98244	MMP8/EFNB2/MMP9/EFNA5/CDH11/TWIST1/STAT3/JUN/ADAMTS13/TRIO/EFNA4/BDNF/AKT1/MMP2/EFNB1/PARD3/TIAM1
BIOCARTA_EGF_PATHWAY	1.4 836 756 2	0.1353 83273	SHC1/FOS/EGF/STAT5A/STAT3/SRF/JUN/PLCG1/RASA1/STAT1/PIK3CA/SOS1/PRKCA/GRB2
REACTOME_WNT5A_DEPENDENT_INTERNALIZATION_OF_FZD2_FZD5_AND_ROR2	1.4 826 348 98	0.1643 1522	ROR2/FZD5/ROR1/FZD2
WP_MFAP5MEDIATED_OVARIAN_CANCER_CELL_MOTILITY_AND_INVASIVENESS	1.4 822 269 51	0.1643 1522	MFAP5/ITPR3/ITGB3/RYR3/JUN/PLCG1
REACTOME_TRANSCRIPTIONAL_REGULATION_OF_PLURIPOTENT_STEM_CELLS	1.4 813 150 47	0.1209 86608	GATA6/DKK1/EOMES/SALL4/DPPA4/EPHA1/EPAS1/STAT3/KLF4/FOXP1/POU5F1
PID_ERBB_NETWORK_PATHWAY	1.4 813 057 33	0.1502 3078	EREG/AREG/ERBB2/HBEGF/EGF/NRG1/BTC
WP_UNFOLDED_PROTEIN_RESPONSE	1.4 785 821 56	0.1610 74003	IL1B/ERN1/TNFRSF10B/CASP8/PPP1R15A/CASP2/HSPA5/BCL2L11/PMAIP1/TP53/NFE2L2/ATF6/EIF2AK3/BCL2/MBTPS2/MBTPS1

WP_EGFEGFR_SIGNALING_PATHWAY	1.4 768 773 41	0.0348 78607	FOSB/CBLC/SH2D2A/SHC1/PXDN/ERRF11/IQGAP1/DOK2/ERBB2/RIN1/GRB10/FOS/VAV1/EGF/TWIST1/CAV1/STAT5A/PTPN12/MAP4K1/INPP5D/VAV2/ELK4/RPS6KA3/STAT3/FOXO1/MAPK4/PRKCD/JUN/RALBP1/SPRY2/PLSCR1/NOS3/ARF6/SP1/PLCE1/MAP3K3/ROCK1/INPPL1/PLCG1/JAK2/ARHGEF1/LIMK2/MEF2A/PIAS3/MAPK14/NCOA3/RASA1/CBL/PLD2/STAT1/MAP3K2/MEF2D/ABL1/ASAP1/AKT1/BRAF/NEDD4/PTK2B/RPS6KA1/PTEN/VAV3/MAPK7/RALB/SOS1/GJA1/AP2A1/MTOR/PRKCA/GRB2/IQSEC1/RPS6KA2/EPS8/STAT5B/HGS
PID_CIRCADIAN_PATHWAY	1.4 746 532 43	0.1548 5213	BHLHE40/NPAS2/CLOCK/PER1/TIMELESS/NR1D1/ATR/PER2/ARNTL/CRY1
PID_ERBB4_PATHWAY	1.4 726 084 15	0.1265 61277	EREG/PRLR/SHC1/ERBB2/YAP1/PIK3CD/HBEGF/STAT5A/NRG1
REACTOME_PLASMA_LIPOPROTEIN_ASSEMBLY_REMODELING_AND_CLEARANCE	1.4 717 544 6	0.0613 40044	LIPG/APOA2/PCSK5/ANGPTL4/APOB/LDLR/A2M/ABCA1/FURIN/BMP1/SOAT2/PLTP/APOBR/CES3/SOAT1/P4HB/LMF2/CIDEC/NPC2/LPL/CUBN/HDLBP/APOC4/NPC1/MTTP
REACTOME_CONSTITUTIVE_SIGNALING_BY_OVEREXPRESSED_ERBB2	1.4 712 557 26	0.1966 67442	SHC1/ERBB2/PTPN12/ERBIN
REACTOME_NICOTINATE_METABOLISM	1.4 678 907 9	0.1328 9673	PTGS2/NAMPT/PTGIS/NNMT/PARP14/PARP10/NT5E/PARP4
KEGG_TRYPTOPHAN_METABOLISM	1.4 663 668 12	0.1266 93507	CYP1B1/IDO2/TDO2/TPH1/KYNU/IL4I1/ACMSD/MAOB/KMO/OGDH/WARS1/AOC1
WP_1Q211_COPY_NUMBER_VARIATION_SYNDROME	1.4 627 658 16	0.1328 9673	KIRREL1/NOTCH2/GJA3/NOTCH2NLA/ACP6/F11R/GJA5/GJA8/BCL9/PRKAA1/OCLN/PRKAG3/PPIAL4H/GJA1/TJP1/AFDN/TJP3/PYGO1

BIOCARTA_INSULIN_PATHWAY	1.4 618 836 73	0.1595 91401	SHC1/PIK3CG/FOS/IRS1/SRF/JUN/INSR/RASA1/PIK3CA/SOS1/GRB2
REACTOME_TRYPTOPHAN_CATABOLISM	1.4 610 202 15	0.1954 65633	IDO2/TDO2/KYNU/ACMSD/KMO
BIOCARTA_HER2_PATHWAY	1.4 596 148 89	0.1657 8686	IL6/SHC1/PIK3CG/ERBB2/IL6R/ESR1/STAT3
SIG_INSULIN_RECEPTOR_PATHWAY_IN_CARDIAC_MYOCYTES	1.4 595 121 63	0.0876 36414	SHC1/PIK3CD/F2RL2/IRS1/IRS2/RPS6KA3/SFN/FOXO1/LNPEP/IGFBP1/INPPL1/CYTH3/BRD4/CDKN2A/CBL/PTPN1/AKT1/RPS6KA1/PTEN/FLOT2/PIK3CA/PARD3/SOS1/GRB2/RPS6KA2
KEGG_ARRHYTHMOGENIC_RIGHT_VENTRICULAR_CARDIOMYOPATHY_ARVC	1.4 590 938 39	0.0295 13566	DSG2/ITGA2/LAMA2/ITGA11/ITGA4/ITGA3/ACTN1/ITGB4/DSC2/ITGA5/ITGB3/ITGA10/LEF1/ITGB7/ITGB1/ITGB5/JUP/LMNA/ITGA1/CACNA2D4/CDH2/ACTN4/ITGA7/SLC8A1/DMD
WP_ARRHYTHMOGENIC_RIGHT_VENTRICULAR_CARDIOMYOPATHY	1.4 590 938 39	0.0295 13566	DSG2/ITGA2/LAMA2/ITGA11/ITGA4/ITGA3/ACTN1/ITGB4/DSC2/ITGA5/ITGB3/ITGA10/LEF1/ITGB7/ITGB1/ITGB5/JUP/LMNA/ITGA1/CACNA2D4/CDH2/ACTN4/ITGA7/SLC8A1/DMD
PID_RB_1PATHWAY	1.4 566 422 91	0.0694 96039	CSF2/MET/RUNX2/TGFB2/CEBPB/CEBPD/CDKN1A/SPI1/JUN/CDK6/TAF1/EP300/MAPK14/CDKN2A/ATF7/ELF1/DNMT1/PPARG/ABL1/CCNE1/CREBBP/TFDP1/CDK2
BIOCARTA KERATINOCYTE_PATHWAY	1.4 565 789 04	0.0938 73927	FASLG/TNFRSF1B/MAPK13/FOS/EGF/MAP3K14/NFKB1/RIPK1/PRKCD/JUN/TNFRSF1A/SP1/NFKBIA/MAP2K3/MAP3K5/FAS/MAPK14

REACTOME_SEMA3A_PAK_DEPENDENT_AXON_R EPULSION	1.4 533 940 1	0.1642 87638	NRP1/SEMA3A/FES/PLXNA1/LIMK1/PLXNA3
REACTOME_TRAF6_MEDIATED_INDUCION_OF_T AK1_COMPLEX_WITHIN_TLR4_COMPLEX	1.4 531 930 18	0.1695 51273	TICAM2/CD14/TICAM1/IRAK2/LY96/TRAF6/TLR4/TAB3/TAB2/MAP3K7/UBC
WP_OSTEOBLAST_SIGNALING	1.4 527 158 18	0.1992 40272	COL1A1/TNFSF11/IBSP/ITGB3/PDGFRB
SA_TRKA_RECEPTOR	1.4 522 087 06	0.1698 18469	SHC1/NTRK1/PIK3CD/CDKN1A
REACTOME_GENE_AND_PROTEIN_EXPRESSION_ BY_JAK_STAT_SIGNALING_AFTER_INTERLEUKIN_ 12_STIMULATION	1.4 507 083 8	0.1512 35621	SOD2/SERPINB2/CNN2/LCP1/IFNG/IL10/MSN/ANXA2
BIOCARTA_TID_PATHWAY	1.4 496 048 72	0.1762 60908	TNFRSF1B/IFNG/WT1/NFKB1/HSPA1A/TNFRSF1A/NFKBIA/JAK2/TP53/IKBKB
BIOCARTA_BCR_PATHWAY	1.4 486 645 18	0.1298 55864	SHC1/NFATC4/FOS/VAV1/SYK/NFATC2/JUN/LYN/NFATC1/NFATC3/PLCG1/MAPK14/BTK
KEGG_CIRCADIAN_RHYTHM_MAMMAL	1.4 452 417 89	0.1908 40103	BHLHE40/NPAS2/CLOCK/PER1/BHLHE41/NR1D1/CSNK1D/PER2/ARNTL/CRY1

WP_ENDOCHONDRAL_OSSIFICATION	1.4 449 509 81	0.0783 39041	MMP13/ADAMTS1/RUNX2/GLI3/TGFB2/FGFR1/SERPINH1/MMP9/COL10A1/SCIN/PLAU/TGFB1/ENPP1/VEGFA /DDR2/RUNX3/ADAMTS4/SPP1/SOX9/GHR/IGF1R/TIMP3/STAT1/PRKACA
WP_ENDOCHONDRAL_OSSIFICATION_WITH_SKELETAL_DYSPLASIAS	1.4 449 509 81	0.0783 39041	MMP13/ADAMTS1/RUNX2/GLI3/TGFB2/FGFR1/SERPINH1/MMP9/COL10A1/SCIN/PLAU/TGFB1/ENPP1/VEGFA /DDR2/RUNX3/ADAMTS4/SPP1/SOX9/GHR/IGF1R/TIMP3/STAT1/PRKACA
REACTOME_KERATAN_SULFATE_BIOSYNTHESIS	1.4 441 184 66	0.1581 87753	KERA/LUM/B4GALT1/ST3GAL1/CHST2/OGN/B3GNT2/PRELP/FMOD/B3GNT3/B4GALT5
WP_MAPK_AND_NFKB_SIGNALLING_PATHWAYS_INHIBITED_BY_YERSINIA_YOPJ	1.4 440 984 81	0.1587 80834	MAP3K14/NFKB1/NFKBIA/TRAF6/RRAS/IKBKB
BIOCARTA_VITCB_PATHWAY	1.4 428 372 54	0.2050 24346	SLC2A3/COL4A1/COL4A2/P4HB/SLC2A1
PID_ARF6_PATHWAY	1.4 416 745 43	0.1583 75107	MET/EPHA2/ITGB3/GNA15/EGF/AGTR1/GNA14/ARF6/PXN/ARAP2/HGF/ACAP1/CYTH3/ADRB2/ITGA2B
WP_INTERACTOME_OF_POLYCOMB_REPRESSIVE_COMPLEX_2_PRC2	1.4 404 711 8	0.1908 40103	STK38/ELL/SETX/AEBP2/THRAP3/MORC3/SUZ12/EZH2/BCLAF1/TRIM35/EZH1/JARID2
REACTOME_DEFECTIVE_B4GALT7_CAUSES_EDS_PROGEROID_TYPE	1.4 377 778 72	0.1919 55193	SDC1/HSPG2/BGN/GPC4/GPC1/GPC5/AGRN/SDC2/GPC6/VCAN/SDC4/DCN



WP_MAPK_PATHWAY_IN_CONGENITAL_THYROID_CANCER	1.4 377 165 18	0.1908 40103	SHC1/ALK/FOS/JUN
REACTOME_TP53_REGULATES_TRANSCRIPTION_OF_CASPASE_ACTIVATORS_AND_CASPASES	1.4 373 670 34	0.1636 16328	NLRC4/CASP1/CASP10/CASP2/PIDD1/TP63/TP53/ATM/CASP6
WP_PROSTAGLANDIN_SYNTHESIS_AND_REGULATION	1.4 301 814 2	0.1193 79767	PTGS2/PTGER2/PTGFR/PTGES/PTGER4/PTGIS/PTGIR/PTGS1/ANXA2/PTGFRN/PPARGC1B/TBXA2R/EDNRA/TBXAS1/HSD11B1/ANXA1/SOX9/ANXA4
REACTOME_NEGATIVE_REGULATORS_OF_DDX58_IFIH1_SIGNALING	1.4 289 900 14	0.1454 3258	TNFAIP3/NLRC5/IKBKE/RNF135/UBA7/TRAF3/NLRX1/DDX58/RNF216/IFIH1/MAVS/TRIM25/HERC5
WP_EXTRACELLULAR_VESICLES_IN_THE_CROSSTALK_OF_CARDIAC_CELLS	1.4 272 282 22	0.1818 65285	IL6/MMP9/EGF/STAT3/SPP1/HSPB1/KDR/TLR4/PTEN/IGF1/ETS2
PID_ERBB1_RECEPTOR_PROXIMAL_PATHWAY	1.4 261 779 27	0.1640 08641	SHC1/PIK3CD/EGF/TLN1/STAT3/PTPN6/PLCG1/RASA1/STAT1/PTPN1/GSN/PIK3CA/WASL/SOS1/PIK3CB/GRB2/PIP5K1C
REACTOME_TRANSCRIPTIONAL_REGULATION_OF_WHITE_ADIPOCYTE_DIFFERENTIATION	1.4 257 908	0.0320 55946	LEP/PCK1/KLF5/ANGPTL4/EGR2/HELZ2/CEBPB/CEBPD/TGFB1/CD36/EBF1/NFKB1/KLF4/ZNF467/MED14/NR2F2/TBL1X/LPL/EP300/SREBF1/MED12/NCOA3/RXRA/MED23/NCOR2/WNT1/FABP4/PPARG/THRAP3/CREBBP/CARM1/NCOR1/MED15/PPARA/NCOA1/NCOA6/MED13/TNF/PPARGC1A/FAM120B/MED25/MED26/RELA/MED16/MED1/TGS1/ZNF638/MED22
REACTOME_CELL_JUNCTION_ORGANIZATION	1.4 239 928 59	0.0321 19351	LAMA3/CLDN23/CLDN4/SDK1/ACTN1/ITGB4/LAMC2/CLDN19/FBLIM1/CLDN1/FLNA/CDH17/CLDN3/CDH11/ITGB1/JUP/NECTIN2/CLDN18/PVR/CDH6/CDH2/LIMS1/CLDN7/PXN/F11R/CDH4/VASP/CDH5/KRT5/CLDN14/CLDN2/PLEC/NECTIN4/PARVA/CTNND1/LAMB3/CADM1

REACTOME_SIGNALING_BY_ERBB2_ECD_MUTANTS	1.4 227 942 56	0.1908 40103	SHC1/ERBB2/EGF/PLCG1/ERBIN/PIK3CA/SOS1/GRB2
REACTOME_RESOLUTION_OF_D_LOOP_STRUCTURES	1.4 218 196 42	0.1567 67906	RTEL1/BRCA1/RMI2/TOP3A/BARD1/ATM/SPIDR/RBBP8/BRCA2/RAD50/XRCC2/WRN/RAD51D/EME2/BRIP1/BLM/SLX4/SLX1B/XRCC3
BIOCARTA_NPP1_PATHWAY	1.4 214 094 75	0.2434 02018	IBSP/COL4A1/COL4A2/ENPP1/SPP1
REACTOME_SIGNALING_BY_EGFR	1.4 178 093 31	0.1152 3586	EREG/ADAM12/SHC1/AREG/HBEGF/EGF/PTPN12/SPRY1/SPRY2/PXN/ADAM10/BTC/PLCG1
REACTOME_O_LINKED_GLYCOSYLATION_OF_MUCINS	1.4 177 293 46	0.0855 01725	GALNT5/GCNT1/GALNT4/MUCL1/MUC3A/B3GNT8/ST3GAL1/GALNT2/MUC1/GCNT7/ST6GALNAC2/GALNT12/B3GNT2/B3GNT5/A4GNT/CHST4/GALNT10/GALNT3/B3GNT9
PID_WNT_CANONICAL_PATHWAY	1.4 175 668 02	0.1966 67442	WNT3A/FZD5/CAV1/CSNK1G1/NKD2
REACTOME_COHESIN_LOADING_ONTO_CHROMATIN	1.4 169 599 96	0.2434 02018	SMC1A/STAG1/WAPL/MAU2/NIPBL/PDS5B/PDS5A/SMC3
KEGG_HISTIDINE_METABOLISM	1.4 167 738 66	0.1434 95238	ALDH1A3/ALDH3B2/HAL/HDC/ALDH3A1/ALDH3B1/MAOB/AOC1

REACTOME_BMAL1_CLOCK_NPAS2_ACTIVATES_CIRCADIAN_GENE_EXPRESSION	1.4 162 896 25	0.1957 97468	SERPINE1/NAMPT/BHLHE40/HELZ2/NPAS2/ARNTL2/NOCT/TBL1X/CLOCK/BHLHE41/RXRA/CREBBP/CARM1
REACTOME_SIGNALING_BY_TGFB_FAMILY_MEMBERS	1.4 153 666 56	0.0437 69702	SERPINE1/FST/INHBA/TGFBR2/CDKN2B/PMEP A1/ATP1B4/WWTR1/FURIN/JUNB/TGFB1/FSTL1/INHBB/PPP1R15A/SKI/SP1/F11R/FSTL3/ACVRL1/SMAD1/SMAD3/USP9X/CER1/ARHGEF18/FOXH1/AMHR2/SMURF1/CBL/NCOR2
REACTOME_TRAF6_MEDIATED_NF_KB_ACTIVATION	1.4 153 002 26	0.2023 55866	SAA1/NFKB2/NFKB1/RNF135/NFKBIA/S100A12/DDX58/IFIH1/MAVS/TRAF6/TRIM25/IKBKB/APP
REACTOME_ZBP1_DAI_MEDIATED_INDUCTION_OF_TYPE_I_IFNS	1.4 143 932 46	0.1818 65285	NFKB2/TICAM1/NFKB1/ZBP1/RIPK3/MYD88/RIPK1/NFKBIA/TLR3
ST_FAS_SIGNALING_PATHWAY	1.4 117 757 42	0.0783 39041	CXCL8/MET/CD7/NFKB2/IL1A/NFKB1/CASP8/RIPK1/RALBP1/CAD/CASP10/NFKBIA/ROCK1/NFAT5/HSPB1/CD46/MAP3K5/FAS/CASP8AP2/TP53/BTK
REACTOME_HS_GAG_DEGRADATION	1.4 107 194 67	0.1919 55193	SDC1/HSPG2/GPC4/HPSE/GUSB/HGSNAT/GPC1/GPC5/SGSH/AGRN/SDC2/GPC6/SDC4/GLB1/IDUA
WP_ANGIOPOIETIN_LIKE_PROTEIN_8_REGULATORY_PATHWAY	1.4 082 065 9	0.0564 83493	CBLC/PCK1/SHC1/PIK3CG/MAPK13/MAP3K8/MAP3K6/PIK3CD/CYP7A1/MAP4K1/IRS1/TRIP10/MAP3K14/IRS2/RPS6KA3/FOXO1/MAPK4/SLC2A1/FBP1/MAP3K3/GYS1/LPL/MAP2K3/FOXO3/SREBF1/MAP3K12/MAP3K5/MAPK14/INSR/RXRA/CBL/MAP3K2/MAP3K11/RPS6KA4/PTPN1/MAP4K2/SLC16A2/AKT1/PIK3C2A/RPS6KA1/FLOT2/PRKAA1/PIK3CA/MAPK7/NR1H3/SESN3/PRKAG3/MAP3K7/SOS1/MLXIPL/MTOR/RPTOR
PID_RHOA_REG_PATHWAY	1.4 080 231 35	0.1392 7804	PLEKHG6/DLC1/VAV1/ARHGAP4/ARHGAP9/DEF6/ARHGAP6/AKAP13/VAV2/ARHGEF5/ARAP1/MYO9B/ARHGEF1/TRIO/ARHGEF18/ARHGEF28/ARHGEF15/ARHGEF12/ARHGEF10/ARHGDIB/ARHGAP8/ARAP3/FARP1/VAV3/SRGAP1

REACTOME_TNF_SIGNALING	1.4 063 156 32	0.1426 13549	TNFAIP3/BIRC3/TRAF1/CASP8/RIPK1/TNFRSF1A/RNF31/ADAM17/OTUD7B/OTULIN/TAB3/IKBKB/NSMAF/CYLD/TRADD/TAB2/MAP3K7/USP4/RBCK1/UBC/SPPL2A/TNF/TRAF2/XIAP/FADD/IKBKG/SPPL2B
REACTOME_TIGHT_JUNCTION_INTERACTIONS	1.4 062 234 09	0.1595 91401	CLDN23/CLDN4/CLDN19/CLDN1/CLDN3/CLDN18/CLDN7/F11R/CLDN14/CLDN2
WP_WNTBETACATENIN_SIGNALING_PATHWAY_IN_LEUKEMIA	1.4 059 962 26	0.2005 49854	DKK1/SALL4/FLT3/PML/LEF1/JUP/PPARD/FZD6/WNT1/LRP5/BCL9/AKT1/RUNX1T1
KEGG_EPITHELIAL_CELL_SIGNALING_IN_HELICOBACTER_PYLORI_INFECTION	1.4 057 559	0.0799 96349	CXCR1/CXCL8/CXCL1/MET/TCIRG1/MAPK13/CXCR2/CCL5/HBEGF/PLCG2/MAP3K14/NFKB1/JUN/LYN/F11R/NFKBIA/ADAM10
REACTOME_TRANSCRIPTIONAL_REGULATION_BY_RUNX3	1.4 051 683 02	0.0542 94615	RUNX1/ITGA4/YAP1/WWTR1/TEAD3/CCN2/LEF1/ITGAL/TGFB1/ZFH3/CDKN1A/RUNX3/RORC/SMAD3/SPP1/BCL2L11/FOXO3/EP300/TEAD1/JAG1/MAML1/CDKN2A/MAML3/TEAD4/SMURF1/TP53/TCF7
WP_APOPTOSIS_MODULATION_BY_HSP70	1.4 050 537 96	0.2095 05802	FASLG/NFKB1/CASP8/HSPA1A/CASP7/RIPK1/TNFRSF1A/CASP2/FAS
REACTOME_ALPHA_LINOLENIC_OMEGA3_AND_LINOLEIC_OMEGA6_ACID_METABOLISM	1.4 030 517 74	0.2353 99597	ELOVL2/ELOVL3/ACSL1/ABCD1
BIOCARTA_SET_PATHWAY	1.4 017 995 92	0.2478 97597	PRF1/GZMA/GZMB
PID_IL8_CXCR2_PATHWAY	1.4 015	0.1752 02044	CXCL8/PIK3R6/PIK3CG/CXCR2/DOCK2/GNA15/RAC2/PLCB2/HCK/GNA14/LYN/VASP/PLCB3/FGR

	988 02		
PID_IL5_PATHWAY	1.4 004 680 58	0.2478 97597	CSF2RB/CISH/PIM1/STAT5A/LYN/JAK2/SDCBP/PIK3CA/GRB2/STAT5B
WP_PRION_DISEASE_PATHWAY	1.3 987 239	0.1773 63836	FGFR1/BATF/IRF4/EBF1/NFKB1/PDIA3/STAT3/SPI1/HSPA5/POU2F2/EP300/HSP90B1/RXRA/CHD2
REACTOME_SIGNALING_BY_ACTIVIN	1.3 983 267 4	0.2397 69632	FST/INHBA/INHBB/FSTL3/SMAD3/FOXH1
WP_HEDGEHOG_SIGNALING_PATHWAY	1.3 973 853 78	0.1426 13549	EVC2/EVC/GLI1/GLI3/GLI2/BOC/DHH/CSNK1G1/SMO/SMURF1/PTCH2/CDON/CSNK1G2/GRK2/PRKACA/SHH/ KIF7/CSNK1D/BCL2
REACTOME_DEFECTIVE_EXT2_CAUSES_EXOSTOSES_2	1.3 958 645 88	0.2611 35504	SDC1/HSPG2/GPC4/GPC1/GPC5/AGRN/SDC2/GPC6/SDC4/EXT1/EXT2
PID_LYSOPHOSPHOLIPID_PATHWAY	1.3 954 139 73	0.1007 37642	IL6/CXCL8/ADCY7/GNA15/MMP9/FOS/HBEGF/NFKB1/ADCY3/TRIP6/PRKCD/JUN/GNA14/LYN/PXN/NFKBIA/A DCY4/ADCY6/PLCG1/PLCB3/ADCY9/ARHGEF1
REACTOME_ERBB2_ACTIVATES_PTK6_SIGNALING	1.3 936 913 2	0.2397 69632	EREG/ERBB2/HBEGF/EGF/NRG1/BTC
REACTOME_FOXO_MEDIATED_TRANSCRIPTION_OF_CELL_DEATH_GENES	1.3 929 676 43	0.2319 9704	FASLG/FOXO1/CITED2/BCL6/BCL2L11/FOXO3/EP300

BIOCARTA_CCR5_PATHWAY	1.3 927 233 92	0.2415 16862	CCL2/CCR5/CXCL12/FOS/JUN/PLCG1/MAPK14/CXCR4
WP_PHOTODYNAMIC_THERAPYINDUCED_UNFOLDED_PROTEIN_RESPONSE	1.3 919 446 53	0.2005 49854	SULT1E1/ERN1/EDEM1/DNAJC3/PPP1R15A/WARS1/HSPA5/BCL2L11/PDIA6/ATF3/HSP90B1/CALR/NFE2L2/ATF6/EIF2AK3
REACTOME_SIGNALING_BY_TGF_BETA_RECEPTOR_COMPLEX	1.3 905 489 74	0.0792 09475	SERPINE1/TGFBR2/CDKN2B/PMEPA1/ATP1B4/WWTR1/FURIN/JUNB/TGFB1/PPP1R15A/SKI/SP1/F11R/SMAD3/USP9X/ARHGEF18/SMURF1/CBL/NCOR2/CCNK/CCNT1/TFDP1/NCOR1/RNF111/PARD3/TGFBR1/UBC/SMURF2/TGIF1/RBL1
REACTOME_PLASMA_LIPOPROTEIN_ASSEMBLY	1.3 871 595 83	0.2193 89212	APOA2/APOB/A2M/ABCA1/BMP1/P4HB/APOC4/MITF
REACTOME_APOPTOTIC_CLEAVAGE_OF_CELLULAR_PROTEINS	1.3 853 711 79	0.2080 6869	DSG2/LMNA/CASP8/CASP7/PRKCD/VIM/ROCK1/STK26/PLEC/STK24/DSG3/CLSPN/ACIN1/DBNL/CASP6/GSN/OCLN/GAS2/TJP1/CASP3
REACTOME_EICOSANOID_LIGAND_BINDING_RECEPTORS	1.3 849 619 46	0.2594 89529	PTGER2/PTGFR/PTGER4/PTGIR/LTB4R2/LTB4R/OXER1/TBXA2R
WP_HEAD_AND_NECK_SQUAMOUS_CELL_CARCINOMA	1.3 806 234 27	0.0943 86035	TGFBR2/PIK3CG/ERBB2/FGFR1/NFKB2/REL/PIK3R5/NOTCH2/VEGFA/AJUBA/FAT1/CDKN1A/NFKB1/CASP8/IRF6/CDK6/TRAF3/NUMB/TERT/TP63/MAML1/CDKN2A/IGF1R/TP53
REACTOME_NGF_STIMULATED_TRANSCRIPTION	1.3 806 066 62	0.2051 28891	FOSB/EGR1/FOSL1/EGR2/TPH1/EGR3/JUNB/FOS/F3/RRAD/TRIB1/SRF/REST

KEGG_PANCREATIC_CANCER	1.3 797 815 53	0.0876 36414	TGFBR2/PIK3CG/ERBB2/TGFB2/PIK3CD/VEGFC/PIK3R5/RAC2/TGFB1/EGF/VEGFA/TGFB3/NFKB1/STAT3/RALB/CDK6/SMAD3/CDKN2A/TP53/ARAF/ARHGEF6/STAT1/IKBKB/AKT1/BRAF/BRCA2/PIK3CA/RALB/TGFB1
REACTOME_REGULATION_OF_KIT_SIGNALING	1.3 793 465 33	0.2413 39978	LCK/SH2B3/SOCS1/LYN/PTPN6/KITLG/CBL/SOS1/PRKCA/GRB2/SOCS6
REACTOME_NUCLEAR_EVENTS_KINASE_AND_TRANSCRIPTION_FACTOR_ACTIVATION_	1.3 792 720 9	0.1052 76074	FOSB/EGR1/FOSL1/EGR2/TPH1/EGR3/JUNB/FOS/DUSP4/F3/RRAD/RPS6KA3/TRIB1/SRF/REST/DUSP6/EP300/MEF2A/DUSP3/MAPKAPK2/MAPK14/EGR4
WP_DNA_IRDAMAGE_AND_CELLULAR_RESPONSE_VIA_ATR	1.3 784 081 81	0.0730 64363	PML/SP1/RECQL/BCL6/CEP164/HUS1/SMC1A/BRCA1/TP53BP1/RFWD3/UPF1/CLSPN/TP53/TOP3A/PRKDC/BARD1/ATM/RBBP8/FANCA/CLK2/BRCA2/RAD50/MDC1/CDK2/ATR/BRCC3/WRN/RECQL5/HERC2/SMARCAL1/RAD9A/BRIP1/MCM2/FEN1/FOXM1/ATRIP/IKBKG/USP1/RAD52/RPA1
WP_SIMPLIFIED_INTERACTION_MAP_BETWEEN_LOXL4_AND_OXIDATIVE_STRESS_PATHWAY	1.3 782 598 72	0.2556 16551	LOXL4/FN1/TGFB1/PKD1/FGF7/NFE2L2
WP_NEUROINFLAMMATION	1.3 771 155 19	0.2628 37088	NOS2/FOS/JUN/NFKBIA/TLR4/MAPK14
REACTOME_REGULATION_OF_GLYCOKINASE_BY_GLYCOKINASE_REGULATORY_PROTEIN	1.3 762 718 34	0.1843 19461	NUP210/GCKR/POM121/POM121C/NUP98/TPR/NUP188/NUP205/NUP62/NUP153/NUP214/RANBP2/NUP155/NUP50/NUP160/NUP58
BIOCARTA_STRESS_PATHWAY	1.3 758 697 77	0.2224 83187	MAP3K14/NFKB1/RIPK1/JUN/TNFRSF1A/CASP2/NFKBIA/MAP2K3/MAPK14/IKBKB/MAP4K2/TRADD

REACTOME_SIGNAL_TRANSDUCTION_BY_L1	1.3 757 214 31	0.2008 97308	NRP1/ITGA5/ITGB3/FGFR1/ITGB1/VAV2
WP_HIPPOMERLIN_SIGNALING_DYSREGULATION	1.3 754 189 63	0.0557 91636	ITGA2/MET/ITGA11/ITGA4/ITGA3/EPHA2/ITGB4/ITGAM/ITGA5/ITGB3/LATS2/NTRK1/CD44/ITGA10/FGFR1/ITGB2/CDH17/FLT3/TEAD3/ITGAD/CCN2/CSF1R/CDH11/ITGB7/ITGAL/ITGB1/ITGB5/PDGFRB/FLT4/AJUBA/ITGA1/CDH6/CDH2/CXCL10/FLT1/ITGA7/CDH4/CDH5/ITGAX
REACTOME_G_ALPHA_I_SIGNALLING_EVENTS	1.3 753 985 59	0.0406 05585	CCL13/CCL20/CXCL13/CXCL5/CCR8/GNGT1/HCAR3/BDKRB1/FPR2/HCAR2/CCR2/CCR4/CXCR3/PPBP/CXCR1/CXCL8/CXCL3/STRA6/CCL23/CXCL1/ITPR3/SDC1/BDKRB2/MTNR1B/CXCL2/FPR3/APOA2/AGTR2/HSPG2/C5AR1/RDH10/CXCR5/NPY2R/CCR7/CCR5/CCR6/CXCL6/CXCL9/CCR1/LRP1/HTR1D/APOB/LDLR/GPC4/C3/GPR18/SAA1/P2RY4/TAS2R60/CCR3/ADCY7/CXCR2/GPR31/CXCR6/S1PR4/TAS2R40/CXCL12/PLB1/CCL5/FPR1/CASR/MYO7A/C3AR1/AKR1B10/PLCB2/GPR183/LRP10/C5/CNR2/PYY/SLC24A1/SUCNR1/CNR1/PDE1C/OXER1/RCVRN/OPN3/CXCL10/ADCY3/LRAT
WP_CARDIAC_HYPERTROPHIC_RESPONSE	1.3 733 799 18	0.1114 45536	PLA2G2A/PRKG1/TGFB1/EGF/IKBKE/NFATC2/MAP4K1/HDAC7/MAP3K14/NRG1/NFKB1/TNFRSF1A/MAP2K3/MEF2A/MAPK14/CAMK2D/IKBKB/AKT1/IGF1/MAPK7/TGFBR1/MAP3K7/MTOR/PRKCA
REACTOME_NOTCH_HLH_TRANSCRIPTION_PATHWAY	1.3 728 636 89	0.2108 60443	NOTCH3/NOTCH2/HDAC7/TBL1X/MAML1/MAML3/NCOR2/HDAC10/CREBBP/NCOR1/HDAC6/NOTCH4
WP_ENDODERM_DIFFERENTIATION	1.3 727 789 47	0.0580 80346	GATA6/DKK1/FOXA1/EOMES/LAMC1/DAB2/RAB38/GLI2/ZIC5/FOXA2/LEF1/TGFB1/DUSP4/DUSP5/ATP8B2/RARG/ELK4/FOXO1/TRIM5/AHDC1/ZFH4/PLCH1/SMAD3/POU5F1/MAP2K3/HOXA1/CER1/WDHD1/ASCC3/CTR9/EXT1/FOXN3/FOXH1/NCAPG2/BCORL1/CEP250/TCF7/DUSP2/SLC2A12/UBR5/STAT1/AEBP2
REACTOME_RUNX3_REGULATES_P14_ARF	1.3 726 801 9	0.2786 34173	RUNX1/TGFB1/RUNX3/EP300/CDKN2A
ST_GA12_PATHWAY	1.3 723	0.2380 42826	CFB/F2RL1/TEC/F2RL3/VAV1/F2RL2/JUN



	462 84		
KEGG_NEUROTROPHIN_SIGNALING_PATHWAY	1.3 711 151 72	0.0661 76716	NTF3/FASLG/SHC1/NTRK1/PIK3CG/MAPK13/CALML6/PIK3CD/PIK3R5/IRAK3/SH2B3/PLCG2/IRS1/IRAK2/NFKB1/IRS2/RPS6KA3/PRKCD/JUN/NFKBIA/MAP3K3/FOXO3/PLCG1/TRAF6/MAP3K5/SORT1/MAPKAPK2/MAPK14/BDNF/IRAK1/TP53/CAMK2D/RPS6KA4/IKBKB/ABL1/ARHGDIB/AKT1/BRAF/RPS6KA1/PIK3CA/MAPK7/BCL2
REACTOME_ACTIVATION_OF_SMO	1.3 699 446 32	0.2713 45012	EVC2/EVC/BOC/DHH/SMO/IQCE/CDON/GRK2/SHH
REACTOME_ENDOSOMAL_VACUOLAR_PATHWAY	1.3 698 484 95	0.2669 05921	CTSS/CTSL/HLA-C/HLA-B/LNPEP/HLA-F/HLA-E/HLA-G
REACTOME_GAMMA_CARBOXYLATION_HYPUSINE_FORMATION_AND_ARYLSULFATASE_ACTIVATION	1.3 697 093 08	0.1791 2302	ARSI/ARSJ/FURIN/PROS1/GAS6/ARSD/STS/ARSF/ARSG/ARSB/ICMT/SUMF1/ARSL/ARSA/GGCX
BIOCARTA_HSP27_PATHWAY	1.3 690 241 32	0.2814 88179	FASLG/IL1A/HSPB1/FAS/MAPKAPK2/ACTA1/BCL2/CASP3/TNF/MAPKAPK3/APAF1
REACTOME_CD28_CO_STIMULATION	1.3 686 221 75	0.1992 40272	GRAP2/LCK/MAP3K8/CD80/CD28/VAV1/MAP3K14/LYN/PRR5/CD86
REACTOME_ERBB2_REGULATES_CELL_MOTILITY	1.3 680 255 46	0.2713 45012	EREG/ERBB2/HBEGF/EGF/NRG1/BTC
WP_ANDROGEN_RECEPTOR_SIGNALING_PATHWAY	1.3 676	0.0659 54722	RUNX2/FHL2/FLNA/CAV1/CDKN1A/STAT3/FOXO1/JUN/BMF/SP1/ROCK1/SMAD3/TGFB111/ROCK2/ETV5/EP300/SIN3A/LIMK2/PIAS3/BRCA1/EFCAB6/NCOA3/NCOR2/CALR/AR/CCNE1/AKT1/RNF6/ZNF318/CREBBP/CARM1/PTEN/UBE3A/NCOR1/PIAS1/PSMC3IP/NCOA1/NR2C2/RAD9A/TGIF1

	466 04		
WP_TYPE_2_PAPILLARY_RENAL_CELL_CARCINOMA	1.3 667 109 69	0.1980 23862	COL21A1/TGFB2/TGFB1/VEGFA/EPAS1/CTSK/CDKN1A/TGFB3/ARNT/HIF1A/SLC2A1/EP300/DIAPH1/TFE3/PDGFB/CREBBP
REACTOME_PI3K_EVENTS_IN_ERBB2_SIGNALING	1.3 664 441 91	0.2747 30216	EREG/ERBB2/HBEGF/EGF/NRG1/BTC
REACTOME_PEPTIDE_HORMONE_METABOLISM	1.3 660 547 18	0.0659 54722	MME/LEP/ANPEP/GCG/GIP/CTSG/INHBA/CTS2/DPP4/RAB27A/CMA1/CES1/INHBE/PCSK1/ERO1A/ACE/INHB/GZMH/KLF4/ENPEP/SLC30A7/CGB5/CTSD/FFAR4
REACTOME_A_TETRASACCHARIDE_LINKER_SEQUENCE_IS_REQUIRED_FOR_GAG_SYNTHESIS	1.3 647 505 05	0.2005 49854	SDC1/HSPG2/BGN/GPC4/GPC1/GPC5/XYL2/AGRN/SDC2/GPC6/VCAN/SDC4/DCN
WP_NUCLEAR_RECEPTORS	1.3 620 860 83	0.2193 89212	VDR/NR2E1/ROR1/NR4A1/NR1I2/ESR1/ESR2/NR4A2/RARG/RORC/RORA/PPARD/ESRRB/NR2F2
REACTOME_RESPONSE_OF_MTB_TO_PHAGOCYTOSIS	1.3 603 364 5	0.2420 06667	NOS2/CTSG/RNF213
PID_HEDGEHOG_2PATHWAY	1.3 585 247 08	0.2260 86957	GLI2/TGFB2/HHAT/BOC/DHH/SMO/PTCH2/CDON/GRK2/SHH/AKT1/PIK3CA
WP_MFAP5_EFFECT_ON_PERMEABILITY_AND_MOTILITY_OF_ENDOTHELIAL_CELLS_VIA_CYTOSKELETON_REARRANGEMENT	1.3 577	0.2776 61064	MFAP5/ACTN1/ITGB3/VCL/LPP/JUN/PXN/PLCG1

	504 6		
WP_NANOPARTICLE_TRIGGERED_REGULATED_NECROSIS	1.3 577 351 53	0.2578 34938	TICAM1/RIPK3/CASP8/RIPK1/TNFRSF1A
REACTOME_SIGNALING_BY_ERBB2	1.3 575 264 43	0.1535 36005	EREG/GRB7/SHC1/ERBB2/HBEGF/EGF/PTPN12/NRG1/PRKCD/BTC/PTPN18/PLCG1/ERBIN/DIAPH1
WP_CONTROL_OF_IMMUNE_TOLERANCE_BY_VASOACTIVE_INTESTINAL_PEPTIDE	1.3 574 683 71	0.2687 76371	CTLA4/IFNG/IL10/CD80/CD28/TGFB1/CD86/FAS
PID_ECADHERIN_STABILIZATION_PATHWAY	1.3 562 157 41	0.2193 605	MET/ACTN1/EPHA2/VCL/EGF/ZYX/NECTIN2/PLEKHA7/LPP/ARF6/VASP/ROCK1/HGF/AQP3/CTNND1/DIAPH1/IGF1R/CTNNA1
REACTOME_BUTYROPHILIN_BTN_FAMILY_INTERACTIONS	1.3 545 767 19	0.2617 70736	CD209/XDH/PPL
REACTOME_MET_ACTIVATES_RAP1_AND_RAC1	1.3 530 617 37	0.2864 49472	MET/HGF/DOCK7/GRB2/RAPGEF1/RAP1B
REACTOME_EXTRA_NUCLEAR_ESTROGEN_SIGNALING	1.3 522 342 23	0.0943 6981	EREG/GNGT1/MMP7/SHC1/AREG/MMP9/FOS/ESR1/ESR2/MMP3/HBEGF/EGF/CAV1/SRF/NOS3/S1PR3/BTC/FOXO3/HSPB1/SPHK1/ZDHHC7/IGF1R/UHMK1
WP_SREBF_AND_MIR33_IN_CHOLESTEROL_AND_LIPID_HOMEOSTASIS	1.3 496	0.2833 2715	LDLR/ABCA1/SREBF1/PRKAA1/NR1H3/MED15/PPARA/MIR33A/MTOR/MIR33B/PPARGC1A

	892 94		
REACTOME_HDL_REMODELING	1.3 495 213 4	0.2953 48907	LIPG/PLTP
WP_BMP_SIGNALING_PATHWAY_IN_EYELID_DEVELOPMENT	1.3 474 810 24	0.2470 81428	FGF10/INHBB/JUN/DKK2/FOXC2/SMAD1/FOXC1
WP_COPPER_HOMEOSTASIS	1.3 467 228 77	0.1493 87755	STEAP4/STEAP3/XAF1/ADAM9/STEAP1/MT1H/FOXO1/JUN/MT1JP/SP1/ADAM10/FOXO3/ATP7A/STEAP2/MTF1/ADAM17/SOD3/MT1A/TP53/APP/AKT1/BACE1/PTEN/PIK3CA
REACTOME_DOWNSTREAM_SIGNAL_TRANSDUCTION	1.3 443 751 79	0.2388 35979	GRB7/STAT6/STAT5A/PDGFRB/STAT3/PLCG1/PDGFA/RASA1/STAT1/PDGFB/PIK3CA/SOS1/PIK3CB/GRB2/S TAT5B
PID_ENDOTHELIN_PATHWAY	1.3 418 621 45	0.1152 3586	COL1A2/MMP1/COL3A1/ADCY7/GNA15/FOS/PLCB2/SLC9A1/ADCY3/PRKCD/JUN/GNA14/EDNRA/ADCY4/CYSLTR1/ADCY6/PLCB3/JAK2/ADCY9/MAPK14/SLC9A3/PRKCH
WP_MIRNA_REGULATION_OF_PROSTATE_CANCER_SIGNALING_PATHWAYS	1.3 406 478 73	0.1918 42938	MIR4664/CREB3L1/PDGFRB/MIR200A/CDKN1A/NFKB1/FOXO1/NFKBIA/PDGFA/TP53/TCF7/AR/CREBBP/PIK3CA/NFATC2IP/BCL2/SOS1/MTOR/GRB2
REACTOME_SIGNALING_BY_RETINOIC_ACID	1.3 394 010 78	0.1952 43017	ALDH1A3/RDH10/ADH4/CYP26A1/CRABP2/ADH1A/FABP5/RARG/PDK3/CPT1B/PPARD
BIOCARTA_VDR_PATHWAY	1.3 387	0.2413 55091	VDR/BAZ1B/EP300/RXR/CREBBP/CARM1/SUPT16H/NCOR1/NCOA1/ARID1A/HDAC1/CHAF1A/MED1

	397 57		
REACTOME_SYNTHESIS_OF_PA	1.3 384 250 41	0.2319 9704	PLA2R1/PLA2G2A/PLA2G2F/GPAT3/AGPAT2/PLA2G5/ACP6/PLA2G2D/PLA2G4D/PLA2G4B/PLD2/LPCAT1
PID_AJDISS_2PATHWAY	1.3 378 072 96	0.2035 35253	MMP7/MET/IQGAP1/MMP3/EGF/JUP/CDH2/ARF6/PTPN6/ADAM10/CTNND1/BDNF/IGF1R/CTNNA1/ABL1/PTPN1/CREBBP/GNA12/CBLL1/GNA13/RIN2/TIAM1/DNM2/HGS/CASP3/ROBO1
WP_PHYTOCHEMICAL_ACTIVITY_ON_NRF2_TRANSCRIPTIONAL_ACTIVATION	1.3 352 955 67	0.2985 90691	CEBPB/HMOX1/GCLM/MAF/GSTA2/NFE2L2/PIK3CA/PRKCA
REACTOME_INTRA_GOLGI_TRAFFIC	1.3 330 876 37	0.2085 01315	MAN1A1/MAN1C1/MAN2A1/CYTH4/RAB39A/TRIP11/RIC1/CYTH3/RAB36/RGP1/BET1L/YKT6/COG5/GOLIM4/S TX16/CUX1/GOSR1/MAN2A2/GOLGA5
PID_ERBB1_DOWNSTREAM_PATHWAY	1.3 313 482 86	0.1074 52575	SH2D2A/IQGAP1/EGR1/RIN1/ZFP36/ARPC1B/PIK3CD/FOS/DUSP1/F2RL2/EGF/SLC9A1/VAV2/RPS6KA3/STAT 3/SFN/PRKCD/SRF/JUN/WASF2/SMAD1/DUSP6
REACTOME_INTERLEUKIN_17_SIGNALING	1.3 305 914 03	0.1112 98246	NOD2/MAP3K8/FOS/IL17RA/DUSP4/IRAK2/NFKB1/RPS6KA3/JUN/IL25/DUSP6/MAP2K3/TRAF6/MEF2A/DUSP3 /MAPKAP2/MAPK14/IRAK1/IL17RC/TAB3/IKBKB/CUL1/RPS6KA1/TAB2/MAPK7/MAP3K7/UBC
REACTOME_METABOLISM_OF_WATER_SOLUBLE_VITAMINS_AND_COFACTORS	1.3 297 673 92	0.0859 72	PTGS2/NAMPT/MOCOS/PTGIS/SLC2A3/SLC52A1/NNMT/TCN1/VNN1/ENPP1/PARP14/PARP10/NT5E/VNN2/P ARP4/ACP5/FOLR2/ABCC1/ACACB/SLC2A1/HLCS/MTR/CUBN/NADK/PARP9/SHMT1/SLC25A19/SLC5A6/MTH FR/MTHFD1/CYP8B1/MTHFD1L/PANK2
REACTOME_DISASSEMBLY_OF_THE_DESTRUCTI ON_COMPLEX_AND_RECRUITMENT_OF_AXIN_TO _THE_MEMBRANE	1.3 290	0.2353 99597	FZD1/WNT3A/FZD5/CAV1/FZD2/CSNK1G2/WNT1/LRP5

	512 43		
REACTOME_RHO_GTPASES_ACTIVATE_ROCKS	1.3 283 392 6	0.2786 34173	MYH9/MYL9/LIMK1/MYH11/ROCK1/ROCK2/LIMK2
WP_CANONICAL_AND_NONCANONICAL_NOTCH_SIGNALING	1.3 279 212 26	0.2300 08782	DLK1/MFAP2/NOTCH3/LEF1/NOTCH2/ADAM10/DLL4/RRAS/JAG1/MAML1/MAML3/JAG2
REACTOME_DEATH_RECEPTOR_SIGNALLING	1.3 279 118 08	0.1045 07116	FASLG/TNFAIP3/BIRC3/TNFRSF10A/TNFRSF10D/ARHGEF35/VAV1/TNFRSF10B/FGD2/AKAP13/VAV2/TRAF1/ARHGEF5/NFKB1/CASP8/MYD88/RIPK1/PLEKHG2/TNFSF10/CFLAR/CASP10/TNFRSF1A/CASP2/NFKBIA/RNF31/BCL2L11/ARHGEF19/ARHGEF26/TRAF6/FAS/ARHGEF1/ARHGEF40/TRIO/ARHGEF18/ADAM17/ARHGEF15/IRAK1/ARHGEF12/SQSTM1/ARHGEF10/OTUD7B/NCSTN/FGD4/OTULIN/TAB3/ARHGEF6/IKBKB/NSMAF/CYLD/TRADD/TAB2/VAV3/MAP3K7/USP4/SOS1/GNA13/RBCK1/UBC/TIAM1/PRDM4/PREX1/PLEKHG5
REACTOME_TP53_REGULATES_TRANSCRIPTION_OF_CELL_CYCLE_GENES	1.3 265 473 73	0.1908 40103	PLAGL1/TNKS1BP1/E2F7/E2F8/CDKN1A/ARID3A/SFN/PLK3/GADD45A/EP300/CNOT1/TP53/PLK2/CNOT4/CNE1/CARM1/TFDP1/CDK2/CNOT3
PID_IL8_CXCR1_PATHWAY	1.3 234 875 49	0.2361 44869	CXCR1/CXCL8/PIK3R6/PIK3CG/GNA15/PLCB2/HCK/GNA14/LYN/PLCB3/FGR/CBL/GRK2
WP_OXIDATIVE_STRESS	1.3 225 548 31	0.2573 96105	XDH/SOD2/CYBB/JUNB/FOS/HMOX1/NFKB1/SP1/MAPK14/SOD3/MGST1
REACTOME_RESOLUTION_OF_D_LOOP_STRUCTURES_THROUGH_SYNTHESIS_DEPENDENT_STRAND_ANNEALING_SDSA_	1.3 207 194 01	0.2542 07405	RTEL1/BRCA1/RMI2/TOP3A/BARD1/ATM/RBBP8/BRCA2/RAD50/XRCC2/WRN/RAD51D/BRIP1/BLM/XRCC3
WP_BLOOD_CLOTTING_CASCADE	1.3 157	0.2735 93208	SERPINE1/SERPIN2/PLAU/F3/FGG/F11/KLK1/VWF/KLKB1

	211 79		
WP_HOSTPATHOGEN_INTERACTION_OF_HUMAN_CORONA_VIRUSES_APOPTOSIS	1.3 156 465 21	0.2747 30216	FASLG/MAPK13/MCL1/CASP8/CASP7/BCL2L11/MAPK14/AKT1/BCL2/CASP3/TNF/FADD/BAX/APAF1
REACTOME_G_ALPHA_Q_SIGNALLING_EVENTS	1.3 137 493 65	0.0440 29464	XCR1/GNGT1/BDKRB1/FPR2/PTGFR/UTS2/CCL23/GCG/ITPR3/PROK2/BDKRB2/P2RY10/GPR39/F2RL1/PROKR1/NTS/GPR132/LTB4R2/P2RY6/LTB4R/FFAR2/FFAR3/SAA1/F2RL3/RGS2/GNA15/MMP3/HCRTR1/TAC3/F2RL2/HBEGF/CASR/HRH1/PLCB2/PTAFR/TRPC7/GRPR/P2RY1/QRFP/XCL2/KISS1R/AGTR1/TBXA2R/OXTR/RPS6KA3/GPR65/PRKCD/GNA14/F2R/EDNRA/ITPR2/NMUR1/GPR68/GNRH2/GRK5/RGS17/XCL1/CYSLTR1/FFAR4/RGS16/ANXA1/RASGRP1/ADRA1D/PLCB3
REACTOME_BASIGIN_INTERACTIONS	1.3 127 723 54	0.2747 30216	MMP1/ITGA3/SLC16A3/ITGB1/CAV1/SLC7A8/SPN/SLC7A7
PID_NOTCH_PATHWAY	1.3 126 012 39	0.1546 47887	DLK1/MFAP2/ADAM12/MFAP5/GATA3/NOTCH3/FURIN/NOTCH2/CDKN1A/ADAM10/NUMB/EP300/DLL4/JAG1/MAML1/NCSTN/CBL/JAG2/NCOR2
KEGG_AMINO_SUGAR_AND_NUCLEOTIDE_SUGAR_METABOLISM	1.3 102 628 17	0.2574 80732	HK3/GFPT2/HK2/HEXB/UAP1/NPL/RENBP/HEXA/HK1/AMDHD2/PMM2/GMPPB/PGM2/GNPNAT1/NANP/GPI
REACTOME_SIGNALING_BY_HIPPO	1.3 089 253 33	0.2787 3201	LATS2/YAP1/WWTR1/AMOTL1/MOB1A/STK4/STK3/LATS1/SAV1/WWC1/MOB1B/TJP1/CASP3/NPHP4/DVL2
REACTOME_ANTIVIRAL_MECHANISM_BY_IFN_STIMULATED_GENES	1.3 069 005 64	0.1534 03458	OAS3/FLNA/MX2/MX1/NUP210/POM121/UBA7/POM121C/OAS2/DDX58/OASL/PLCG1/EIF4G1/OAS1/NUP98/TRIM25/TPR/RNASEL/HERC5/STAT1/USP18/NUP188/NUP205/NEDD4/NUP62/NUP153/NUP214/KPNB1/RANBP2/ARIH1/FLNB/UBC/NUP155/NUP50/EIF4G3/EIF4A1/NUP160/NUP58/EIF2AK2
WNT_SIGNALING	1.3 067	0.1548 5213	DKK1/SFRP4/FZD1/WNT3A/FZD7/TBXT/FZD8/FOSL1/FZD5/CCN4/LEF1/TLE1/CSNK1G1/JUN/FZD2/FZD4/DAM1/EP300/FZD6

	648 46		
BIOCARTA_STATHMIN_PATHWAY	1.3 064 521 5	0.2787 3201	CD3E/CD3G/CD2/MAPK13/CD3D/CD247/HSPA5
WP_EGFR_TYROSINE_KINASE_INHIBITOR_RESISTANCE	1.3 049 782 07	0.1540 45391	IL6/MET/SHC1/ERBB2/PIK3CD/IL6R/EGF/PDGFRB/GAS6/VEGFA/PLCG2/NRG1/STAT3/AXL/PDGFD/HGF/BCL2L11/FOXO3/KDR/PLCG1/PDGFA/JAK2/RRAS
PID_HES_HEY_PATHWAY	1.3 009 817 86	0.2261 00386	GATA6/RUNX2/RCAN1/GAA/CD4/TWIST1/TLE1/STAT3/ARNT/HIF1A/EP300/KDR/JAK2/MAML1/GHR/GATA1/NCOR2/CAMK2D/AR/RBBP8/CREBBP/HES1/NCOR1
REACTOME_CD209_DC_SIGN_SIGNALING	1.3 002 973 35	0.2838 42795	CD209/RELB/ICAM3/NFKB1/LYN/EP300
PID_RXR_VDR_PATHWAY	1.3 000 204 8	0.2776 61064	VDR/ABCA1/NR4A1/TGFB1/RARG/PPARD/SREBF1/RXRA/NCOR2/PPARG/BCL2/NR1H3/PPARA/NCOA1/TNF/FAM120B/RPS6KB1/MED1
KEGG_GLYCOLYSIS_GLUONEOGENESIS	1.2 998 977 58	0.1529 41176	ALDH1A3/HK3/PCK1/ALDH3B2/ADH4/ALDH3A1/ALDH3B1/LDHC/ADH1A/HK2/GALM/PCK2
KEGG_N_GLYCAN_BIOSYNTHESIS	1.2 997 331 2	0.2571 70898	B4GALT1/MAN1A1/MAN1C1/MAN2A1/MGAT2/MGAT4A/MGAT4B/GANAB/MGAT1/STT3A/STT3B/RPN2/ALG12/MOGS/ALG2/MGAT5
WP_MAMMARY_GLAND_DEVELOPMENT_PATHWAY_PREGNANCY_AND_LACTATION_STAGE_3_OF_4	1.2 940	0.2605 40318	PRLR/TNFSF11/GJB2/TNFRSF11A/ERBB2/CEBPB/ESR1/ESR2/CAV1



	665 74		
KEGG_GNRH_SIGNALING_PATHWAY	1.2 932 438 64	0.1403 1673	ITPR3/MMP14/PLA2G2A/PLA2G2F/PLA2G4E/MAPK13/CALML6/ADCY7/HBEGF/PLCB2/ADCY3/PRKCD/PLA2G5/JUN/ITPR2/GNRH2/ADCY4/MAP3K3/PLA2G2D/MAP2K3/JMJD7-PLA2G4B/ADCY6/PLCB3/CACNA1C/ADCY9/MAPK14/PLA2G2C/GNRH1/PLA2G4B/PLD2/CAMK2D/MAP3K2/PRKACA
WP_FACTORS_AND_PATHWAYS_AFFECTING_INSULINLIKE_GROWTH_FACTOR_IGF1AKT_SIGNALING	1.2 930 818 37	0.2912 80277	PIK3CG/ITGB1/FBXO32/IRS1/TRIM63/NFKB1/TNFRSF1A/SMAD3/NEB/IGFBP5/IGF1R/AKT1/PTEN/IGF1/WASL/MTOR/RPTOR/DEPTOR/PPARGC1A/RPS6KB1
WP_NEURAL_CREST_CELL_MIGRATION_DURING_DEVELOPMENT	1.2 899 664 76	0.2713 45012	MMP8/EPHB4/PIK3R6/PIK3CG/PIK3CD/MMP9/PIK3R5/FOS/CDH11/F2RL2/TWIST1/STAT3/JUN
BIOCARTA_TNFR1_PATHWAY	1.2 896 685 7	0.2669 05921	LMNA/CASP8/RIPK1/JUN/TNFRSF1A/CASP2/PRKDC/ARHGDI2/TRADD/MAP3K7/CASP3/TNF/TRAF2/PAK2/LMNB2/FADD
PID_TGFBR_PATHWAY	1.2 867 527 02	0.1899 0411	SHC1/DAB2/TGFBR2/TGFB2/YAP1/CCN2/PML/TGFB1/CAV1/TGFB3/PPP1R15A
WP_GENES_CONTROLLING_RENAL_NEPHROGENESIS	1.2 834 216 45	0.2815 993	TCF21/ITGA3/KIRREL1/CXCL12/CD36/NOTCH2/ITGB1/CD2AP/LAMB2/EMX2/PDGFRB/VEGFA/WT1/SLIT2/PAX2/FOXC2/FOXC1/KDR
KEGG_GALACTOSE_METABOLISM	1.2 823 745 52	0.2953 48907	HK3/B4GALT1/GAA/HK2/LCT/MGAM/PFKL/GLB1/HK1
WP_HAIR_FOLLICLE_DEVELOPMENT_CYTODIFFERENTIATION_PART_3_OF_3	1.2 819	0.2005 49854	FOSB/DKK1/FST/FZD1/SPINK6/HOXC12/GATA3/DSC2/GLI2/KLK13/EGR2/IFNG/FOS/CCN2/ELANE/LEF1/TGFB1/NOTCH2/GSDMA/CASP14/NFKB1/RUNX3/JUN/PERP/KRT15/SMAD1/NFATC1/S100A4/IGFBP5/KITLG/SOX9

	513 31		
WP_INTEGRATED_CANCER_PATHWAY	1.2 817 755 37	0.2819 06957	MMP1/CDKN2B/CDKN1A/BACH1/CASP8/SMAD3/MAP3K5/BRCA1/TP53/BARD1/ATM/STAT1/AKT1/RAD50/CDK2/ATR/PTEN/BCL2/NOXA1/CASP3/CDC25B/MSH6/BLM/BAX/SMAD2
WP_GLUTATHIONE_METABOLISM	1.2 778 856 13	0.3	ANPEP/OPLAH/GGT2/GGTLC2/GCLM/GGT5/GSTM1/GPX2
REACTOME_TRANSLATION_OF_STRUCTURAL_PROTEINS	1.2 777 310 92	0.2767 18841	ST3GAL1/ST6GALNAC2/PARP14/PARP10/PARP4/GANAB/MGAT1/PARP9/PRKCSH/MOGS/CANX/ST3GAL2/UBC/GALNT1/ST3GAL4/PARP16
WP_RENIN_ANGIOTENSIN_ALDOSTERONE_SYSTEM_RAAS	1.2 769 340 29	0.2906 38196	ITPR3/CTSG/AGTR2/CMA1/CALML6/CREB3L1/PLCB2/CREB3L2/AGTR1/ACE/ITPR2/CALML4
REACTOME_TRANSCRIPTIONAL_REGULATION_BY_VENTX	1.2 749 663 13	0.2789 19558	IL6/VENTX/CEBPB/LEF1/CSF1R/MOV10/NFKB1
WP_CHROMOSOMAL_AND_MICROSATELLITE_INSTABILITY_IN_COLORECTAL_CANCER	1.2 747 546 01	0.1871 56711	PTGS2/TGFB2/TGFB2/REL/RAC2/FOS/LEF1/TGFB1/GADD45B/CDKN1A/TGFB3/JUN/GADD45A/SMAD3/BCL2L1/PMAIP1/TP53/TCF7/ARAF/DDB2
PID_HEDGEHOG_GLI_PATHWAY	1.2 742 699 11	0.2832 12787	GLI1/GLI3/GLI2/FOXA2/CSNK1G1/PRKCD/LGALS3/STK36/SMO/SIN3A/SIN3B/CSNK1G2/PRKACA/SHH/RAB23/AKT1/CREBBP/IFT172/CSNK1D/PIAS1/GNAI2
REACTOME_DISEASES_OF_SIGNAL_TRANSDUCTION_BY_GROWTH_FACTOR_RECEPTORS_AND_SECOND_MESSENGERS	1.2 728	0.0674 91276	EREG/DKK1/ICOS/MET/FN1/SHC1/WNT3A/AREG/LCK/FGF19/TGFB2/TRAT1/ITGB3/IQGAP1/FZD8/FGF10/FZD5/ERBB2/FGFR1/CD80/PIK3CD/SPRED3/CD28/VCL/PIK3AP1/NR4A1/RAC2/HHAT/ESR1/ESR2/VAV1/TGFB1/HBEGF/EGF/STAT5A/PTPN12/PDGFRB/TLN1/DHH/ETV6/FGG/HDAC7/ZC3HAV1/IRS1/BIN2/LMNA/CDKN1A/N

	034 29		RG1/IRS2/SPRED2/STAT3/VWF/FOXO1/LYN/DKK2/FGF5/KL/KREMEN2/ADAM10/SMAD3/HGF/FZD4/DUSP6/BTC/TBL1X/SEL1L/PRR5/BCL2L11/FOXO3/EP300/LRRFIP1/KDR/APBB1IP/DLL4/PSME4/PLCG1/KITLG/PDGFA/FZD6/JAK2/CD86/ERBIN/JAG1/ADAM17/MAML1/GOLGA4/MAML3/ITGA2B/AKAP9/NCSTN/SPRED1/CBL/ARAF/JAG2/NCOR2/CAMK2D/LRP5/STAT1/SND1/MAP3K11/MIB2/AP3B1/PDGFB/SHH/HDAC10/FGF7/AGTRAP/AKT1/SYVN1/BRAF/CREBBP/CUL1/CNTRL/MPRIIP/HEYL/POLR2A/KDM7A/PTEN/CUX1/EPGN/PIK3CA/HES1/NCOR1
PID_ER_NONGENOMIC_PATHWAY	1.2 685 472 34	0.2906 38196	SHC1/GNA15/MMP9/ESR1/ESR2/HBEGF/PLCB2/MSN/GNA14/NOS3/ROCK2/PLCB3/IGF1R/AKT1/MMP2/PIK3CA/SOS1/GNAI2/GNA13
REACTOME_SUMOYLATION_OF_UBIQUITINYLATED_PROTEINS	1.2 681 071 9	0.2820 0569	PML/NUP210/POM121/POM121C/NUP98/TPR/NUP188/NUP205/NUP62/NUP153/NUP214/RANBP2/PIAS1/NUP155/NUP50/NUP160/NUP58
REACTOME_REGULATION_OF_LIPID_METABOLISM_BY_PPARG	1.2 678 356 95	0.1555 35942	APOA2/ANGPTL4/G0S2/FHL2/PLIN2/HELZ2/ABCA1/NPAS2/CD36/GLIPR1/CYP7A1/ACSL1/PPARGC1B/ARNT/SP1/RORA/MED14/TBL1X/EP300/MTF1/SREBF1/CLOCK/SIN3A/MED12/RGL1/SLC27A1/NCOA3/RXRA/MED23/SIN3B/NCOR2/PPARG/THRAP3/CREBBP/CARM1/NR1D1/CPT1A/NCOR1/NR1H3/MED15/PPARA/NCOA1/ABCB4/APOA1/NCOA6/MED13/PPARGC1A/FAM120B/MED25/GPS2/MED26/ARNTL/NFYA/MED16/MED1/TGS1
ST_ERK1_ERK2_MAPK_PATHWAY	1.2 649 229 39	0.2769 43412	SHC1/MAP3K8/DUSP4/KLF6/NFKB1/MKNK2/RPS6KA3/MKNK1/TRAF3/DUSP6/EEF2K/ARAF/BRAF/RPS6KA1/CREB5/SOS1/GRB2/RPS6KA2
REACTOME_DAP12_SIGNALING	1.2 610 883 15	0.2895 29418	GRAP2/SHC1/LCK/LCP2/SYK/PLCG2/VAV2/KLRD1/PLCG1/HLA-E/BTK/LAT/VAV3/PIK3CA/SOS1/PIK3CB/GRB2
WP_FERROPTOSIS	1.2 600 700 16	0.2953 48907	CP/STEAP3/CYBB/SLC39A14/SLC39A8/MAP1LC3C/ACSL1/HMOX1/GCLM/LPCAT3/SAT1/ACSL3/ACSL5/TP53
REACTOME_TOLL_LIKE_RECEPTOR_10_TLR10_CASCADE	1.2 587	0.1979 47081	NOD2/SAA1/MAP3K8/TLR5/NFKB2/FOS/DUSP4/IRAK2/NFKB1/RPS6KA3/MYD88/JUN/NFKBIA/S100A12/DUSP6/MAP2K3/TRAF6/MEF2A/DUSP3/MAPKAPK2/MAPK14/IRAK1/TAB3/IKBK/APP/CUL1/RPS6KA1/TAB2/MAPK7

	736 28		
PID_MAPK_TRK_PATHWAY	1.2 560 264 52	0.2953 48907	NTF3/EGR1/FOS/TRPV1/PRKCD/SRF/MAP2K3/MAPKAPK2/MAPK14/EHD4/MAP3K2/BRAF/RPS6KA1/MAPK7/RUSC1
WP_TRYPTOPHAN_METABOLISM	1.2 533 321 38	0.2769 43412	CYP1B1/TDO2/TPH1/KYNU/CYP4F12/CYP2F1/ACMSD/MAOB/OGDH/WARS1/AOC1
BIOCARTA_PDGF_PATHWAY	1.2 511 569 59	0.2951 3975	SHC1/PIK3CG/FOS/STAT5A/STAT3/SRF/JUN/PLCG1/PDGFA/RASA1/STAT1/PIK3CA/SOS1/PRKCA/GRB2
REACTOME_HEPARAN_SULFATE_HEPARIN_HS_GAG_METABOLISM	1.2 511 033 28	0.2294 60505	HS3ST3B1/SDC1/HSPG2/BGN/GPC4/HPSE/HS3ST3A1/GUSB/HGSNAT/GPC1/HS6ST1/GPC5/SGSH/XYL2/A GRN/SDC2/GPC6/VCAN/SDC4/EXT1/DCN/GLB1/EXT2/IDUA
PID_EPHRINB_REV_PATHWAY	1.2 459 014 21	0.2864 49472	LCK/EPHB4/ITGB3/EFNB2/BLK/HCK/FGG/LYN/FGR/CXCR4/ITGA2B/RGS3
KEGG_HYPERTROPHIC_CARDIOMYOPATHY_HCM	1.2 440 204 86	0.2185 6327	IL6/ITGA2/LAMA2/ITGA11/ITGA4/ITGA3/ITGB4/ITGA5/ITGB3/ITGA10/TGFB2/ITGB7/TGFB1/ITGB1/ITGB5/MYBP C3/LMNA/ITGA1/TGFB3/CACNA2D4/ACE/TPM2/TPM4/ITGA7/SLC8A1/DMD
WP_MIRNA_REGULATION_OF_P53_PATHWAY_IN_PROSTATE_CANCER	1.2 398 265 64	0.2985 90691	SERPINE1/TNFRSF10B/CASP8/PERP/PMAIP1/MIR27B/TP53/DDB2/ATM/SHISA5/PTEN/SESN3/MIR4482/CASP 3/ZMAT3/BAX/APAF1
REACTOME_REGULATION_OF_CHOLESTEROL_BIOSYNTHESIS_BY_SREBP_SREBF_	1.2 374	0.2405 9466	HELZ2/CYP51A1/SEC24D/SP1/ACACB/INSIG1/TBL1X/MTF1/SREBF1/SEC23A/RXRA/SEC24A/CREBBP/CARM 1/KPNB1/MBTPS2/SEC24C/PPARA/NCOA1/MBTPS1/NCOA6/ELOVL6/LSS/SCAP/SEC24B/NFYA/MED1/TGS1/INSIG2

	311 63		
REACTOME_METABOLISM_OF_VITAMINS_AND_COFACTORS	1.2 369 528 06	0.1152 3586	PTGS2/SDC1/NAMPT/APOA2/MOCOS/HSPG2/PTGIS/SLC2A3/LRP1/APOB/LDLR/SLC52A1/GPC4/NNMT/TCN1/GCH1/PLB1/VNN1/AKR1B10/ENPP1/LRP10/PARP14/PARP10/NT5E/VNN2/PARP4/ACP5/LRAT/FOLR2/GPC1/NOS3/ABCC1/ACACB/GCHFR/SLC2A1/GPC5/HLCS/LPL/MTR/AGRN/CUBN/SDC2
REACTOME_NUCLEAR_SIGNALING_BY_ERBB4	1.2 357 238 85	0.2953 48907	EREG/YAP1/CXCL12/ESR1/HBEGF/STAT5A/NRG1
PID_E2F_PATHWAY	1.2 342 037 05	0.2241 19832	SERPINE1/HIC1/CES1/PLAU/E2F7/CDKN1A/MCL1/TRRAP/CASP7/CES3/SP1/MCM3/EP300/SMARCA2/CDKN2A/BRCA1/POLA1/TFE3/ATM/RBBP8/CCNE1/CREBBP/TFDP1/CDK2
PID_WNT_NONCANONICAL_PATHWAY	1.2 331 146 13	0.2999 67365	ROR2/FZD7/FZD5/FLNA/CTHRC1/NFATC2/FZD2/ROCK1/DAAM1/FZD6
REACTOME_PHASE_I_FUNCTIONALIZATION_OF_COMPOUNDS	1.2 324 226 54	0.2248 87654	CYP1B1/CYP4F22/PTGIS/FMO1/CES1/CYP4F2/PTGS1/ADH4/CYP26A1/CYP2W1/ALDH3A1/CYP4F12/CYP51A1/ADH1A/CYP7A1/CYP2F1/AOC3/MAOB/ARNT/CES3/CYP2S1/TBXAS1/AOC1/CYP24A1
PID_RAC1_PATHWAY	1.2 274 854 09	0.2620 64469	CYBB/IQGAP1/ARPC1B/NCF2/STAT5A/PLCB2/LIMK1/NCF1/STAT3/JUN/IQGAP3/WASF2/MAP2K3/MAPK14/ACTR2/CTNNA1/MAP3K11
REACTOME_SYNTHESIS_OF_PIP2_AT_THE_PLASMA_MEMBRANE	1.2 261 239 71	0.2982 056	PIK3R6/PIK3CG/PIK3CD/PLEKHA4/PIK3R5/INPP5D/SYNJ2/INPP4B/INPPL1/RUFY1/PI4K2B/PLEKHA8/PIK3C2A/PTEN/INPP4A/PI4K2A/PIK3CA/SBF2/PIP5K1A/PLEKHA2/MTM1/MTMR1/PIK3CB/PIP5K1C/PTPN13/MTMR3
PID_FGF_PATHWAY	1.2 213	0.2798 40598	MET/SHC1/RUNX2/PLAUR/FGF19/FGFR1/MMP9/PLAU/FOS/SSH1/CDH2/JUN/SPRY2/HGF/SPP1/SDC2/PLCG1/CTNND1

	451 74		
KEGG_INOSITOL_PHOSPHATE_METABOLISM	1.2 154 440 98	0.2927 89353	PLCZ1/PIK3CG/PIK3CD/IMPA2/PLCB2/PLCG2/SYNJ2/PLCE1/INPP4B/INPPL1/PLCG1/PLCB3/IPPK/INPP5B/PIK3C2A/PTEN/INPP4A/PIK3CA/MIOX/PIP5K1A/PIKFYVE/ITPKB/PIK3CB/PIP5K1C
KEGG_VASCULAR_SMOOTH_MUSCLE_CONTRACTION	1.2 126 005 4	0.2280 92883	ITPR3/PLA2G2A/PLA2G2F/PTGIR/PLA2G4E/CALML6/ADCY7/ACTG2/PRKG1/CALD1/NPR1/PLCB2/MYL9/AGTR1/ADCY3/PRKCD/PLA2G5/KCNMB3/EDNRA/ITPR2/ACTA2/MYH11/ADCY4/PLA2G2D/ROCK1/ROCK2/JMJD7-PLA2G4B/ADCY6/ADRA1D/PLCB3/CACNA1C/ADCY9/NPR2/ARHGEF1/PLA2G2C/AVPR1A/ARHGEF12/RAMP3/PLA2G4B/ARAF/ADORA2A/PRKCH
KEGG_INSULIN_SIGNALING_PATHWAY	1.2 091 894 87	0.2182 30186	CBLC/HK3/PCK1/SHC1/SOCS3/PPP1R3B/PIK3CG/CALML6/PYGL/PIK3CD/PIK3R5/PDE3A/SOCS1/HK2/PTPRF/INPP5D/IRS1/TRIP10/PCK2/IRS2/MKMK2/FOXO1/ACACB/MKMK1/FBP1/GYS1/SREBF1/PPP1R3D/PHKA2/INSR/CBL/ARAF/HK1/PRKACA/IKBKB/PTPN1/SOCS2/AKT1/BRAF
KEGG_ERBB_SIGNALING_PATHWAY	1.1 984 634 85	0.2769 43412	EREG/CBLC/SHC1/AREG/PIK3CG/ERBB2/PIK3CD/PIK3R5/HBEGF/EGF/STAT5A/PLCG2/ABL2/CDKN1A/NRG1/JUN
REACTOME_STIMULI_SENSING_CHANNELS	1.1 974 894 25	0.2479 58865	SCNN1B/ANO1/ANO9/TRPA1/WNK4/SCNN1G/TRPM8/SCNN1A/TRPV4/STOML3/TTYH3/RYR3/TRPM2/MLKL/CLCA2/TRPC7/TRPM5/RIPK3/TRPV1/TRPV2/CLCNKB/ANO6/RIPK1/TRPM3/STOM/CLCA1/TPCN1/SLC17A3
REACTOME_INTRACELLULAR_SIGNALING_BY_SECOND_MESSENGERS	1.1 962 663 47	0.1729 31716	EREG/ICOS/ITPR3/MET/SNAI2/AREG/LCK/FGF19/TRAT1/IER3/EGR1/SALL4/FGF10/ERBB2/ADCY7/NR2E1/FGFR1/CD80/PIK3CD/IL1RL1/CD28/PIK3AP1/NR4A1/RAC2/PML/IL1RAP/ESR1/ESR2/VAV1/HBEGF/EGF/MOV10/PDGFRB/HDAC7/IRS1/PDE1C/CDKN1A/NRG1/IRS2/ADCY3/MYD88/FOXO1/PRKCD/JUN/REST/ITPR2/RCOR1/FGF5/KL/ADCY4/HGF/BTC/PRR5/FOXO3/ADCY6/PHC3/PSME4/PLCG1/KITLG/PDGFA/CD86/TRAFF6/ADCY9
WP_GENES_INVOLVED_IN_MALE_INFERTILITY	1.1 954 775 78	0.2631 7148	THBS1/DAZL/EPPIN/NOS2/FASLG/SOD2/SIRPG/LTF/APOB/H3-4/PIWIL1/MMP9/ESR1/ESR2/HORMAD1/RAG1/NOS3/MSH5/TSSK4/TMEM132E/MTR/ETV5/EP300/EPSTI1/CLOCK/MOV10L1/FAS/PMS2/CDC42BPA/VCX/SOD3/INSR/SHMT1/MTHFR/MTHFD1/ATM/CHD2/AR/POLG/PIWIL4/NFE2L2/HLA-DRA/CCNK/CCNT1/MMP2/PIWIL2/CREBBP/XPC/BRCA2/TCN2/XRCC2/SIRPA/MLH3/BCL2/UBR2/ERCC2/UBD

KEGG_WNT_SIGNALING_PATHWAY	1.1 806 879 31	0.2804 5977	SFRP2/DKK1/SFRP4/MMP7/FZD1/WNT3A/FZD7/FZD8/FOSL1/FZD5/NFATC4/RAC2/LEF1/PLCB2/NFATC2/SFRP5/JUN/FZD10/DKK2/PPARD/FZD2/ROCK1/SMAD3/NFATC1/FZD4/TBL1X/NKD2/DAAM1/NFAT5/VANGL1/ROCK2/NFATC3/EP300/CER1/PLCB3/PRICKLE2/FZD6
WP_INTEGRATED_BREAST_CANCER_PATHWAY	1.1 740 031 74	0.2806 2499	MMP1/FOSL2/TGFBR2/FOSL1/PML/ESR1/GRN/ITPKC/VEGFA/IRS1/NFKB1/BACH1/CASP8/FOXO1/JUN/PLK3/SP1/GADD45A/SMAD1/ANXA1/EP300/WEE1/RRAS/TPR/BRCA1/TP53/NCOA3/ARAF/ZNF655/BARD1/ATM/FILIP1/STAT1/AR/ABL1/DAG1/AKT1/BRAF/TRADD/BRCA2/RAD50/CDK2/ATR/PPP4R3A/PTEN/APOBEC3G/CSNK1D/BCL2/TGFBR1/PIAS1/MTOR/SMAD6/NOXA1/FER/MAP3K7CL/STK11/CASP3/CDC25B/MAX/HDAC1
REACTOME_MAPK_FAMILY_SIGNALING_CASCADES	1.1 564 977 98	0.1934 14634	EREG/CSF2/IL6/IL2RA/MMP10/MET/IL2RB/CSF2RB/FN1/SHC1/JAK3/IGF2BP1/AREG/FGF19/IL2RG/ITGB3/IQGAP1/FGF10/ERBB2/FGFR1/PTPN7/SPTA1/SPRED3/IL6R/VCL/FLT3/DUSP1/ARTN/HBEGF/MIR34C/EGF/MOV10/PDGFRB/RASAL3/DUSP4/RASGRP4/TLN1/FGG/IRS1/RAG1/DUSP5/NRG1/IRS2/SPRED2/MIR34B/CDC42EP3/VWF/FOXO1/MAPK4/JUN/FGF5/KL/SPTBN5/ABHD17C/ANGPT1/HGF/DUSP6/BTC/TYK2/FOXO3/CDC42EP5/HSPB1/RASGRP1/APBB1IP/PSME4/KITLG/RASA2/PDGFA
REACTOME_SIGNALING_BY_NTRKS	1.1 480 273 1	0.2776 61064	FOSB/NTF3/SHC1/PCSK5/EGR1/FOSL1/EGR2/NTRK1/TPH1/MAPK13/EGR3/FURIN/JUNB/FOS/DUSP4/F3/RRAD/IRS1/IRS2/RPS6KA3/STAT3/TRIB1/SRF/REST
WP_MAPK_SIGNALING_PATHWAY	1.1 362 271 27	0.2773 05047	NTF3/IL1R1/FASLG/IL1R2/FGF19/TGFBR2/PLA2G4E/FGF10/NTRK1/MAPK13/TGFB2/RELB/MAP3K8/FGFR1/MAP3K6/PTPN7/FLNA/NFKB2/CD14/NR4A1/RAC2/FOS/IL1B/DUSP1/TGFB1/EGF/PDGFRB/DUSP4/RASGRP4/MAP4K1/IL1A/HSPA1B/MAP3K14/TGFB3/CACNA2D4/NFKB1/MKNK2/ELK4/RPS6KA3/HSPA6/HSPA1A/PRKCD/SRFB/JUN/FGF11/MAP3K20/TNFRSF1A/FGF5/MKNK1/GADD45A/NFATC1/DUSP6/MAP2K3/NFATC3/PLA2G4D/HSPB1/RASGRP1/RASA2/PDGFA/PLA2G4F/CACNA1C/MAP3K12/TRAF6/MAP3K5/RRAS/FAS/CACNG6/DUSP3/MAPKAPK2/MAPK14/BDNF/STK4/TP53/PLA2G4B/RASA1/DUSP2/ARAF/STK3/MAP3K2/MAP3K11/PRKACA/RPS6KA4/IKBKB/PDGFB/CACNA1G
REACTOME_MRNA_SPLICING	- 1.1 816 839 67	0.2815 56973	GTF2F2/CSTF3/SNRPA1/CD2BP2/PCBP2/HNRNPC/LSM6/PPIL3/ALYREF/WBP4/SRSF3/RBMX/SNRNP40/BCAS2/FIP1L1/SNRNP27/MAGOHB/LSM5/POLR2C/DNAJC8/POLR2L/SF3B6/SNRNP35/POLR2J/SNRPB2/BUD31/TXNL4A/ZCRB1/SNRPD1/YBX1/SNRPF/PQBP1/LSM4/SNRPB/PUF60/SNU13/SNRPC/CWC15/POLR2K/SF3B5/POLR2I/PPIH/ZMAT5/PHF5A/LSM3/POLR2G/SNRPD2/SNRPE/PPIL1/SNRNP25/LSM7/LSM2/SNRPG/SNRPN/ELAVL2/POLR2F
REACTOME_SLC_MEDIATED_TRANSMEMBRANE_TRANSPORT	- 1.1 832	0.2735 93208	SLC5A7/SLC24A5/SLC22A2/SLC15A2/SLC26A3/SLC36A2/SLC13A2/PDZD11/SRI/SLC13A5/SLC2A2/SLC6A3/SLC26A9/SLC6A19/LCN12/SLC4A9/SLC30A8/SLC3A1/SLC5A1/SLC14A2/SLC38A1/ARL2/SLC4A10/SLCO1B1/SLC13A1/SLC2A13/SLC45A3/SLC25A4/SLC24A2/SLC18A1/SLC44A5/SLC6A13/SLC22A8/SLC14A1/SLC5A12/AVP/SLC22A12/SLC44A1/SLCO1B3/SLC6A20/LCN1/LCN9/SLC39A2/SLCO1A2/SLC5A11/SLC32A1/APOD/SLC1A1/

	020 61		SLC30A3/SLC12A5/SLC5A8/SLC6A15/SLC8A2/SLC1A6/LCN15/SLC17A6/FGF21/SLC17A8/SLC8A3/SLC22A6/SLC17A7/SLC6A7
REACTOME_AUTOPHAGY	- 1.2 264 717 9	0.2632 70712	RHEB/CSNK2B/PRKAB2/TSG101/PEX5/DYNC1LI1/LAMTOR2/TUBA1B/ATG12/UBA52/MAP1LC3A/GFAP/TUBB2A/CHMP6/VPS37B/PRKAG1/TUBB2B/LAMTOR3/FUNDC1/TOMM20/EEF1A1/HBB/TUBA4B/PRKAG2/RRAGB/P GAM5/GABARAP/RPS27A/MAP1LC3B/LAMTOR1/VPS28/TUBA4A/TUBAL3/UBB/PARK7/TUBB3/TUBA3C/MLST 8/TOMM5/GABARAPL1/UBE2N/DYNLL1/LAMTOR5/VPS37D/MVB12B/LAMTOR4/CFTR/TOMM22/ATG9B/GABA RAPL2/TUBA8/TUBA1A/DYNC1I1/TUBB4A
WP_GPCRS_CLASS_A_RHODOPSINLIKE	- 1.2 327 897 06	0.1977 64065	HCRTR2/OR2H1/NPY6R/NMUR2/OPN4/FSHR/OR1E1/ADRA2C/GPR85/OPRD1/OR2J2/NPY5R/GPR45/CCKBR/ HTR2A/LPAR4/DRD1/GPR27/OR1F1/GPR12/NPY1R/PTGER3/SSTR5/HTR6/HTR2C/GPR50/NTSR1/FFAR1/OP RM1/SSTR3/SSTR4/SSTR2/MAS1/GPR6/PRLHR/MC4R/GPR52/GPR22/CHRM2/NPBWR2/GPR83/DRD5/CHRM 1/HTR5A/HRH3/HTR1E/HTR1A/SSTR1/GPR17
REACTOME_OLFACTORY_SIGNALING_PATHWAY	- 1.2 401 982 65	0.1423 98244	OR8B8/OR1A1/OR8G1/OR5H2/OR51G2/OR5P3/OR56A4/OR56A1/OR2M5/OR2F2/OR4C11/OR6C6/OR14A16/O R5D16/OR4M2/OR2G6/OR5K3/OR10AG1/OR51B6/OR56A3/OR51B2/OR10S1/OR10D3/OR51A7/OR51F2/OR5P 2/OR4K14/OR4D2/OR10C1/OR4F4/OR7D2/OR52J3/OR10A5/OR2Y1/OR14A2/OR6K3/OR8D1/OR4E1/OR2V1/O R1D2/OR7C2/OR4D1/OR10G4/OR6C3/OR10A2/OR13J1/OR10H3/OR2T1/OR4P4/OR2G3/OR2T12/OR10T2/OR5 AS1/OR5T2/OR1S1/OR5A2/OR4D6/OR4C13/OR51D1/OR10A6/OR5W2/OR8H2/OR8H3/OR5T3/OR5M1/OR2T35 /OR5H15/OR5K4/OR2W1/OR11H2/OR6K2/OR51S1/OR10J5/OR52Z1/OR5T1/OR1B1/OR9G4/OR10A7/OR5B17/ OR11G2/OR4N5/OR11L1/OR6B1/OR14C36/OR6F1/OR13C3/OR52A5/OR5K1/OR6C70/OR2V2/REEP2/OR5111/ OR4F21/OR2A1/OR1G1/OR51B5/OR51G1/OR8H1/OR1S2/OR51V1/OR5AP2/OR5AN1/OR10V1/OR4K13/OR2M 7/OR6X1/OR8K5/OR5A1/OR2M2/OR9G1/OR2T10/OR13C4/OR52E6/OR4K17/OR13C8/OR4F15/OR7G2/OR10J1 /OR4K5/OR1C1/OR11H1/OR6V1/OR1L4/OR51Q1/OR52H1/OR52D1/OR51J1/OR2A7/OR6C74/OR2A14/OR13H1 /OR4L1/OR4X2/OR5J2/OR2T6/OR10G8/OR14J1/OR2S2/OR7G1/OR13F1/OR13D1/OR51M1/OR2M3/OR13C2/O R4A16/OR8B12/OR13C9/OR2A5/OR52E5/OR8A1/OR51I2/OR2A42/OR5B12/OR2W3/OR6M1/OR2L5/OR2AJ1/O R2B2/OR2AG2/OR13C5/OR4F5/OR5C1/OR10W1/OR6T1/OR1L6/OR12D2/OR2A4/OR1N2/OR11A1/OR2C1/OR5 K2/OR4A47/OR7A5/OR13A1/OR2D2/RTP2/OR5AC2/OR5AK2/RTP1/OR2T33/OR2H1/OR2T4/REEP1/OR1E1/OR 2K2/OR2L3/OR2J2/OR4F6/GNAL/OR4K1/OR2T8/OR1F1/OR4K2/OR6B3/OR10H5/OR10Q1/OR9A2/RTP5/OR2L2 /OR14I1/OR2L13/OR4N2
KEGG_OLFACTORY_TRANSDUCTION	- 1.2 439 197 38	0.1460 87393	OR8B8/OR1A1/OR8G1/OR5H2/OR51G2/OR5P3/OR56A4/OR56A1/OR2M5/OR2F2/OR4C11/OR6C6/OR14A16/O R5D16/OR4M2/OR2G6/OR10AG1/OR51B6/OR56A3/OR51B2/OR10S1/OR51A7/OR51F2/OR5P2/OR4K14/OR4D 2/OR10C1/OR4F4/OR7D2/OR52J3/OR10A5/OR2Y1/OR6K3/OR8D1/OR1D2/OR7C2/OR4D1/OR10G4/OR6C3/O R10A2/CALM1/OR13J1/CNGA4/PDC/OR10H3/OR2T1/OR4P4/OR2G3/OR2T12/OR10T2/OR5AS1/OR5T2/OR1S1 /OR5A2/OR4D6/OR4C13/OR51D1/OR10A6/OR8H2/OR8H3/OR5T3/OR5M1/OR2W1/OR6K2/OR51S1/OR10J5/O



			R5T1/OR1B1/OR9G4/OR10A7/OR5B17/OR11G2/OR4N5/OR11L1/OR6B1/OR14C36/OR6F1/OR1D4/OR13C3/OR52A5/OR5K1/OR6C70/OR2V2/OR51I1/OR2A1/OR1G1/PRKX/OR51B5/OR51G1/OR8H1/OR1S2/OR51V1/OR5AP2/OR5AN1/OR10V1/OR4K13/OR2M7/OR6X1/OR8K5/OR5A1/OR2M2/OR9G1/OR2T10/OR13C4/OR52E6/OR4K17/OR13C8/OR4F15/OR7G2/OR10J1/OR4K5/OR1C1/OR11H1/OR6V1/OR1L4/OR51Q1/OR52H1/OR52D1/OR2A7/OR6C74/OR2A14/OR13H1/OR4L1/OR4X2/OR5J2/OR2T6/OR10G8/OR14J1/OR2S2/OR7G1/OR13F1/OR13D1/OR51M1/OR2M3/OR13C2/OR4A16/GUCA1B/OR8B12/OR4C45/OR13C9/OR2A5/OR8A1/OR51I2/OR2A42/OR5B12/CALM3/OR2W3/OR6M1/OR2B2/OR2AG2/OR13C5/OR4F5/OR5C1/GUCA1A/OR6T1/OR1L6/OR12D2/OR2A4/OR1N2/OR11A1/OR2C1/OR5K2/OR4A47/OR7A5/OR13A1/OR2D2/OR5AC2/CALM2/PRKACB/CALML3/CAMK2G/OR5AK2/OR2T33/OR2H1/OR2T4/OR1E1/OR2K2/OR2L3/OR2J2/OR4F6/GNAL/OR4K1/OR2T8/OR1F1/OR4K2/OR6B3/OR10H5/CNGB1/OR10Q1/OR9A2/CAMK2A/OR2L2/OR14I1/CLCA4/OR2L13/OR4N2/PRKG2
REACTOME_SELECTIVE_AUTOPHAGY	- 1.2 525 066 47	0.2571 70898	CSNK2B/PRKAB2/PEX5/DYNC1LI1/TUBA1B/ATG12/UBA52/MAP1LC3A/TUBB2A/PRKAG1/TUBB2B/FUNDC1/TOMM20/TUBA4B/PRKAG2/P GAM5/RPS27A/MAP1LC3B/TUBA4A/TUBAL3/UBB/PARK7/TUBB3/TUBA3C/TOMM5/UBE2N/DYNLL1/CFTR/TOMM22/TUBA8/TUBA1A/DYNC111/TUBB4A
REACTOME_RHO_GTPASE_EFFECTORS	- 1.2 585 493 03	0.1233 22248	PPP1R12B/SEC13/CENPA/CENPS/MAPK3/DYNC1LI1/PPP1CC/ARPC3/H4C12/EVL/ARPC4/H2BC8/H3C13/CENPK/TUBA1B/MYL12B/H2AC19/PLK1/PPP2CB/CENPU/PPP2R5B/PPP2CA/TUBB2A/H4C6/TUBB2B/H4-16/DLG4/NOX1/KDM1A/CENPM/H2AC6/TUBA4B/H3C12/PPP2R5A/H2BU1/BRK1/CDH1/RPS27/CDKN1B/SGO1/CDC25C/PMF1/NUF2/H2BC21/ITGB3BP/RHOC/H2BC15/MYL6/H3-3A/H2AX/H2BC6/H3C4/TUBA4A/CENPH/YWHAQ/TUBAL3/H3C7/H2AZ1/SKA2/PRKCB/AURKB/SPC24/TUBB3/H2BC4/TUBA3C/CENPQ/YWHAE/H2BC9/NSL1/H2BC7/PIN1/H3C1/DYNLL1/H2AC7/CIT/NOXO1/SPC25/CYFIP2/H2AC20/CFTR/H4C8/H4C11/H4C15/RTKN/BIRC5/MAD2L1/H2BC13/LIN7B/H2BC14/TUBA8/H2AC14/H2AC4/H3C15/CLASP2/H4C5/NOX3/H2AC8/H4C4/PAK3/TUBA1A/H4C1/H4C2/H2AB1/PPP1R14A/H2BC3/WASF1/PFN2/H2BC10/H4C3/H3C11/PRKCZ/DYNC111/H4C13/KIF5A/TUBB4A
REACTOME_SWITCHING_OF_ORIGINS_TO_A_PO ST_REPLICATIVE_STATE	- 1.2 606 085 84	0.2294 60505	PSMA1/PSMD3/PSMD6/PSMC3/PSMD9/PSMA4/PSMD4/CCNA2/ANAPC5/UBA52/ANAPC16/ANAPC10/PSMC6/PSMB7/PSMA5/PSMD14/PSMB5/PSMB4/RPS27A/ORC6/PSMB6/PSMD8/PSMA6/PSMA7/PSMD13/ORC4/UBE2E1/PSMB1/UBB/PSMA2/PSMD10/UBE2C/SKP1/PSMB3/UBE2S/ANAPC15/ANAPC11/RBX1
REACTOME_CHROMATIN_MODIFYING_ENZYMES	- 1.2 629	0.1259 11878	ING3/RUVBL2/COPRS/BRWD1/KAT2B/H4C12/H2BC8/SMARCE1/H3C13/HDAC2/MCRS1/H2AC19/RPS2/SAP18/KDM4D/PADI1/H4C6/SUPT3H/MORF4L2/H4-16/SGF29/KDM1A/PRMT3/KDM5B/H2AC6/MORF4L1/TAF9/H3C12/H2BU1/SMARCB1/H2AC16/ACTL6A/ELP6/H2BC21/SMARCD3/H2AC17/H2BC15/SMYD3/H2AX/H2BC6/SUV39H2/H3C4/TADA1/H3C7/PRMT1/H2AZ1/ELP5/

	525 6		H2BC4/VPS72/DPY30/H2BC9/H2BC7/KANSL2/H3C1/H2AC7/JADE3/H2AC20/CCND1/H4C8/H4C11/H4C15/ING4/H2BC13/H2AC12/H2BC14/H2AC21/H2AC14/H2AC4/H3C15/H4C5/H2AC8/H4C4/H4C1/H4C2/H2AB1/H2BC3/H2AW/H2BC10/YEATS4/H4C3/H3C11/ACTL6B/H4C13/CDK4
REACTOME_COPI_DEPENDENT_GOLGI_TO_ER_RETROGRADE_TRAFFIC	- 1.2 672 896 35	0.2186 95376	TUBA1B/ARF5/TUBB2A/KIF3C/TUBB2B/COPZ1/KIF22/TUBA4B/NSF/USE1/KIF21A/COPE/TUBA4A/TUBAL3/KIF3A/KIF25/TUBB3/TUBA3C/KIF9/BNIP1/KIF1A/TUBA8/KIF26A/NAPB/TUBA1A/KIF21B/KIF19/KIF12/KIF5A/TUBB4A
REACTOME_CLASS_B_2_SECRETIN_FAMILY_RECEPTORS_	- 1.2 724 225 47	0.2055 33597	UCN3/RAMP2/CALCB/GNG7/WNT7A/IAPP/RAMP1/FZD9/IHH/WNT8A/GIPR/VIPR1/ADCYAP1/WNT7B/PTH2/GNG2/CALCRL/WNT6/CRHR2/PTH2R/GHRH/GNG4/GNG8/CRHBP/GLP2R/WNT10B/GNG13/VIPR2/CRHR1/GNG3/VIP/GLP1R
REACTOME_NEGATIVE_REGULATION_OF_FGFR3_SIGNALING	- 1.2 766 782 38	0.2953 48907	UBA52/PPP2CB/PPP2CA/FGF20/FRS2/RPS27A/FGF4/UBB/FGF23/FGF16/FGF8/FGF9/FGF17
REACTOME_DEGRADATION_OF_AXIN	- 1.2 771 736 75	0.2733 89356	PSMB2/PSMA1/PSMD3/PSMD6/PSMC3/PSMD9/PSMA4/PSMD4/UBA52/PSMC6/PSMB7/PSMA5/PSMD14/PSMB5/PSMB4/RPS27A/PSMB6/PSMD8/PSMA6/PSMA7/PSMD13/PSMB1/UBB/PSMA2/PSMD10/PSMB3
REACTOME_CELLULAR_SENESCENCE	- 1.2 816 665 22	0.1424 44123	CDKN1B/ASF1A/RPS27A/H2BC21/H1-1/H2BC15/H3-3A/H2AX/H1-2/UBE2E1/H2BC6/H3C4/H3C7/TERF2IP/H2AZ1/UBB/CBX8/BMI1/H2BC4/MAPK8/H2BC9/CBX2/H2BC7/H3C1/H2AC7/UBE2C/UBE2S/ANAPC15/H1-3/MAPK10/ANAPC11/H2AC20/H4C8/H4C11/H4C15/CDKN2D/H2BC13/H1-4/H2BC14/H2AC14/H2AC4/H3C15/H4C5/H2AC8/H4C4/H4C1/H4C2/H2AB1/H2BC3/H1-5/H2BC10/H4C3/H3C11/H4C13/CDK4
KEGG_RNA_POLYMERASE	- 1.2 818 068 87	0.2838 42795	POLR1D/POLR2E/POLR1E/POLR3B/POLR3GL/POLR2D/POLR2H/POLR3F/POLR1C/POLR3G/POLR2C/POLR2L/POLR2J/POLR3H/POLR2K/POLR2I/ZNRD1/POLR3K/POLR2G/POLR2F

KEGG_PENTOSE_AND_GLUCURONATE_INTERCONVERSIONS	- 1.2 849 795 9	0.2800 88109	DCXR/UGT2B28/CRYL1/UGT2B15/UGT2B17/UGT2B7
REACTOME_INTRAFLAGELLAR_TRANSPORT	- 1.2 877 509 76	0.2640 69264	TUBA1B/IFT27/TUBB2A/KIF3C/TUBB2B/TCTEX1D2/IFT43/DYNLRB1/IFT52/IFT20/TUBA4A/KIF3A/TUBB3/TUBA3C/DYNLL1/DYNLRB2/IFT46/KIF17/TCTEX1D1/TUBA1A/TUBB4A
KEGG_ALANINE_ASPARTATE_AND_Glutamate_Metabolism	- 1.2 947 550 31	0.2895 29418	CPS1/ALDH5A1/ADSL/GOT2/NIT2/GPT2/GPT/ABAT/GLUD1/GOT1/ACY3/GAD1/GLS2/ASPA/GAD2/AGXT2
REACTOME_RNA_POLYMERASE_III_TRANSCRIPTION_INITIATION_FROM_TYPE_1_PROMOTER	- 1.2 951 007 71	0.2681 47357	POLR1D/POLR2E/POLR3B/POLR3GL/POLR2H/POLR3F/POLR1C/GTF3C5/GTF3C6/POLR3G/POLR2L/POLR3H/POLR2K/GTF3A/POLR3K/POLR2F
REACTOME_FGFR2_ALTERNATIVE_SPLICING	- 1.2 958 981 73	0.2734 59775	POLR2C/POLR2L/POLR2J/POLR2K/FGFR2/POLR2I/POLR2G/POLR2F/ESRP1
REACTOME_PROTEIN_METHYLATION	- 1.2 960 076 55	0.2985 90691	CAMKMT/EEF2KMT/CALM1/HSPA8/ETFB/ETFBKMT/METTL21A/METTL22/RPS2/EEF1AKMT2/PRMT3/EEF1A1/EEF1AKMT1
REACTOME_MITOTIC_SPINDLE_CHECKPOINT	- 1.2 983	0.1872 60751	CDC26/CENPT/PPP2R1A/NUP37/CDCA8/KNL1/KIF2C/BUB3/RANGAP1/ANAPC7/KIF2B/DYNC1I2/CENPN/MIS12/CENPL/B9D2/SEC13/CENPA/CENPS/DYNC1L1/PPP1CC/CENPK/PLK1/ANAPC5/PPP2CB/CENPU/PPP2R5B/ANAPC16/PPP2CA/ANAPC10/CENPM/PPP2R5A/RPS27/SGO1/PMF1/NUF2/ITGB3BP/UBE2E1/CENPH/SKA2/A

	532 02		URKB/SPC24/CENPQ/NSL1/DYNLL1/UBE2C/SPC25/UBE2S/ANAPC15/ANAPC11/BIRC5/MAD2L1/CLASP2/DY NC111
REACTOME_ION_CHANNEL_TRANSPORT	- 1.2 998 889 82	0.1330 89573	CUTC/ATP10B/ATP1A4/ATP6V1E1/TRPC3/PDZD11/UBB/FXYD3/SRI/TTYH1/CLCN4/FXYD1/CASQ1/FKBP1B/B EST1/UNC79/ATP6V0B/TTYH2/TRPC5/ATP6V1F/CAMK2G/ATP1B1/UNC80/ASIC2/SGK2/ASIC1/ATP2B2/ATP4 A/ATP2C2/ATP8A1/NALCN/BEST3/FXYD2/TRPV6/TRDN/FXYD6/WNK2/ASIC4/FXYD7/TRPM1/SLN/ATP8A2/AT P6V1G2/CAMK2A/ANO3/ATP1A3/RYR2/ATP13A5/ATP2B3/CLCA4/FXYD4/ATP6V0A4
REACTOME_DEFECTIVE_CFTR_CAUSES_CYSTIC _FIBROSIS	- 1.3 034 049 68	0.2193 89212	PSMA1/PSMD3/PSMD6/PSMC3/PSMD9/PSMA4/PSMD4/UBA52/PSMC6/PSMB7/PSMA5/PSMD14/PSMB5/PSM B4/RPS27A/PSMB6/PSMD8/PSMA6/PSMA7/PSMD13/PSMB1/UBB/PSMA2/PSMD10/PSMB3/RNF5/CFTR/OS9
WP_MAP3K1_ROLE_IN_PROMOTING_AND_BLOCK ING_GONADAL_DETERMINATION	- 1.3 035 608 89	0.2895 29418	FRAT1/SRY/FGFR2/FGF9/GADD45G
REACTOME_UCH_PROTEINASES	- 1.3 049 300 69	0.1839 0538	PSMA1/INO80E/PSMD3/TFPT/PSMD6/PSMC3/ACTR5/PSMD9/RUVBL1/PSMA4/PSMD4/MCRS1/H2AC19/INO80 C/UBA52/UCHL3/PSMC6/PSMB7/PSMA5/H2AC6/PSMD14/SEN8/NEDD8/PSMB5/PSMB4/RPS27A/H2AC16/PS MB6/PSMD8/ACTL6A/PSMA6/PSMA7/H2AC17/PSMD13/PSMB1/UBB/PSMA2/PSMD10/H2AC7/PSMB3/H2AC20/ H2AC12/H2AC21/H2AC14/H2AC4/UCHL1/H2AC8/H2AW
REACTOME_SIGNALING_BY_FGFR2	- 1.3 056 542 5	0.1932 04647	UBA52/POLR2C/PPP2CB/PPP2CA/FGF22/FGF20/POLR2L/POLR2J/FRS2/RPS27A/FRS3/FGFBP3/FGF4/UBB/P OLR2K/FGFR2/POLR2I/FGF23/POLR2G/FGF16/FGFBP2/FGF8/FGF9/FGF3/FGF17/POLR2F/ESRP1
REACTOME_Glutamate_and_Glutamine_Met abolism	- 1.3 090 436 55	0.2895 29418	OAT/PYCR3/GOT2/PYCR1/KYAT1/GLUD1/RIMKLA/GLS2

REACTOME_RESOLUTION_OF_SISTER_CHROMATID_COHESION	- 1.3 116 268 95	0.1601 80447	CENPL/B9D2/SEC13/CENPA/CENPS/DYNC1LI1/PPP1CC/CENPK/TUBA1B/RAD21/PLK1/PPP2CB/CENPU/PPP2R5B/CCNB1/PPP2CA/TUBB2A/CDK1/TUBB2B/CENPM/TUBA4B/CCNB2/PPP2R5A/RPS27/SGO1/PMF1/NUF2/ITGB3BP/TUBA4A/CENPH/TUBAL3/SKA2/AURKB/SPC24/TUBB3/TUBA3C/CENPQ/NSL1/DYNLL1/SPC25/BIRC5/MAD2L1/TUBA8/CLASP2/TUBA1A/DYNC111/TUBB4A
WP_ENDOTHELIN_PATHWAYS	- 1.3 124 313 26	0.2693 69865	RAMP1/CALM2/GNAI1/CALCRL/PLCB1/NPY1R/RIIAD1/MYL1/GNG13/NPY
WP_FATTY_ACID_OMEGA_OXIDATION	- 1.3 165 875 12	0.2895 29418	ALDH2/CYP2E1/CYP2A6/ADH7/CYP4A11/ADH1B
REACTOME_SYNTHESIS_OF_BILE_ACIDS_AND_BILE_SALTS_VIA_7ALPHA_HYDROXYCHOLESTEROL	- 1.3 182 254 81	0.2815 993	BAAT/NR1H4/AKR1C3/AKR1C4/AKR1C2/AKR1C1
BIOCARTA_NKCELLS_PATHWAY	- 1.3 186 488 66	0.2818 66472	KLRC4/KLRC3/KLRC2
REACTOME_CLASS_C_3_METABOTROPIC_GLUTAMATE_PHEROMONE_RECEPTORS_	- 1.3 215 142 84	0.2669 05921	TAS2R46/TAS2R14/TAS2R3/TAS2R9/TAS2R30/GABBR1/GRM3/GRM2/TAS2R13/GRM5/GRM4/GABBR2/GRM7
REACTOME_PHOSPHOLIPASE_C_MEDIATED_CASCADE_FGFR4	- 1.3 219	0.2874 48016	FGFR4/FGF4/FGF23/FGF16/KLB/FGF8/FGF9/FGF17

	661 51		
REACTOME_FORMATION_OF_THE_EARLY_ELONGATION_COMPLEX	- 1.3 234 378 61	0.2578 34938	POLR2C/POLR2L/POLR2J/CCNH/GTF2H5/NELFE/POLR2K/POLR2I/SUPT4H1/POLR2G/POLR2F
REACTOME_ABERRANT_REGULATION_OF_MITOTIC_EXIT_IN_CANCER_DUE_TO_RB1_DEFECTS	- 1.3 235 946 81	0.2804 5977	ANAPC5/ANAPC16/ANAPC10/UBE2E1/UBE2C/UBE2S/ANAPC15/ANAPC11
REACTOME_CA_DEPENDENT_EVENTS	- 1.3 236 150 34	0.2600 57909	PRKAR1B/PRKACB/CAMK2G/ADCY2/CAMKK1/ADCY5/PDE1A/CAMK2A/PRKCG
REACTOME_GOLGI_TO_ER_RETROGRADE_TRANSPORT	- 1.3 237 569 82	0.1523 66812	PLA2G4A/TUBA1B/ARF5/ACTR10/PLA2G6/TUBB2A/KIF3C/TUBB2B/COPZ1/KIF22/RAB18/TUBA4B/NSF/USE1/KIF21A/COPE/ACTR1A/TUBA4A/TUBAL3/KIF3A/KIF25/TUBB3/TUBA3C/DCTN6/KIF9/DYNLL1/BNIP1/PAFAH1B3/RAB6B/KIF1A/DCTN2/TUBA8/KIF26A/DCTN3/NAPB/TUBA1A/KIF21B/KIF19/KIF12/DYNC111/KIF5A/TUBB4A
WP_STEROID_BIOSYNTHESIS	- 1.3 242 469 59	0.2769 43412	HSD17B3/HSD3B1/CPN1/CYP17A1/F13B
KEGG_TERPENOID_BACKBONE_BIOSYNTHESIS	- 1.3 293 246 59	0.2824 85652	GGPS1/PMVK/MVK/HMGCS1/ACAT1/FDPS/HMGCR/ACAT2/IDI1/PDSS1/IDI2/HMGCS2

REACTOME_SIGNALING_BY_WNT	- 1.3 304 403 78	0.0476 88383	PSMB7/FRAT1/PSMA5/H2AC6/SFRP1/H3C12/TLE5/PPP2R5A/CLTA/PSMD14/CBY1/H2BU1/PSMB5/PSMB4/RP S27A/CSNK1E/PSMB6/PSMD8/PSMA6/H2BC21/PSMA7/SRY/PSMD13/H2BC15/H3- 3A/H2AX/PSMB1/H2BC6/H3C4/H3C7/H2AZ1/PRKCB/UBB/PPP3CB/VPS29/H2BC4/GNG7/WNT7A/RSPO2/PSM A2/PSMD10/GNAO1/H2BC9/H2BC7/H3C1/PIP5K1B/H2AC7/SKP1/LGR6/PSMB3/WNT8A/PDE6A/SOX6/H2AC20/ RBX1/H4C8/H4C11/H4C15/WNT7B/SOX3/H2BC13/GNG2/H2BC14/PARD6A/H2AC14/WNT6/H2AC4/PLCB1/H3C 15/HECW1/H4C5/RAC3/H2AC8/H4C4/GNG4/GNG8/RSPO3/SOX4/H4C1/CXXC4/H4C2/H2AB1/H2BC3/H2BC10/ WNT10B/GNG13/H4C3/H3C11/LGR5/GNG3/CAMK2A/H4C13/PRKCG/WIF1/PRKG2
REACTOME_ESTROGEN_DEPENDENT_GENE_EX PRESSION	- 1.3 323 357 11	0.1192 0368	KANK1/RAD21/H2AC19/EBAG9/POLR2C/FKBP4/USF1/H4C6/PTGES3/H4- 16/POLR2L/KDM1A/POLR2J/H2AC6/H3C12/KCTD6/H2BU1/TGFA/ERBB4/H2BC21/H2BC15/H3- 3A/H2AX/H2BC6/H3C4/H3C7/PRMT1/H2AZ1/H2BC4/POLR2K/POLR2I/H2BC9/GTF2A2/H2BC7/MYB/H3C1/H2A C7/PGR/POLR2G/H2AC20/CCND1/H4C8/H4C11/H4C15/H2BC13/H2BC14/H2AC14/H2AC4/H3C15/H4C5/H2AC8 /H4C4/H4C1/H4C2/H2AB1/H2BC3/H2BC10/H4C3/H3C11/H4C13/POLR2F
REACTOME_RNA_POLYMERASE_III_CHAIN_ELON GATION	- 1.3 335 824 24	0.2571 70898	POLR1D/POLR2E/POLR3B/POLR3GL/POLR2H/POLR3F/POLR1C/POLR3G/POLR2L/POLR3H/POLR2K/POLR3 K/POLR2F
REACTOME_DISEASES_OF_MITOTIC_CELL_CYCL E	- 1.3 340 358 17	0.2280 92883	ANAPC5/ANAPC16/E2F2/ANAPC10/CDKN1B/UBE2E1/UBE2C/UBE2S/ANAPC15/ANAPC11/CCND1/CDKN1C/C DK4
REACTOME_TCF_DEPENDENT_SIGNALING_IN_RE SPONSE_TO_WNT	- 1.3 349 986 96	0.0699 16397	H2AC19/UBA52/PPP2CB/PPP2R5B/PPP2CA/H4C6/H4- 16/PSMC6/CTNNBIP1/WNT3/PSMB7/FRAT1/PSMA5/H2AC6/SFRP1/H3C12/PPP2R5A/PSMD14/CBY1/H2BU1/P SMB5/PSMB4/RPS27A/CSNK1E/PSMB6/PSMD8/PSMA6/H2BC21/PSMA7/SRY/PSMD13/H2BC15/H3- 3A/H2AX/PSMB1/H2BC6/H3C4/H3C7/H2AZ1/UBB/H2BC4/RSPO2/PSMA2/PSMD10/H2BC9/H2BC7/H3C1/PIP5K 1B/H2AC7/LGR6/PSMB3/WNT8A/SOX6/H2AC20/RBX1/H4C8/H4C11/H4C15/SOX3/H2BC13/H2BC14/H2AC14/H 2AC4/H3C15/HECW1/H4C5/H2AC8/H4C4/RSPO3/SOX4/H4C1/CXXC4/H4C2/H2AB1/H2BC3/H2BC10/H4C3/H3C 11/LGR5/H4C13/WIF1
KEGG_METABOLISM_OF_XENOBIOTICS_BY_CYT OCHROME_P450	- 1.3 354	0.1643 1522	GSTA1/CYP3A43/CYP2E1/GSTO1/MGST3/UGT2B28/CYP2C8/GSTT2/GSTA4/GSTM3/UGT2B15/CYP2C18/UGT 2B17/ADH7/AKR1C3/AKR1C4/AKR1C2/AKR1C1/UGT2B7/ADH1B

	199 7		
WP_DOPAMINERGIC_NEUROGENESIS	- 1.3 382 695 8	0.2319 9704	NEUROG2/GBX2/OTX2/TH/RET/CDKN1C/ASCL1/FGF8/LMX1B/NKX2-2/LMX1A
REACTOME_INHIBITION_OF_THE_PROTEOLYTIC_ACTIVITY_OF_APC_C_REQUIRED_FOR_THE_ONSET_OF_ANAPHASE_BY_MITOTIC_SPINDLE_CHECKPOINT_COMPONENTS	- 1.3 385 813 48	0.2806 2499	ANAPC5/ANAPC16/ANAPC10/UBE2E1/UBE2C/UBE2S/ANAPC15/ANAPC11/MAD2L1
REACTOME_SYNTHESIS_OF_PYROPHOSPHATES_IN_THE_CYTOSOL	- 1.3 385 944 87	0.2733 5524	ITPK1/NUDT4/NUDT10/IP6K3/NUDT11
REACTOME_PI_3K_CASCADE_FGFR4	- 1.3 395 348 87	0.2655 21581	FGF20/FRS2/FGFR4/FGF4/FGF23/FGF16/KLB/FGF8/FGF9/FGF17
REACTOME_TANDEM_PORE_DOMAIN_POTASSIUM_CHANNELS	- 1.3 397 331 92	0.2746 6595	KCNK18/KCNK10/KCNK7/KCNK2/KCNK4/KCNK9/KCNK3/KCNK1
BIOCARTA_MPR_PATHWAY	- 1.3 408 310 58	0.2755 85279	HRAS/MAPK3/CCNB1/CDK1/CDC25C/PIN1/PGR/PRKAR1B/PRKACB/MYT1



REACTOME_GLUCAGON_SIGNALING_IN_METABOLIC_REGULATION	- 1.3 418 581 41	0.2375 54867	GNG7/PRKAR1B/PRKACB/ADCY2/GNG2/GNG4/GNG8/ADCY5/GNG13/GNG3
REACTOME_CYCLIN_A_B1_B2_ASSOCIATED_EVENTS_DURING_G2_M_TRANSITION	- 1.3 425 487 65	0.2245 06384	MNAT1/CCNA2/PLK1/PPP2CB/CCNB1/PPP2CA/CDK1/PKMYT1/CCNB2/LCMT1/CDC25A/PPP2R2A/CDC25C/CNH/PPP2R3B
REACTOME_PHASE_4_RESTING_MEMBRANE_POTENTIAL	- 1.3 425 703 93	0.2631 7148	KCNK7/KCNK2/KCNJ4/KCNK4/KCNK9/KCNK3/KCNJ12/KCNK1/KCNK12
REACTOME_MITOTIC_METAPHASE_AND_ANAPHASE	- 1.3 426 575 63	0.0728 41396	VRK1/PSMD3/PSMD6/PSMC3/CENPN/UBE2I/VPS4A/TUBB4B/MIS12/PSMD9/CENPL/B9D2/PSMA4/PSMD4/SEC13/CENPA/CENPS/DYNC1LI1/PPP1CC/TMPO/CENPK/TUBA1B/RAD21/PLK1/ANAPC5/UBA52/PPP2CB/CENPU/SPAST/PPP2R5B/CCNB1/ANAPC16/PPP2CA/TUBB2A/CHMP6/ANAPC10/CDK1/TUBB2B/SUMO1/PSMC6/CENPM/PSMB7/PSMA5/TUBA4B/CCNB2/RAN/PPP2R5A/PSMD14/RPS27/PSMB5/PSMB4/SGO1/RPS27A/PSMB6/PPP2R2A/PSMD8/PTTG1/PSMA6/PMF1/NUF2/ITGB3BP/PSMA7/PSMD13/UBE2E1/PSMB1/TUBA4A/CENPH/TUBAL3/SKA2/UBB/AURKB/SPC24/TUBB3/TUBA3C/NUP35/PSMA2/PSMD10/CENPQ/NSL1/BANF1/DYNLL1/UBE2C/PSMB3/SPC25/UBE2S/ANAPC15/ANAPC11/BIRC5/MAD2L1/TUBA8/CLASP2/TUBA1A/SIRT2/DYNC111/TUBB4A
REACTOME_RNA_POLYMERASE_III_TRANSCRIPTION_INITIATION_FROM_TYPE_3_PROMOTER	- 1.3 433 325 05	0.2319 9704	SNAPC1/POLR1D/POLR2E/POLR3B/POLR3GL/POLR2H/POLR3F/POLR1C/SNAPC5/SNAPC3/POLR3G/BRF2/POLR2L/POLR3H/POLR2K/POLR3K/POLR2F
WP_GPCRS_CLASS_C_METABOTROPIC_Glutamate_Pheromone	- 1.3 446 202 7	0.2713 45012	GABBR1/GRM3/GRM2/GRM5/GRM4/GABBR2/GRM7

REACTOME_G_ALPHA_S_SIGNALLING_EVENTS	- 1.3 463 838 2	0.0282 5041	CALCB/GNG7/PDE3B/OR2A4/OR1N2/OR11A1/OR2C1/IAPP/HTR4/OR5K2/GPHB5/RAMP1/OR4A47/RLN2/OR7A5/OR13A1/OR2D2/RTP2/OR5AC2/GIPR/OR5AK2/ADCY2/VIPR1/RTP1/MC5R/GPR32/OR2T33/ADCYAP1/OR2H1/CGA/PDE10A/OR2T4/RXFP2/GPR150/FSHR/REEP1/OR1E1/PTH2/GNG2/OR2K2/NPS/GNAI1/AVP/CALCRL/TAAR6/OR2L3/OR2J2/FSHB/OR4F6/CRHR2/PTH2R/GNAL/GPR45/DRD1/OR4K1/GHRH/GPR27/GNG4/GNG8/OR2T8/NPSR1/OR1F1/OR4K2/OR6B3/GPHA2/OR10H5/GLP2R/HTR6/ADCY5/PDE1A/GNG13/OR10Q1/VIPR2/OR9A2/CRHR1/RXFP1/GNG3/PDE2A/VIP/RTP5/TSHR/MC4R/OR2L2/OR14I1/GPR83/DRD5/GLP1R/OR2L13/OR4N2
BIOCARTA_SM_PATHWAY	- 1.3 470 056 64	0.2605 61227	SNRPB2/SNRPD1/SNRPF/SNRPB/SNRPC/SNRPD2/SNRPE/SNRPG
REACTOME_HSP90_CHAPERONE_CYCLE_FOR_STEROID_HORMONE_RECEPTORS_SHR_	- 1.3 470 435 22	0.1835 43299	TUBA1B/ACTR10/FKBP4/TUBB2A/PTGES3/TUBB2B/DNAJA2/TUBA4B/DNAJA4/ACTR1A/TUBA4A/TUBAL3/TUBB3/TUBA3C/DCTN6/DYNLL1/PGR/DCTN2/TUBA8/DCTN3/TUBA1A/DYNC111/TUBB4A
REACTOME_PRESYNAPTIC_FUNCTION_OF_KAINATE_RECEPTORS	- 1.3 493 527 1	0.2617 70736	GNG2/PLCB1/GNG4/GNG8/GNG13/GNG3
REACTOME_RECYCLING_PATHWAY_OF_L1	- 1.3 523 180 35	0.1968 28558	TUBA1B/TUBB2A/TUBB2B/TUBA4B/CLTA/RPS6KA5/TUBA4A/TUBAL3/TUBB3/TUBA3C/DNM1/SHTN1/TUBA8/TUBA1A/DNM3/L1CAM/SH3GL2/TUBB4A
BIOCARTA_PDZS_PATHWAY	- 1.3 534 876 6	0.2419 14701	GUK1/NFASC/NCAM1/DLG2/PCLO/GRIN1

PID_REELIN_PATHWAY	- 1.3 538 124 25	0.2213 32213	MAPK8/CDK5/MAPT/GRIN2A/DAB1/CDK5R1/RELN/GRIN2B
REACTOME_PI_3K_CASCADE_FGFR2	- 1.3 555 094 92	0.2439 41025	FGF22/FGF20/FRS2/FGF4/FGFR2/FGF23/FGF16/FGF8/FGF9/FGF3/FGF17
WP_NONALCOHOLIC_FATTY_LIVER_DISEASE	- 1.3 557 258 27	0.1111 91158	NDUFS8/COX4I2/UQCRB/NDUFS7/PIK3R3/UQCRC1/COX6C/NDUFB2/SDHB/NDUFC1/NDUFS5/UQCR10/COX5A/NDUFB11/NDUFA8/NDUFS3/NDUFA1/MAPK8/UQCRC2/NDUFA6/NDUFV2/UQCRHL/CYP2E1/NDUFB3/NDUFS4/NDUFA9/UQCRFS1/COX7A2L/COX7C/COX6B1/COX8A/NDUFA7/NDUFA3/NDUFB10/NDUFA12/NDUFB4/NDUFC2/CYC1/COX4I1/UQCRH/ADIPOQ/NDUFB6/NDUFB8/NDUFB1/NDUFA13/DDIT3/UQCRQ/BID/NDUFAB1/COX5B/NDUFB5/NDUFA2/UQCR11/COX7B/NDUFA11/NDUFB7/NDUFB9/COX7B2/COX6A1/COX7A2/NDUFA4/NR1H4/COX6A2
REACTOME_UPTAKE_AND_ACTIONS_OF_BACTERIAL_TOXINS	- 1.3 576 696 21	0.2055 33597	SYT2/VAMP2/STX1A/SV2C/STX1B/SV2B/SYT1/SNAP25
REACTOME_PKMTS_METHYLATE_HISTONE_LYSINES	- 1.3 596 316 48	0.1495 36393	SMYD3/SUV39H2/H3C4/H3C7/DPY30/H3C1/H4C8/H4C11/H4C15/H3C15/H4C5/H4C4/H4C1/H4C2/H4C3/H3C11/H4C13
REACTOME_SYNTHESIS_OF_BILE_ACIDS_AND_BILE_SALTS_VIA_24_HYDROXYCHOLESTEROL	- 1.3 659 051 19	0.2463 33427	SLC27A5/CYP46A1/AKR1C3/AKR1C4/AKR1C2/AKR1C1
WP_RETT_SYNDROME_CAUSING_GENES	- 1.3	0.1636 16328	KCNJ10/GNAO1/SRRM3/GRIN2A/SCN2A/GABRD/STXBP1/GABBR2/GRIN2B/ACTL6B/GABRA3

	667 512 45		
REACTOME_PHOSPHOLIPASE_C_MEDIATED_CASCADE_FGFR2	- 1.3 711 647 38	0.2108 70873	FGF4/FGFR2/FGF23/FGF16/FGF8/FGF9/FGF3/FGF17
REACTOME_G2_M_DNA_DAMAGE_CHECKPOINT	- 1.3 719 033 62	0.1156 17518	YWHAH/RPA3/RPA2/H4C12/H2BC8/UBE2V2/CCNB1/H4C6/CDK1/SUMO1/H4-16/BABAM1/H2BU1/CDC25C/H2BC21/H2BC15/H2AX/H2BC6/YWHAQ/H2BC4/YWHAE/H2BC9/H2BC7/UBE2N/H4C8/H4C11/H4C15/H2BC13/H2BC14/H4C5/H4C4/H4C1/H4C2/H2BC3/H2BC10/H4C3/H4C13
REACTOME_SYNAPTIC_ADHESION_LIKE_MOLECULES	- 1.3 734 130 82	0.2406 41902	GRIA3/PTPRS/DLG4/PTPRD/RTN3/GRIA4/GRIN2A/LRFN2/GRIN2B/GRIN1
REACTOME_G2_M_CHECKPOINTS	- 1.3 743 623 94	0.0851 81586	PSMD3/H4C14/PSMD6/PSMC3/CDC7/H2BC1/RFC3/PSMD9/YWHAH/PSMA4/PSMD4/RPA3/RPA2/H4C12/H2BC8/UBE2V2/UBA52/CDC45/CCNB1/H4C6/CDK1/PKMYT1/SUMO1/H4-16/PSMC6/MCM10/PSMB7/PSMA5/BABAM1/CCNB2/PSMD14/H2BU1/CDC25A/PSMB5/PSMB4/RPS27A/ORC6/PSMB6/PSMD8/CDC25C/PSMA6/H2BC21/PSMA7/PSMD13/H2BC15/ORC4/H2AX/PSMB1/H2BC6/YWHAQ/UBB/H2BC4/PSMA2/PSMD10/YWHAE/H2BC9/H2BC7/UBE2N/PSMB3/H4C8/H4C11/H4C15/H2BC13/H2BC14/H4C5/H4C4/H4C1/H4C2/H2BC3/H2BC10/H4C3/H4C13
REACTOME_BBSOME_MEDIATED_CARGO_TARGETING_TO_CILIUM	- 1.3 761 414 02	0.2200 14282	BBS4/BBS7/BBS12/CCT5/LZTFL1/CCT3/CCT4/BBIP1/MKKS/BBS10/ARL6/CCT2/RAB3IP/SSTR3
REACTOME_PI_3K_CASCADE_FGFR3	- 1.3 791	0.2108 70873	FGF20/FRS2/FGF4/FGF23/FGF16/FGF8/FGF9/FGF17

	381 52		
PID_NETRIN_PATHWAY	- 1.3 795 666 17	0.1974 1161	ELMO1/DCC/UNC5A/AGAP2/CAMK2A
REACTOME_PROCESSING_OF_DNA_DOUBLE_STRAND_BREAK_ENDS	- 1.3 812 478 41	0.0956 44376	RPA3/RPA2/H4C12/CCNA2/H2BC8/UBE2V2/UBA52/PPP4C/H4C6/SUMO1/H4-16/BABAM1/SUMO2/H2BU1/RPS27A/H2BC21/H2BC15/H2AX/H2BC6/UBB/H2BC4/H2BC9/H2BC7/UBE2N/H4C8/H4C11/H4C15/H2BC13/H2BC14/H4C5/H4C4/H4C1/H4C2/H2BC3/H2BC10/H4C3/H4C13
REACTOME_CYCLIN_A_CDK2_ASSOCIATED_EVENTS_AT_S_PHASE_ENTRY	- 1.3 812 790 94	0.1274 24076	PSMA1/PSMD3/PSMD6/PSMC3/TFDP2/LIN37/PSMD9/RBBP4/MNAT1/PSMA4/PSMD4/CCNA2/UBA52/E2F5/PSMC6/PSMB7/CKS1B/PSMA5/PSMD14/CABLES1/CDC25A/PSMB5/PSMB4/CDKN1B/RPS27A/PSMB6/PSMD8/CNH/PSMA6/PSMA7/PSMD13/PSMB1/UBB/PSMA2/PSMD10/SKP1/PSMB3/CCND1/CDK4
KEGG_TAURINE_AND_HYPOTAURINE_METABOLISM	- 1.3 837 124 82	0.2149 65139	GGT6/ADO/GAD1/BAAT/GAD2
REACTOME_LYSINE_CATABOLISM	- 1.3 854 025 85	0.2268 09038	GCDH/AADAT/SLC25A21/CRYM
REACTOME_RECEPTOR_TYPE_TYROSINE_PROTEIN_PHOSPHATASES	- 1.3 859 908 3	0.2073 28803	SLITRK6/PTPRD/SLITRK5/PPFIA4/SLITRK2/IL1RAPL2/PPFIA3/IL1RAPL1/SLITRK4/SLITRK1

REACTOME_PRE_NOTCH_EXPRESSION_AND_PROCESSING	- 1.3 860 171 75	0.1115 72734	H2BC21/H2BC15/H3-3A/ST3GAL6/H2AX/H2BC6/H3C4/H3C7/H2AZ1/H2BC4/H2BC9/H2BC7/H3C1/H2AC7/H2AC20/CCND1/H4C8/H4C11/H4C15/H2BC13/H2BC14/MIR302A/H2AC14/H2AC4/H3C15/H4C5/H2AC8/H4C4/H4C1/H4C2/H2AB1/H2BC3/H2BC10/H4C3/H3C11/H4C13
REACTOME_CELL_CYCLE_CHECKPOINTS	- 1.3 875 004 43	0.0330 41667	PSMD9/CENPL/B9D2/YWHAH/PSMA4/PSMD4/RPA3/SEC13/CENPA/CENPS/DYNC1LI1/RPA2/PPP1CC/H4C12/CCNA2/H2BC8/UBE2V2/CENPK/PLK1/ANAPC5/UBA52/PPP2CB/CDC45/CENPU/PPP2R5B/CCNB1/ANAPC16/PP2CA/H4C6/ANAPC10/CDK1/PKMYT1/SUMO1/H4-16/PSMC6/CENPM/MCM10/PSMB7/PSMA5/BABAM1/CCNB2/PPP2R5A/PSMD14/H2BU1/CDC25A/RPS27/PSMB5/PSMB4/CDKN1B/SGO1/RPS27A/ORC6/PSMB6/PSMD8/CDC25C/PSMA6/PMF1/NUF2/H2BC21/ITGB3BP/PSMA7/PSMD13/H2BC15/ORC4/H2AX/UBE2E1/PSMB1/H2BC6/CENPH/YWHAQ/SKA2/UBB/AURKB/SPC24/H2BC4/PSMA2/PSMD10/CENPQ/YWHAH/H2BC9/NSL1/H2BC7/UBE2N/DYNLL1/UBE2C/PSMB3/SPC25/UBE2S/ANAPC15/ANAPC11/H4C8/PCBP4/H4C11/H4C15/BIRC5/MAD2L1/H2BC13/H2BC14/CLASP2/H4C5/H4C4/H4C1/H4C2/H2BC3/H2BC10/H4C3/DYNC1I1/H4C13
REACTOME_ACTIVATION_OF_AMPK_DOWNSTREAM_OF_NMDARS	- 1.3 888 308 4	0.1843 19461	TUBA1B/TUBB2A/PRKAG1/TUBB2B/TUBA4B/PRKAG2/TUBA4A/TUBAL3/TUBB3/TUBA3C/MAPT/TUBA8/TUBA1A/TUBB4A
BIOCARTA_LIS1_PATHWAY	- 1.3 891 657 43	0.2048 97795	DNAH2/DNAH6/DCTN6/DYNLL1/CDK5/DCTN3/CDK5R1/DCX/RELN
REACTOME_FGFR3_LIGAND_BINDING_AND_ACTIVATION	- 1.3 901 198 15	0.2149 65139	FGF4/FGF23/FGF16/FGF8/FGF9/FGF17
REACTOME_FRS_MEDIATED_FGFR2_SIGNALING	- 1.3 913	0.1819 94414	FGF22/FGF20/FRS2/FRS3/FGF4/FGFR2/FGF23/FGF16/FGF8/FGF9/FGF3/FGF17

	144 24		
REACTOME_COOPERATION_OF_PDCL_PHLIP1_AND_TRIC_CCT_IN_G_PROTEIN_BETA_FOLDING	- 1.3 918 161 71	0.1616 69719	CCT7/CCT6A/GNAT3/CCT3/CCT4/RGS9/GNAZ/GNG7/GNAT1/GNAO1/CCT2/GNG2/GNAI1/RGS7/GNG4/GNG8/GNG13/GNG3
REACTOME_ADHERENS_JUNCTIONS_INTERACTIONS	- 1.3 921 440 67	0.1904 2019	CDH3/NECTIN1/CDH13/CDH7/CDH8/CADM2/CDH12/CDH18/CDH9
REACTOME_ABORTIVE_ELONGATION_OF_HIV_1_TRANSCRIPT_IN_THE_ABSENCE_OF_TAT	- 1.3 939 791 31	0.2029 08912	POLR2C/POLR2L/POLR2J/NELFE/POLR2K/POLR2I/SUPT4H1/POLR2G/POLR2F
REACTOME_INTERCONVERSION_OF_NUCLEOTIDE_DI_AND_TRIPHOSPHATES	- 1.3 947 615 2	0.1782 66457	AK8/NUDT13/DUT/NME3/NME4/AK1/NME2/GUK1/AK9/DTYMK/NME1/DCTPP1/AK5
REACTOME_ADP_SIGNALLING_THROUGH_P2Y_PURINOCEPTOR_12	- 1.3 961 083 64	0.2297 46858	GNG2/GNAI1/GNG4/GNG8/GNG13/GNG3
WP_THYROID_HORMONES_PRODUCTION_AND_THEIR_PERIPHERAL_DOWNSTREAM_SIGNALLING_EFFECTS	- 1.3 989 927 49	0.0980 92643	PLIN1/THRA/KLB/PLCB1/AQP7/TSHR/ACTL6B/NPPB/NPPA/MC4R/FGF21/NPY/PRKG2

WP_PTF1A_RELATED_REGULATORY_PATHWAY	- 1.3 990 662 9	0.1966 67442	RBPJ/NKX6-1/KAT2B/PTF1A/RBPJL/PDX1
REACTOME_MITOCHONDRIAL_CALCIIUM_ION_TRANSPORT	- 1.3 992 837 4	0.2029 08912	VDAC2/PARL/MICU1/PHB/VDAC3/STOML2/PHB2/MICU3/SMDT1/SLC8A3
KEGG_LONG_TERM_POTENTIATION	- 1.4 018 013 91	0.1243 27555	CALM2/PRKACB/CALML3/CAMK2G/PPP3R2/GRIN2A/PLCB1/GRIA2/GRM5/PPP1R1A/GRIN2B/CAMK2A/CHP2/PRKCG/GRIN1
REACTOME_ACTIVATION_OF_KAINATE_RECEPTORS_UPON_Glutamate_BINDING	- 1.4 064 988 34	0.1548 61614	GNG2/NCALD/PLCB1/GRIK2/GNG4/GNG8/GNG13/GNG3
REACTOME_SEALING_OF_THE_NUCLEAR_ENVELOPE_BY_ESCRT_III	- 1.4 084 840 66	0.1773 63836	TUBA1B/SPAST/TUBB2A/CHMP6/TUBB2B/TUBA4B/TUBA4A/TUBAL3/TUBB3/TUBA3C/TUBA8/TUBA1A/TUBB4A
WP_PROXIMAL_TUBULE_TRANSPORT	- 1.4 086 812 01	0.1265 61277	ATP6V1E1/SLC22A2/SLC36A2/SLC2A2/SLC6A19/ATP6V0B/SLC3A1/SLC5A1/ATP6V1F/ATP1B1/AQP1/CA4/SLC22A8/SLC6A20/FXYD2/SLC1A1/SLC5A8/SLC22A6/ATP6V0A4
KEGG_GAP_JUNCTION	- 1.4 095	0.0920 88108	TUBA4A/TUBAL3/PRKCB/TUBB3/TUBA3C/GUCY1B1/PRKACB/ADCY2/TUBA8/GNAI1/PLCB1/GRM5/HTR2A/DRD1/TUBA1A/ADCY5/HTR2C/PDGFR/GJD2/PRKCG/TUBB4A/PRKG2



	549 7		
REACTOME_SIGNALING_BY_FGFR2_IN_DISEASE	- 1.4 197 473 06	0.1335 51647	POLR2C/FGF22/FGF20/POLR2L/POLR2J/FRS2/FGF4/POLR2K/FGFR2/POLR2I/FGF23/POLR2G/FGF16/FGF8/ FGF9/FGF3/FGF17/POLR2F
REACTOME_M_PHASE	- 1.4 208 016 66	0.0198 64398	CSNK2B/ENSA/CCP110/PSMA4/PSMD4/NCAPH2/SEC13/CENPA/CENPS/NME7/MAPK3/MZT2B/DYNC1L1/PP P1CC/H4C12/TMPO/H2BC8/NUP88/PPP2R2D/H3C13/CENPK/TUBA1B/RAD21/H2AC19/PLK1/ANAPC5/UBA52/ PPP2CB/CENPU/SPAST/PPP2R5B/CCNB1/ANAPC16/PPP2CA/TUBB2A/CHMP6/H4C6/ANAPC10/CDK1/TUBB2 B/SUMO1/H4- 16/NEK2/PSMC6/NCAPH/RAB2A/CENPM/PSMB7/PSMA5/H2AC6/TUBA4B/H3C12/CCNB2/RAN/PPP2R5A/PSM D14/H2BU1/RPS27/PSMB5/CEP70/PSMB4/SGO1/RPS27A/CSNK1E/CETN2/PSMB6/PPP2R2A/PSMD8/PTTG1/ PSMA6/PMF1/NUF2/H2BC21/ITGB3BP/PSMA7/ACTR1A/PSMD13/H2BC15/H3- 3A/H2AX/HAUS1/UBE2E1/PSMB1/H2BC6/H3C4/TUBA4A/CENPH/TUBAL3/MZT1/H3C7/H2AZ1/SKA2/PRKCB/U BB/AURKB/SSNA1/SPC24/TUBB3/H2BC4/TUBA3C/NUP35/CENPJ/PSMA2/PSMD10/CENPQ/YWHAH/H2BC9/N SL1/H2BC7/BANF1/H3C1/DYNLL1/H2AC7/UBE2C/PSMB3/SPC25/UBE2S/ANAPC15/ANAPC11/H2AC20/H4C8/H 4C11/H4C15/BIRC5/MAD2L1/H2BC13/DCTN2/H2BC14/TUBA8/H2AC14/H2AC4/DCTN3/H3C15/CLASP2/H4C5/H 2AC8/H4C4/TUBA1A/H4C1/H4C2/H2AB1/H2BC3/SIRT2/H2BC10/H4C3/H3C11/DYNC111/H4C13/TUBB4A
REACTOME_FRS_MEDIATED_FGFR4_SIGNALING	- 1.4 218 709 81	0.1990 46185	FGF20/FRS2/FGFR4/FRS3/FGF4/FGF23/FGF16/KLB/FGF8/FGF9/FGF17
REACTOME_TP53_REGULATES_METABOLIC_GENES	- 1.4 222 595 99	0.1072 73839	PRKAG1/LAMTOR3/COX11/CYCS/TACO1/PRKAG2/RRAGB/COX18/PRDX1/COX16/LAMTOR1/COX6C/YWHAQ /COX5A/MLST8/SURF1/PRDX5/YWHAH/COX7A2L/COX7C/LAMTOR5/COX6B1/COX8A/COX14/LAMTOR4/COX 4I1/PRDX2/COX5B/GLS2/COX7B/COX6A1/NDUFA4
REACTOME_NA_CL_DEPENDENT_NEUROTRANSMITTER_TRANSPORTERS	- 1.4 243	0.1536 54807	SLC22A2/SLC6A3/SLC6A19/SLC18A1/SLC6A13/SLC6A20/SLC6A15/SLC6A7

	964 47		
REACTOME_DEGRADATION_OF_DVL	- 1.4 277 546 56	0.1143 17684	PSMA1/PSMD3/PSMD6/PSMC3/PSMD9/PSMA4/PSMD4/KLHL12/UBA52/PSMC6/PSMB7/PSMA5/PSMD14/PSMB5/PSMB4/RPS27A/PSMB6/PSMD8/PSMA6/PSMA7/PSMD13/PSMB1/UBB/PSMA2/PSMD10/PSMB3/RBX1/HECW1
REACTOME_SEPARATION_OF_SISTER_CHROMATIDS	- 1.4 337 220 06	0.0349 4851	PSMD3/PSMD6/PSMC3/CENPN/TUBB4B/MIS12/PSMD9/CENPL/B9D2/PSMA4/PSMD4/SEC13/CENPA/CENPS/DYNC1LI1/PPP1CC/CENPK/TUBA1B/RAD21/PLK1/ANAPC5/UBA52/PPP2CB/CENPU/PPP2R5B/ANAPC16/PPP2CA/TUBB2A/ANAPC10/TUBB2B/PSMC6/CENPM/PSMB7/PSMA5/TUBA4B/PPP2R5A/PSMD14/RPS27/PSMB5/PSMB4/SGO1/RPS27A/PSMB6/PSMD8/PTTG1/PSMA6/PMF1/NUF2/ITGB3BP/PSMA7/PSMD13/UBE2E1/PSMB1/TUBA4A/CENPH/TUBAL3/SKA2/UBB/AURKB/SPC24/TUBB3/TUBA3C/PSMA2/PSMD10/CENPQ/NSL1/DYNLL1/UBE2C/PSMB3/SPC25/UBE2S/ANAPC15/ANAPC11/BIRC5/MAD2L1/TUBA8/CLASP2/TUBA1A/DYNC111/TUBB4A
REACTOME_REGULATION_OF_SIGNALING_BY_NODAL	- 1.4 385 618 89	0.1642 87638	ACVR2B/NODAL/LEFTY1/DAND5/ACVR1C/TDGF1/CFC1
REACTOME_ACTIVATION_OF_RAC1	- 1.4 389 642 02	0.1592 86048	PAK6/PAK3/PAK5
REACTOME_FRS_MEDIATED_FGFR3_SIGNALING	- 1.4 415 923 09	0.1505 69885	FGF20/FRS2/FRS3/FGF4/FGF23/FGF16/FGF8/FGF9/FGF17
REACTOME_OPIOID_SIGNALLING	- 1.4 459	0.0792 09475	PDE4C/GNAZ/POMC/PPP3CB/GNG7/GNAT1/GNAO1/PRKAR1B/PRKACB/CDK5/CAMK2G/ADCY2/CAMKK1/GNG2/GNAI1/PLCB1/GNAL/PDYN/GNG4/GNG8/PPP1R1B/ADCY5/PDE1A/GNG13/OPRM1/GNG3/CAMK2A/PRKG

	312 26		
REACTOME_REDUCTION_OF_CYTOSOLIC_CALEVELS	- 1.4 481 186 71	0.1517 01783	SRI/ATP2B2/SLC8A2/SLC8A3/ATP2B3
REACTOME_METALLOPROTEASE_DUBS	- 1.4 503 979 38	0.1423 98244	KAT2B/STAMBP/H2AC19/STAM/UBA52/H2AC6/BABAM1/PSMD14/RPS27A/H2AC16/H2AC17/UBB/H2AC7/H2AC20/H2AC12/H2AC21/H2AC14/H2AC4/H2AC8/H2AW
REACTOME_NEGATIVE_REGULATION_OF_NOTCH4_SIGNALING	- 1.4 504 684 29	0.0862 76598	PSMA1/PSMD3/PSMD6/PSMC3/PSMD9/PSMA4/PSMD4/UBA52/FBXW7/PSMC6/PSMB7/PSMA5/PSMD14/PSMB5/PSMB4/RPS27A/PSMB6/PSMD8/PSMA6/PSMA7/PSMD13/PSMB1/UBB/PSMA2/PSMD10/SKP1/PSMB3/RBX1
KEGG_RETINOL_METABOLISM	- 1.4 510 369 09	0.0973 05805	UGT2B4/ADH5/CYP26B1/RDH16/RDH12/CYP3A5/CYP2A13/CYP3A43/CYP2A6/RPE65/UGT2B28/CYP2C8/UGT2B15/CYP2C18/UGT2B17/ADH7/CYP4A22/CYP4A11/DHRS9/UGT2B7/ADH1B
REACTOME_MITOTIC_PROPHASE	- 1.4 518 727	0.0500 31546	ENSA/NCAPH2/SEC13/MAPK3/H4C12/TMPO/H2BC8/NUP88/PPP2R2D/H3C13/H2AC19/PLK1/PPP2CB/CCNB1/PPP2CA/H4C6/CDK1/H4-16/RAB2A/H2AC6/H3C12/CCNB2/H2BU1/H2BC21/H2BC15/H3-3A/H2AX/H2BC6/H3C4/H3C7/H2AZ1/PRKCB/H2BC4/NUP35/H2BC9/H2BC7/BANF1/H3C1/H2AC7/H2AC20/H4C8/H4C11/H4C15/H2BC13/H2BC14/H2AC14/H2AC4/H3C15/H4C5/H2AC8/H4C4/H4C1/H4C2/H2AB1/H2BC3/H2BC10/H4C3/H3C11/H4C13
WP_SPLICING_FACTOR_NOVA_REGULATED_SYNAPTIC_PROTEINS	- 1.4 542 752 75	0.1114 45536	CAMK2G/NCDN/KCNQ2/ANK3/GABBR2/GRIK2/DAB1/GRIN2B/PRKCZ/GABRG2/GRIN1

REACTOME_RAS_PROCESSING	- 1.4 559 375 08	0.1643 1522	UBA52/FNTA/LYPLA1/RPS27A/GOLGA7/PRKCQ/UBB/ABHD17B/USP17L2/PDE6D/ARL2/PRKG2
REACTOME_KINESINS	- 1.4 573 465 35	0.0929 66521	TUBB2A/KIF3C/TUBB2B/KIF22/TUBA4B/KIF21A/TUBA4A/TUBAL3/KIF3A/KIF25/TUBB3/TUBA3C/KIF9/KIF1A/TUBA8/KIF26A/TUBA1A/KIF21B/KIF19/KIF12/KIF5A/TUBB4A
REACTOME_COPI_INDEPENDENT_GOLGI_TO_ER _RETROGRADE_TRAFFIC	- 1.4 575 163 63	0.0963 12776	PLA2G4A/TUBA1B/ACTR10/PLA2G6/TUBB2A/TUBB2B/RAB18/TUBA4B/ACTR1A/TUBA4A/TUBAL3/TUBB3/TUBA3C/DCTN6/DYNLL1/PAFAH1B3/RAB6B/DCTN2/TUBA8/DCTN3/TUBA1A/DYNC111/TUBB4A
REACTOME_SLBP_DEPENDENT_PROCESSING_OF REPLICATION_DEPENDENT_HISTONE_PRE_MRNAS	- 1.4 587 333 05	0.1612 00705	SNRPF/SNRPB/LSM10/SNRPE/SNRPG
REACTOME_PHOSPHORYLATION_OF_THE_APC_COMPLEX	- 1.4 614 317 54	0.1342 1452	PLK1/ANAPC5/CCNB1/ANAPC16/ANAPC10/CDK1/UBE2E1/UBE2C/UBE2S/ANAPC15/ANAPC11
WP_FBXL10_ENHANCEMENT_OF_MAPERK_SIGNALING_IN_DIFFUSE_LARGE_BCELL_LYMPHOMA	- 1.4 619 534 63	0.1251 47952	H3-3A/H2AX/H3C4/H3C7/H2AZ1/H3C1/MACROH2A2/H3C15/H2AB1/H3C11
REACTOME_SCF_SKP2_MEDIATED_DEGRADATION_OF_P27_P21	- 1.4 684	0.0833 61723	PSMA1/PSMD3/PSMD6/PSMC3/PSMD9/PSMA4/PSMD4/CCNA2/UBA52/PSMC6/PSMB7/CKS1B/PSMA5/PSMD14/PSMB5/PSMB4/CDKN1B/RPS27A/PSMB6/PSMD8/PSMA6/PSMA7/PSMD13/PSMB1/UBB/PSMA2/PSMD10/SKP1/PSMB3/CCND1/CDK4

	030 64		
REACTOME_HORMONE_LIGAND_BINDING_RECEPTORS	- 1.4 686 658 24	0.1286 73022	GPHB5/CGA/FSHR/FSHB/GPHA2/TSHR
REACTOME_GLUCAGON_LIKE_PEPTIDE_1_GLP1_REGULATES_INSULIN_SECRETION	- 1.4 716 255 94	0.0851 81586	PRKAR1B/PRKACB/GNG2/RAPGEF4/KCNS3/GNG4/GNG8/KCNB1/ADCY5/GNG13/GNG3/KCNC2/GLP1R
BIOCARTA_ETC_PATHWAY	- 1.4 725 095 6	0.1467 56998	SLC25A6/SDHC/ATP5F1A/SDHD/UQCRC1/SDHB/NDUFA1/SLC25A4
REACTOME_TRAFFICKING_OF_GLUR2_CONTAINING_AMPA_RECEPTORS	- 1.4 735 389 39	0.1113 09962	NSF/PRKCB/GRIP1/GRIP2/GRIA4/TSPAN7/GRIA2/PRKCG
REACTOME_PROTEIN_UBIQUITINATION	- 1.4 786 591 94	0.0738 36127	UBE2R2/UBE2D3/PEX12/UBE2J2/RRAGA/USP5/H2BC1/UBE2Q2/UBE2B/PEX5/UBE2L3/UBE2D2/H2BC8/UBE2V2/UBE2A/UBA52/UCHL3/WDR61/CDC34/RPS27A/RNF144A/RNF181/H2BC15/UBE2E1/H2BC6/UBB/H2BC4/UBE2E3/H2BC9/H2BC7/UBE2N/UBE2C/PEX2/UBE2S/H2BC13/H2BC14/UBE2T/H2BC3/H2BC10
REACTOME_SYNTHESIS_OF_BILE_ACIDS_AND_BILE_SALTS_VIA_27_HYDROXYCHOLESTEROL	- 1.4 805 702 82	0.1217 41026	NR1H4/AKR1C3/AKR1C4/AKR1C2/AKR1C1

KEGG_AMYOTROPHIC_LATERAL_SCLEROSIS_ALS	- 1.4 810 210 21	0.0800 93872	PPP3R2/BID/GRIN2A/GRIA2/NEFL/NEFH/NOS1/GRIN2B/CHP2/NEFM/GRIN1
WP_GPCRS_CLASS_B_SECRETINLIKE	- 1.4 825 897 54	0.1286 73022	ADGRL3/GIPR/VIPR1/CALCRL/CRHR2/PTH2R/GLP2R/LINC02210-CRHR1/VIPR2/CRHR1/GLP1R
REACTOME_APC_CDC20_MEDIATED_DEGRADATION_OF_NEK2A	- 1.4 834 912 68	0.1156 58363	ANAPC5/UBA52/ANAPC16/ANAPC10/NEK2/RPS27A/UBE2E1/UBB/UBE2C/UBE2S/ANAPC15/ANAPC11/MAD2L1
REACTOME_AGGREPHAGY	- 1.4 836 880 11	0.1005 72339	TUBA1B/UBA52/TUBB2A/TUBB2B/TUBA4B/RPS27A/TUBA4A/TUBAL3/UBB/PARK7/TUBB3/TUBA3C/UBE2N/DYNLL1/CFTR/TUBA8/TUBA1A/DYNC111/TUBB4A
WP_SEROTONIN_AND_ANXIETY	- 1.4 838 911 28	0.1074 52575	POMC/PRKCB/HTR2A/HTR2C/GABRA1/HTR1A
REACTOME_PROTEIN_FOLDING	- 1.4 852 388 62	0.0587 3494	TUBA1B/TBCC/FBXW7/CCT7/TUBB2A/CCT6A/TUBB2B/GNAT3/CCT3/FBXL5/CCT4/TUBA4B/FBXW10/PFDN1/PFDN2/WRAP53/RGS9/TUBA4A/GNAZ/TBCB/PFDN6/VBP1/TUBAL3/TUBB3/TUBA3C/GNG7/GNAT1/GNAO1/TBCA/CCT2/PFDN4/ARL2/PFDN5/GNG2/TUBA8/GNAI1/RGS7/TUBA1A/GNG4/GNG8/GNG13/GNG3/TUBB4A
WP_HISTONE_MODIFICATIONS	- 1.4	0.0851 81586	SETMAR/H3-3A/SMYD3/SUV39H2/H3C4/H3C7/SETD9/H3C1/H4C8/H4C11/H3C15/H4C5/H4C4/H4C1/H4C2/H4C3/H3C11/H4C13

	883 661		
REACTOME_PLATELET_HOMEOSTASIS	- 1.4 911 166 16	0.0510 20408	PDE10A/P2RX5/ATP2B2/GNG2/KCNMB4/P2RX7/GNG4/GNG8/NOS1/PDE1A/GNG13/SLC8A2/KCNMB2/GNG3/ PDE2A/SLC8A3/ATP2B3/PRKG2
REACTOME_RUNX1_REGULATES_GENES_INVOLVED_IN_MEGAKARYOCYTE_DIFFERENTIATION_AND_PLATELET_FUNCTION	- 1.4 923 056 67	0.0660 17316	H2BC21/PRKCQ/H2BC15/H3- 3A/H2AX/H2BC6/H3C4/H3C7/PRMT1/H2AZ1/H2BC4/DPY30/H2BC9/H2BC7/H3C1/H2AC7/H2AC20/H4C8/H4C11 /H4C15/H2BC13/H2BC14/H2AC14/H2AC4/H3C15/H4C5/H2AC8/H4C4/H4C1/H4C2/H2AB1/H2BC3/H2BC10/H4C 3/H3C11/H4C13
REACTOME_PROTEIN_LOCALIZATION	- 1.4 927 194 67	0.0324 98816	PECR/DECR2/PEX11B/TIMM22/TIMM8A/TIMM44/UBE2D3/TIMM21/PEX12/PRNP/UBE2J2/ACBD5/PEX16/PMP CA/VAPA/MPV17/ECH1/GNPAT/TIMM17A/ZFAND6/PEX5/ACO2/UBE2D2/BCS1L/SLC25A6/PEX7/SEC61B/UBA 52/HACL1/SERP1/SLC27A2/TIMM9/GFER/TOMM20/ATP5F1A/TIMM23/MTX2/ACOT8/PEX19/SLC25A17/CYB5A /CHCHD10/LDHD/RPS27A/ATP5F1B/COA6/SGTA/GDAP1/TIMM13/COA4/UBB/ACOT4/CAMLG/PXMP2/GET1/T OMM5/COX17/HSCB/GET3/TIMM17B/SEC61G/DNAJC19/NUDT7/TIMM50/PEX2/PAM16/CHCHD5/FIS1/CMC2/C YC1/TIMM10/VAMP2/NDUFB8/TOMM22/STX1A/SLC25A4/CHCHD2/ATP5MC1/OTC/TIMM8B/BAAT/DAO
KEGG_MATURITY_ONSET_DIABETES_OF_THE_YOUNG	- 1.4 939 638 65	0.0987 99784	PAX4/SLC2A2/NEUROD1/IAPP/HNF1A/HNF1B/HNF4A/NKX2-2/PDX1/MNX1
REACTOME_THE_ROLE_OF_GTSE1_IN_G2_M_PROGRESSION_AFTER_G2_CHECKPOINT	- 1.4 949 183 98	0.0557 91636	PSMA1/FKBPL/PSMD3/PSMD6/PSMC3/TUBB4B/PSMD9/PSMA4/PSMD4/TUBA1B/PLK1/UBA52/CCNB1/TUBB2 A/CDK1/TUBB2B/PSMC6/PSMB7/PSMA5/TUBA4B/CCNB2/PSMD14/PSMB5/PSMB4/RPS27A/PSMB6/PSMD8/P SMA6/PSMA7/PSMD13/PSMB1/TUBA4A/TUBAL3/UBB/TUBB3/TUBA3C/PSMA2/PSMD10/PSMB3/TUBA8/TUBA 1A/TUBB4A
REACTOME_GLYOXYLATE_METABOLISM_AND_GLYCINE_DEGRADATION	- 1.4 962 861 84	0.1030 05431	PDHB/GNMT/GOT2/LIAS/PXMP2/GCSH/GRHPR/NDUFAB1/DAO/AGXT2

REACTOME_NITRIC_OXIDE_STIMULATES_GUANYLATE_CYCLASE	- 1.4 981 136 43	0.1286 89199	PDE10A/KCNMB4/NOS1/PDE1A/KCNMB2/PDE2A/PRKG2
REACTOME_APC_C_CDH1_MEDIATED_DEGRADATION_OF_CDC20_AND_OTHER_APC_C_CDH1_TARGETED_PROTEINS_IN_LATE_MITOSIS_EARLY_G1	- 1.5 002 879 02	0.0673 99223	PSMA1/PSMD3/PSMD6/PSMC3/PSMD9/PSMA4/PSMD4/PLK1/ANAPC5/UBA52/ANAPC16/ANAPC10/PSMC6/PSMB7/PSMA5/PSMD14/PSMB5/PSMB4/RPS27A/PSMB6/PSMD8/PTTG1/PSMA6/PSMA7/PSMD13/UBE2E1/PSMB1/UBB/AURKB/PSMA2/PSMD10/UBE2C/PSMB3/UBE2S/ANAPC15/ANAPC11
REACTOME_TRANSCRIPTIONAL_REGULATION_BY_MECP2	- 1.5 009 238 53	0.0749 86111	GPRIN1/CAMK2G/GAD1/GRIN2A/DLL1/GRIA2/GAD2/SST/GRIN2B/OPRM1/CAMK2A/MOBP/RBFOX1/PVALB
REACTOME_APC_C_CDC20_MEDIATED_DEGRADATION_OF_CYCLIN_B	- 1.5 010 042 18	0.1152 3586	ANAPC5/UBA52/CCNB1/ANAPC16/ANAPC10/CDK1/RPS27A/UBE2E1/UBB/UBE2C/UBE2S/ANAPC15/ANAPC11
KEGG_SPHINGOLIPID_METABOLISM	- 1.5 021 487 38	0.0783 39041	B4GALT6/PLPP2/SMPD3/GAL3ST1/UGT8/NEU4
WP_PHOSPHODIESTERASES_IN_NEURONAL_FUNCTION	- 1.5 099 359 18	0.0729 53977	GUCY1B1/PDE6D/PDE6A/ADCY2/PDE10A/GRIN2A/DRD1/PPP1R1B/ADCY5/PDE6H/NOS1/PDE1A/GRIN2B/PDE2A/GRIN1
REACTOME_FGFR2_LIGAND_BINDING_AND_ACTIVATION	- 1.5 104	0.1143 17684	FGFBP3/FGF4/FGFR2/FGF23/FGF16/FGFBP2/FGF8/FGF9/FGF3/FGF17



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REACTOME_INTERACTION_BETWEEN_L1_AND_A NKYRINS	- 1.5 114 078 23	0.1001 45581	KCNQ2/ANK3/SPTB/SCN5A/SCN2B/SCN2A/SPTBN2/SCN3A/SCN3B/L1CAM
REACTOME_E3_UBIQUITIN_LIGASES_UBIQUITINA TE_TARGET_PROTEINS	- 1.5 146 458 66	0.0833 68377	UBE2D3/PEX12/UBE2J2/RRAGA/H2BC1/UBE2B/PEX5/UBE2L3/UBE2D2/H2BC8/UBE2V2/UBE2A/UBA52/WDR6 1/RPS27A/RNF144A/RNF181/H2BC15/UBE2E1/H2BC6/UBB/H2BC4/H2BC9/H2BC7/UBE2N/PEX2/H2BC13/H2B C14/H2BC3/H2BC10
WP_VITAMIN_DSENSITIVE_CALCIIUM_SIGNALING_ IN_DEPRESSION	- 1.5 197 836 06	0.0660 17316	KCNQ2/ATP2B2/GRIN2A/GRM5/CYP27B1/TPH2/GRIN2B/ATP2B3/CHRM1/GRIN1/PVALB
REACTOME_SENESCENCE_ASSOCIATED_SECRE TORY_PHENOTYPE_SASP_	- 1.5 202 290 38	0.0467 42785	CDKN1B/RPS27A/H2BC21/H2BC15/H3- 3A/H2AX/UBE2E1/H2BC6/H3C4/H3C7/H2AZ1/UBB/H2BC4/H2BC9/H2BC7/H3C1/H2AC7/UBE2C/UBE2S/ANAPC 15/ANAPC11/H2AC20/H4C8/H4C11/H4C15/CDKN2D/H2BC13/H2BC14/H2AC14/H2AC4/H3C15/H4C5/H2AC8/H4 C4/H4C1/H4C2/H2AB1/H2BC3/H2BC10/H4C3/H3C11/H4C13/CDK4
WP_MECP2_AND_ASSOCIATED_RETT_SYNDROM E	- 1.5 251 759 74	0.0598 5508	FGF4/CSR1/IGF2/RPS6/GPRIN1/GRIA4/GAD1/CNP/POU4F1/DLX6/SST/DLX5/MAG/CAMK2A/FGF3/MBP/MYT 1/RBFOX1/GRIN1
REACTOME_FGFR2C_LIGAND_BINDING_AND_ACT IVATION	- 1.5 257 395 34	0.0761 0243	FGF4/FGFR2/FGF23/FGF16/FGF8/FGF9/FGF17

REACTOME_NONHOMOLOGOUS_END_JOINING_NHEJ_	- 1.5 269 540 93	0.0598 5508	H4C12/H2BC8/UBE2V2/XRCC4/H4C6/SUMO1/H4-16/BABAM1/H2BU1/H2BC21/H2BC15/H2AX/H2BC6/H2BC4/H2BC9/H2BC7/UBE2N/H4C8/H4C11/H4C15/H2BC13/H2BC14/H4C5/H4C4/H4C1/H4C2/H2BC3/H2BC10/H4C3/H4C13
PID_LIS1_PATHWAY	- 1.5 275 799 37	0.0943 86035	YWHAE/DYNLT1/CDK5/PFAFH1B3/CDK5R2/DAB1/CDK5R1/DCX/RELN
REACTOME_GABA_B_RECEPTOR_ACTIVATION	- 1.5 345 734 74	0.0745 058	KCNJ10/GNG7/KCNJ4/ADCY2/GABBR1/GNG2/GNAI1/KCNJ16/GNAL/GABBR2/GNG4/GNG8/KCNJ12/KCNJ3/ADCY5/GNG13/GNG3/KCNJ9
WP_NOCGMPPKG_MEDIATED_NEUROPROTECTION	- 1.5 373 973 37	0.0623 79275	GUCY1B1/CALM2/CAMK2G/GRIN2A/NEFL/CNGB1/NOS1/GRIN2B/CAMK2A/PDE2A/NPPB/NPPA/GRIN1/PRKG2
REACTOME_FORMATION_OF_TUBULIN_FOLDING_INTERMEDIATES_BY_CCT_TRIC	- 1.5 379 756 36	0.0883 82989	CCT5/TUBB4B/CCT6B/TUBA1B/CCT7/TUBB2A/CCT6A/TUBB2B/CCT3/CCT4/TUBA4B/TUBA4A/TUBAL3/TUBB3/TUBA3C/CCT2/TUBA8/TUBA1A/TUBB4A
REACTOME_HDMS_DEMETHYLATE_HISTONES	- 1.5 390 567 03	0.0623 79275	KDM4D/H4C6/H4-16/KDM1A/KDM5B/H3C12/H3C4/H3C7/H3C1/H4C8/H4C11/H4C15/H3C15/H4C5/H4C4/H4C1/H4C2/H4C3/H3C11/H4C13
REACTOME_APC_C_MEDIATED_DEGRADATION_OF_CELL_CYCLE_PROTEINS	- 1.5 399	0.0334 9572	PSMA1/PSMD3/PSMD6/PSMC3/PSMD9/BTRC/PSMA4/PSMD4/CCNA2/PLK1/ANAPC5/UBA52/CCNB1/ANAPC16/ANAPC10/CDK1/NEK2/PSMC6/PSMB7/PSMA5/PSMD14/PSMB5/PSMB4/RPS27A/PSMB6/PSMD8/PTTG1/PS

	761 15		MA6/PSMA7/PSMD13/UBE2E1/PSMB1/UBB/AURKB/PSMA2/PSMD10/UBE2C/SKP1/PSMB3/UBE2S/ANAPC15/ ANAPC11/MAD2L1
KEGG_CALCIIUM_SIGNALING_PATHWAY	- 1.5 400 564 13	0.0274 06824	CACNA1A/CALM2/PRKACB/CALML3/CAMK2G/ADCY2/PPP3R2/MYLK3/P2RX5/SLC25A4/TNNC1/ATP2B2/GRI N2A/P2RX7/PLCB1/GRM5/GNAL/CCKBR/HTR2A/DRD1/CACNA1E/PTGER3/HTR6/CACNA1I/NOS1/PDE1A/HTR 2C/TACR3/NTSR1/SLC8A2/PDGFR4/CAMK2A/RYR2/ERBB3/CACNA1B/CHP2/PRKCG/CHRM2/SLC8A3/ATP2B 3/DRD5/CHRM1/GRIN1/HTR5A
REACTOME_DNA_DOUBLE_STRAND_BREAK_RES PONSE	- 1.5 423 907 4	0.0388 07869	H4C12/H2BC8/UBE2V2/UBA52/H4C6/SUMO1/H4- 16/BABAM1/H2BU1/RPS27A/H2BC21/H2BC15/H2AX/H2BC6/UBB/H2BC4/MAPK8/APBB1/H2BC9/H2BC7/UBE2 N/H4C8/H4C11/H4C15/H2BC13/EYA1/H2BC14/H4C5/H4C4/H4C1/H4C2/H2BC3/H2BC10/H4C3/H4C13
WP_NEURAL_CREST_DIFFERENTIATION	- 1.5 550 973 19	0.0379 91577	HDAC11/COL11A2/MYB/NEUROG1/MIA/TFAP2B/WNT8A/GBX2/MSX2/DLL1/MPZ/ASCL1/CDH7/DCT/OLIG1/TF AP2A/FGF8/OLIG2/FOXD3/DLX5/GJB1/HES5/DLL3/MBP/PHOX2B/LHX5/LHX1
WP_SEROTONIN_AND_ANXIETYRELATED_EVENT S	- 1.5 557 832 85	0.0674 7676	HTR2A/HTR2C/CRHR1/HTR1A
REACTOME_FGFR2_MUTANT_RECEPTOR_ACTIV ATION	- 1.5 572 259 53	0.0854 87216	POLR2C/FGF22/FGF20/POLR2L/POLR2J/FGF4/POLR2K/FGFR2/POLR2I/FGF23/POLR2G/FGF16/FGF8/FGF9/ FGF3/FGF17/POLR2F
REACTOME_INWARDLY_RECTIFYING_K_CHANNE LS	- 1.5 636 961 87	0.0734 98517	KCNJ10/GNG7/KCNJ4/ABCC8/GABBR1/GNG2/KCNJ16/KCNJ11/GABBR2/GNG4/GNG8/KCNJ12/KCNJ3/GNG13 /GNG3/KCNJ9

WP_CALCIIUM_REGULATION_IN_THE_CARDIAC_CELL	- 1.5 740 961 08	0.0239 69653	ADRA1B/GNAO1/YWHAE/CASQ1/CACNA1A/CALM2/PRKAR1B/PRKACB/PRKCE/CAMK2G/ATP1B1/ADCY2/ATP2B2/GNG2/GNAI1/GJC2/GJB5/RGS7/PKIA/GNG4/FXYD2/GNG8/KCNJ3/CACNA1E/KCNB1/ADCY5/GNG13/GJB1/GNG3/CAMK2A/GJD2/PRKCZ/RYR2/CACNA1B/GJB6/PRKCG/CHRM2/SLC8A3/ATP2B3/CHRM1
REACTOME_ADORA2B_MEDIATED_ANTI_INFLAMMATORY_CYTOKINES_PRODUCTION	- 1.5 865 445 91	0.0198 64398	CALCB/GNG7/IAPP/HTR4/GPHB5/RAMP1/RLN2/PRKAR1B/PRKACB/GIPR/ADCY2/VIPR1/MC5R/GPR32/ADCYAP1/CGA/RXFP2/GPR150/FSHR/PTH2/GNG2/NPS/GNAI1/AVP/CALCRL/TAAR6/FSHB/CRHR2/PTH2R/GPR45/DRD1/GHRH/GPR27/GNG4/GNG8/NPSR1/GPHA2/GLP2R/HTR6/ADCY5/GNG13/VIPR2/CRHR1/RXFP1/GNG3/VIP/TSHR/MC4R/GPR83/DRD5/GLP1R
BIOCARTA_CK1_PATHWAY	- 1.5 907 920 52	0.0487 25038	PPP3CA/PPP2CA/GRM1/DRD2/PRKAR1B/PRKACB/CDK5/PLCB1/DRD1/CDK5R1/PPP1R1B
WP_THE_ALTERNATIVE_PATHWAY_OF_FETAL_ANDROGEN_SYNTHESIS	- 1.5 918 557 75	0.0714 92968	HSD17B3/CYB5A/SRD5A2/STAR/CYP17A1/AKR1C4/AKR1C2
REACTOME_CREATINE_METABOLISM	- 1.5 950 893 79	0.0714 92968	GAMT/GATM/SLC6A12/CKMT2/CKB/CKMT1B/CKMT1A/SLC6A7
REACTOME_INTEGRATION_OF_ENERGY_METABOLISM	- 1.5 953 745 57	0.0200 83576	CACNA1A/ABCC8/PRKAR1B/PRKACB/ADCY2/VAMP2/ADIPOQ/STX1A/ADRA2C/GNG2/GNAI1/PLCB1/RAPGEF4/STXBP1/CACNA2D2/KCNJ11/KCNS3/GNG4/GNG8/CACNA1E/KCNB1/ADCY5/SYT5/GNG13/FFAR1/GNG3/KCNC2/SNAP25/GLP1R
REACTOME_REPRODUCTION	- 1.5 955	0.0199 95966	RPA2/RAD51C/SYCE2/CATSPERD/H4C12/H2BC8/ZP3/H3C13/FKBP6/RAD21/H2AC19/CATSPER4/ADAM21/OVGP1/H4C6/H4-16/SPO11/ADAM30/H2AC6/H3C12/H2BU1/ZP2/H2BC21/H2BC15/CD9/H3-3A/H2AX/H2BC6/H3C4/H3C7/TERF2IP/H2AZ1/SYCE3/H2BC4/IZUMO2/H2BC9/H2BC7/H3C1/H2AC7/IZUMO4/M

	446 57		ND1/H2AC20/H4C8/H4C11/H4C15/H2BC13/H2BC14/TEX12/H2AC14/H2AC4/H3C15/H4C5/H2AC8/H4C4/H4C1/ H4C2/H2AB1/H2BC3/H2BC10/H4C3/H3C11/H4C13/SYCE1/CDK4
REACTOME_POST_CHAPERONIN_TUBULIN_FOLDING_PATHWAY	- 1.5 989 929 78	0.0569 34034	TUBA1B/TBCC/TUBB2A/TUBB2B/TUBA4B/TUBA4A/TBCB/TUBAL3/TUBB3/TUBA3C/TBCA/ARL2/TUBA8/TUBA1 A/TUBB4A
WP_CELLTYPE_DEPENDENT_SELECTIVITY_OF_CCK2R_SIGNALING	- 1.5 995 127 46	0.0390 62543	GNAI1/PLCB1/CCKBR/RYR2/CCK
REACTOME_ADRENALINE_NORADRENALINE_INHIBITS_INSULIN_SECRETION	- 1.5 997 397 35	0.0800 93872	ADRA2C/GNG2/GNAI1/CACNA2D2/GNG4/GNG8/ADCY5/GNG13/GNG3
REACTOME_LYSOPHINGOLIPID_AND_LPA_RECEPTORS	- 1.6 011 039 9	0.0548 57661	S1PR5/PLPPR5/LPAR3/PLPPR3/PLPPR1
REACTOME_TRANSCRIPTIONAL_REGULATION_OF_GRANULOPOIESIS	- 1.6 094 378 57	0.0246 21212	H2BC21/H2BC15/H3- 3A/H2AX/H2BC6/H3C4/H3C7/H2AZ1/H2BC4/H2BC9/H2BC7/MYB/H3C1/H2AC7/H2AC20/H4C8/H4C11/H4C15/H 2BC13/H2BC14/H2AC14/H2AC4/H3C15/H4C5/H2AC8/H4C4/H4C1/H4C2/H2AB1/H2BC3/H2BC10/H4C3/H3C11/ H4C13/CDK4
REACTOME_AMYLOID_FIBER_FORMATION	- 1.6 140 800 9	0.0202 31656	H2BC15/H3- 3A/H2AX/H2BC6/H3C4/H3C7/H2AZ1/UBB/SEMG1/H2BC4/IAPP/H2BC9/H2BC7/H3C1/H2AC7/TSPAN15/H2AC20 /H4C8/H4C11/H4C15/H2BC13/H2BC14/H2AC14/H2AC4/H3C15/H4C5/TTR/H2AC8/H4C4/APOA4/H4C1/SNCA/H 4C2/H2AB1/H2BC3/H2BC10/H4C3/H3C11/PRL/NPPA/H4C13

REACTOME_EPIGENETIC_REGULATION_OF_GEN E_EXPRESSION	- 1.6 177 206	0.0198 64398	CCNH/H2BC21/GTF2H5/H2BC15/H3- 3A/H2AX/H2BC6/H3C4/H3C7/H2AZ1/H2BC4/POLR2K/H2BC9/H2BC7/ZNRD1/H3C1/H2AC7/H2AC20/H4C8/H4C 11/H4C15/H2BC13/H2BC14/H2AC14/H2AC4/H3C15/H4C5/H2AC8/H4C4/H4C1/H4C2/H2AB1/H2BC3/H2BC10/H4 C3/H3C11/H4C13/POLR2F
WP_FRAGILE_X_SYNDROME	- 1.6 217 137 63	0.0198 64398	MLST8/ABAT/GRIP1/DNM1/TBC1D7/KCNC1/GRIP2/NTRK2/CYFIP2/GAD1/GRIN2A/PLCB1/GRIA2/GABRD/GR M5/SHANK1/KCND2/AGAP2/PTPN5/DLGAP3/GRIN2B/CAMK2A/GABRB2/GABRG2/SH3GL3/HCN1/GABRA1/G RIN1
REACTOME_G_PROTEIN_ACTIVATION	- 1.6 234 508 75	0.0683 84289	GNAZ/POMC/GNG7/GNAT1/GNAO1/GNG2/GNAI1/PDYN/GNG4/GNG8/GNG13/OPRM1/GNG3
REACTOME_GLUCAGON_TYPE_LIGAND_RECEPT ORS	- 1.6 252 554 73	0.0551 24569	GIPR/VIPR1/ADCYAP1/GNG2/GHRH/GNG4/GNG8/GLP2R/GNG13/VIPR2/GNG3/VIP/GLP1R
REACTOME_MUSCLE_CONTRACTION	- 1.6 259 694 68	0.0198 64398	FXYD1/TNNI1/TMOD1/RANGRF/MYL3/KCNJ4/GUCY1B1/CACNG8/CASQ1/CACNG7/FKBP1B/CAMK2G/ATP1B 1/KCNK4/FGF14/TRIM72/ACTC1/TNNC1/ATP2B2/SCN5A/CACNG4/SCN2B/SCN2A/KCNK9/TBX5/CACNA2D2/K CNK3/KCNJ11/KCNIP3/CACNA2D3/FXYD2/KCNJ12/KCND2/SCN3A/KCNIP4/TRDN/FXYD6/MYBPC1/SCN3B/FX YD7/NOS1/MYL1/SLN/FGF13/FGF12/KCNK1/KCNK12/SLC8A2/KCNIP2/CAMK2A/CACNG2/ATP1A3/NPPA/RYR 2/SLC8A3/ATP2B3/CACNG3/FXYD4/TNNT2/MYL2
WP_SUDDEN_INFANT_DEATH_SYNDROME_SIDS_ SUSCEPTIBILITY_PATHWAYS	- 1.6 302 617 66	0.0198 64398	PRKAR1B/PAH/PRKACB/NTRK2/VIPR1/PHOX2A/VAMP2/ADCYAP1/SLC25A4/SCN5A/CHRN2/AVP/MAP2/TH/ RET/HTR2A/ASCL1/TAC1/TPH2/LMX1B/TF/TPPP/SCN3B/SST/NKX2- 2/VIPR2/CHRNA4/SSTR2/HES5/ATP1A3/RYR2/PHOX2B/PLP1/CHRM2/SNAP25/GABRA1/GRIN1/FEV/HTR1A/S STR1/TLX3
REACTOME_MRNA_SPLICING_MINOR_PATHWAY	- 1.6 374	0.0260 49679	POLR2C/POLR2L/SF3B6/SNRNP35/POLR2J/TXNL4A/ZCRB1/SNRPD1/YBX1/SNRPF/SNRPB/SNU13/POLR2K/ SF3B5/POLR2I/ZMAT5/POLR2G/SNRPD2/SNRPE/SNRNP25/LSM2/SNRPG/POLR2F

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REACTOME_CGMP_EFFECTS	- 1.6 393 649 85	0.0331 92879	PDE10A/KCNMB4/PDE1A/KCNMB2/PDE2A/PRKG2
REACTOME_ION_TRANSPORT_BY_P_TYPE_ATPASES	- 1.6 469 857 7	0.0308 15982	CUTC/ATP10B/ATP1A4/PDZD11/FXYD3/SRI/FXYD1/CAMK2G/ATP1B1/ATP2B2/ATP4A/ATP2C2/ATP8A1/FXYD2/FXYD6/FXYD7/SLN/ATP8A2/CAMK2A/ATP1A3/ATP13A5/ATP2B3/FXYD4
WP_NICOTINE_ACTIVITY_ON_DOPAMINERGIC_NEURONS	- 1.6 503 267 74	0.0478 02761	CDK5/ADCY2/GNG2/CHRNA2/GNAI1/TH/KCNK9/KCNK3/PPP1R1B/CHRNA4
WP_OLIGODENDROCYTE_SPECIFICATION_AND_DIFFERENTIATION_LEADING_TO_MYELIN_COMPONENTS_FOR_CNS	- 1.6 582 570 87	0.0323 06543	CNP/ASCL1/OLIG1/OLIG2/OMG/NKX2-2/SOX8/MAG/MBP/MOG/MYT1/PLP1
REACTOME_HCMV_INFECTION	- 1.6 663 174 25	0.0198 64398	TUBB2A/CHMP6/H4C6/VPS37B/TUBB2B/H4-16/VPS25/H2AC6/TUBA4B/H3C12/H2BU1/H2AC16/H2BC21/H2AC17/H2BC15/H2BC6/H3C4/VPS28/TUBA4A/TUBAL3/H3C7/TUBB3/H2BC4/TUBA3C/NUP35/H2BC9/H2BC7/H3C1/DYNLL1/H2AC7/VPS37D/MVB12B/H2AC20/H4C8/H4C11/H4C15/H2BC13/H2AC12/H2BC14/TUBA8/H2AC21/H2AC14/H2AC4/H3C15/H4C5/H2AC8/H4C4/TUBA1A/H4C1/H4C2/H2BC3/H2AW/H2BC10/H4C3/H3C11/DYNC111/H4C13/TUBB4A
REACTOME_GENE_SILENCING_BY_RNA	- 1.6 703 951 38	0.0198 64398	TARBP2/H4C12/H2BC8/NUP88/H3C13/FKBP6/H2AC19/POLR2C/TSNAX/TDRKH/H4C6/H4-16/POLR2L/HENMT1/POLR2J/H2AC6/H3C12/PRKRA/RAN/H2BU1/H2BC21/H2BC15/H3-3A/H2AX/H2BC6/H3C4/H3C7/H2AZ1/H2BC4/POLR2K/NUP35/POLR2I/H2BC9/H2BC7/H3C1/H2AC7/PLD6/POLR2G/TDRD9/H2AC20/H4C8/H4C11/H4C15/H2BC13/H2BC14/H2AC14/H2AC4/H3C15/DDX4/H4C5/H2AC8/H4C4/H4C1/H4C2/H2AB1/H2BC3/H2BC10/H4C3/H3C11/H4C13/POLR2F

BIOCARTA_NOS1_PATHWAY	- 1.6 727 246 66	0.0375 93629	DLG4/CALM3/PRKCB/PPP3CB/CALM2/PRKAR1B/PRKACB/GRIN2A/NOS1/GRIN2B/GRIN1
REACTOME_ACTIVATION_OF_ANTERIOR_HOX_GENES_IN_HINDBRAIN_DEVELOPMENT_DURING_EARLY_EMBRYOGENESIS	- 1.6 747 306 24	0.0198 64398	HOXA4/H2BC21/H2BC15/H3-3A/H2AX/H2BC6/H3C4/H3C7/H2AZ1/H2BC4/POLR2K/POLR2I/HOXC4/H2BC9/H2BC7/H3C1/H2AC7/POLR2G/H2AC20/H4C8/H4C11/H4C15/H2BC13/H2BC14/H2AC14/H2AC4/HOXD3/H3C15/H4C5/H2AC8/H4C4/H4C1/H4C2/H2AB1/H2BC3/H2BC10/H4C3/H3C11/HOXD1/H4C13/POLR2F
REACTOME_SEROTONIN_RECEPTORS	- 1.6 910 578 6	0.0385 57536	HTR2A/HTR6/HTR2C/HTR5A/HTR1E/HTR1A
REACTOME_COOPERATION_OF_PREFOLDIN_AND_TRIC_CCT_IN_ACTIN_AND_TUBULIN_FOLDING	- 1.6 914 315 65	0.0220 62165	CCT6B/TUBA1B/CCT7/TUBB2A/CCT6A/TUBB2B/CCT3/CCT4/TUBA4B/PFDN1/PFDN2/TUBA4A/PFDN6/VBP1/TUBAL3/TUBB3/TUBA3C/CCT2/PFDN4/PFDN5/TUBA8/TUBA1A/TUBB4A
WP_MITOCHONDRIAL_CIII_ASSEMBLY	- 1.6 924 931 21	0.0198 64398	LYRM7/UQCRB/UQCRC1/UQCR10/UQCC3/UQCRC2/UQCRFS1/CYC1/UQCRH/UQCC2/UQCRQ/UQCR11
REACTOME_OXIDATIVE_STRESS_INDUCED_SENSCENCE	- 1.7 137 379 31	0.0198 64398	H2BC21/H2BC15/H3-3A/H2AX/H2BC6/H3C4/H3C7/H2AZ1/UBB/CBX8/BMI1/H2BC4/MAPK8/H2BC9/CBX2/H2BC7/H3C1/H2AC7/MAPK10/H2AC20/H4C8/H4C11/H4C15/CDKN2D/H2BC13/H2BC14/H2AC14/H2AC4/H3C15/H4C5/H2AC8/H4C4/H4C1/H4C2/H2AB1/H2BC3/H2BC10/H4C3/H3C11/H4C13/CDK4
REACTOME_REGULATION_OF_INSULIN_SECRETION	- 1.7 164	0.0198 64398	CACNA1A/ABCC8/PRKAR1B/PRKACB/VAMP2/STX1A/ADRA2C/GNG2/GNAI1/PLCB1/RAPGEF4/STXBP1/CACNA2D2/KCNJ11/KCNS3/GNG4/GNG8/CACNA1E/KCNB1/ADCY5/SYT5/GNG13/FFAR1/GNG3/KCNC2/SNAP25/GLP1R



	656 58		
REACTOME_P75NTR_REGULATES_AXONOGENESIS	- 1.7 309 728 96	0.0239 07265	RTN4R/LINGO1/OMG/MAG/MCF2
REACTOME_HCMV_EARLY_EVENTS	- 1.7 322 003 18	0.0198 64398	H2BC21/H2AC17/H2BC15/H2BC6/H3C4/TUBA4A/TUBAL3/H3C7/TUBB3/H2BC4/TUBA3C/NUP35/H2BC9/H2BC7/H3C1/DYNLL1/H2AC7/H2AC20/H4C8/H4C11/H4C15/H2BC13/H2AC12/H2BC14/TUBA8/H2AC21/H2AC14/H2AC4/H3C15/H4C5/H2AC8/H4C4/TUBA1A/H4C1/H4C2/H2BC3/H2AW/H2BC10/H4C3/H3C11/DYNC111/H4C13/TUBB4A
REACTOME_NOREPINEPHRINE_NEUROTRANSMITTER_RELEASE_CYCLE	- 1.7 392 892 79	0.0198 64398	SLC22A2/PPFIA4/TSP0AP1/VAMP2/STX1A/PPFIA3/STXBP1/CPLX1/RIMS1/RAB3A/SYT1/SNAP25
REACTOME_ION_HOMEOSTASIS	- 1.7 438 291 55	0.0198 64398	FXVD3/SRI/FXVD1/CASQ1/FKBP1B/CAMK2G/ATP1B1/ATP2B2/KCNJ11/FXVD2/TRDN/FXVD6/FXVD7/NOS1/SLN/SLC8A2/CAMK2A/ATP1A3/RYR2/SLC8A3/ATP2B3/FXVD4
REACTOME_ACTIVATION_OF_NMDA_RECEPTORS_AND_POSTSYNAPTIC_EVENTS	- 1.7 461 532 76	0.0198 64398	TUBB2A/PRKAG1/TUBB2B/DLG4/ARHGEF7/TUBA4B/PRKAG2/ERBB4/CAMK4/APBA1/TUBA4A/TUBAL3/TUBB3/TUBA3C/KIF17/PRKAR1B/PPM1E/PRKACB/CAMK2G/GRIA4/MAPT/RASGRF2/CAMKK1/LIN7B/TUBA8/GRIN2A/DLG2/GRIA2/GRIN3A/TUBA1A/NEFL/RASGRF1/GRIN2B/LRRC7/NRGN/CAMK2A/TUBB4A/GRIN1
REACTOME_MEIOSIS	- 1.7 498 221 68	0.0198 64398	H2BC21/H2BC15/H3-3A/H2AX/H2BC6/H3C4/H3C7/TERF2IP/H2AZ1/SYCE3/H2BC4/H2BC9/H2BC7/H3C1/H2AC7/MND1/H2AC20/H4C8/H4C11/H4C15/H2BC13/H2BC14/TEX12/H2AC14/H2AC4/H3C15/H4C5/H2AC8/H4C4/H4C1/H4C2/H2AB1/H2BC3/H2BC10/H4C3/H3C11/H4C13/SYCE1/CDK4

REACTOME_CHROMOSOME_MAINTENANCE	- 1.7 586 065 34	0.0198 64398	CENPL/RUVBL1/RBBP4/RPA3/RUVBL2/CENPA/CENPS/RPA2/H4C12/CCNA2/H2BC8/CENPK/OIP5/H2AC19/P OLR2C/CENPW/CENPU/H4C6/H4- 16/POLR2L/PRIM1/CENPM/POLR2J/PIF1/H2AC6/H2BU1/NOP10/WRAP53/H2BC21/ITGB3BP/H2BC15/H3- 3A/H2AX/H2BC6/CENPH/TERF2IP/H2AZ1/H2BC4/POLR2K/POLR2I/CENPQ/H2BC9/H2BC7/H2AC7/POLR2G/N HP2/CENPX/H2AC20/H4C8/H4C11/H4C15/H2BC13/H2BC14/H2AC14/H2AC4/H4C5/H2AC8/H4C4/H4C1/H4C2/H 2AB1/H2BC3/H2BC10/H4C3/H4C13/POLR2F
REACTOME_FORMATION_OF_THE_BETA_CATENIN_TCF_TRANSACTIVATING_COMPLEX	- 1.7 645 548 6	0.0198 64398	H2BC21/H2BC15/H3- 3A/H2AX/H2BC6/H3C4/H3C7/H2AZ1/H2BC4/H2BC9/H2BC7/H3C1/H2AC7/H2AC20/H4C8/H4C11/H4C15/H2BC1 3/H2BC14/H2AC14/H2AC4/H3C15/H4C5/H2AC8/H4C4/H4C1/H4C2/H2AB1/H2BC3/H2BC10/H4C3/H3C11/H4C13
REACTOME_TELOMERE_MAINTENANCE	- 1.7 651 846 27	0.0198 64398	RPA3/RUVBL2/RPA2/H4C12/CCNA2/H2BC8/H2AC19/POLR2C/H4C6/H4- 16/POLR2L/PRIM1/POLR2J/PIF1/H2AC6/H2BU1/NOP10/WRAP53/H2BC21/H2BC15/H3- 3A/H2AX/H2BC6/TERF2IP/H2AZ1/H2BC4/POLR2K/POLR2I/H2BC9/H2BC7/H2AC7/POLR2G/NHP2/H2AC20/H4 C8/H4C11/H4C15/H2BC13/H2BC14/H2AC14/H2AC4/H4C5/H2AC8/H4C4/H4C1/H4C2/H2AB1/H2BC3/H2BC10/H 4C3/H4C13/POLR2F
REACTOME_HCMV_LATE_EVENTS	- 1.7 677 520 89	0.0198 64398	SEC13/TSG101/H4C12/H2BC8/NUP88/H3C13/H2AC19/CHMP6/H4C6/VPS37B/H4- 16/VPS25/H2AC6/H3C12/H2BU1/H2AC16/H2BC21/H2AC17/H2BC15/H2BC6/H3C4/VPS28/H3C7/H2BC4/NUP35/ H2BC9/H2BC7/H3C1/H2AC7/VPS37D/MVB12B/H2AC20/H4C8/H4C11/H4C15/H2BC13/H2AC12/H2BC14/H2AC2 1/H2AC14/H2AC4/H3C15/H4C5/H2AC8/H4C4/H4C1/H4C2/H2BC3/H2AW/H2BC10/H4C3/H3C11/H4C13
KEGG_ALZHEIMERS_DISEASE	- 1.7 690 410 53	0.0198 64398	NDUFS8/ATP5PD/ATP5F1B/COX4I2/UQCRB/NDUFS7/ATP5F1E/UQCRC1/ATP5F1D/COX6C/NDUFB2/SDHB/N DUFC1/PPP3CB/NDUFS5/UQCR10/BAD/COX5A/NDUFA8/NDUFS3/NDUFA1/APBB1/UQCRC2/ATP5PB/NDUFA 6/ATP5MC3/ATP5MC2/NDUFV2/UQCRHL/NDUFB3/NDUFS4/NDUFA9/UQCRFS1/COX7A2L/COX7C/COX6B1/C OX8A/ATP5PF/NDUFA7/CALM2/NDUFA3/NDUFB10/ATP5F1C/CDK5/CALML3/NDUFB4/PPP3R2/NDUFC2/CYC 1/COX4I1/UQCRH/MAPT/NDUFB6/NDUFB8/NDUFB1/ATP5PO/UQCRQ/BID/NDUFAB1/COX5B/NDUFB5/NDUFA 2/UQCR11/COX7B/ATP5MC1/NDUFB7/GRIN2A/NDUFB9/COX7B2/COX6A1/PLCB1/COX7A2/NDUFA4/COX6A2/ SNCA/CDK5R1/NOS1/GRIN2B/CHP2/GRIN1
REACTOME_MITOCHONDRIAL_PROTEIN_IMPORT	- 1.7 707 253 78	0.0198 64398	TIMM22/TIMM8A/TIMM44/TIMM21/PMPCA/TIMM17A/ACO2/BCS1L/SLC25A6/TIMM9/GFER/TOMM20/ATP5F1A/ TIMM23/MTX2/CHCHD10/LDHD/ATP5F1B/COA6/TIMM13/COA4/TOMM5/COX17/HSCB/TIMM17B/DNAJC19/TIM M50/PAM16/CHCHD5/CMC2/CYC1/TIMM10/NDUFB8/TOMM22/SLC25A4/CHCHD2/ATP5MC1/OTC/TIMM8B

REACTOME_ACETYLCHOLINE_NEUROTRANSMITTER_RELEASE_CYCLE	- 1.7 721 357 38	0.0198 64398	SLC5A7/PPFIA4/SLC18A3/TSP0AP1/VAMP2/STX1A/PPFIA3/STXBP1/CPLX1/RIMS1/RAB3A/SYT1/SNAP25
WP_MONOAMINE_GPCRS	- 1.7 872 947 36	0.0198 64398	ADRA2C/HTR2A/DRD1/HTR6/HTR2C/CHRM2/DRD5/CHRM1/HTR5A/HTR1E/HTR1A
REACTOME_ORGANIC_ANION_TRANSPORTERS	- 1.7 880 104 72	0.0198 64398	SLC5A8/SLC17A6/SLC17A8/SLC17A7
REACTOME_PRESYNAPTIC_DEPOLARIZATION_AND_CALCIIUM_CHANNEL_OPENING	- 1.8 016 067 82	0.0198 64398	CACNA1A/CACNG4/CACNA2D2/CACNA2D3/CACNA1E/CACNG2/CACNA1B
REACTOME_LGI_ADAM_INTERACTIONS	- 1.8 027 093 73	0.0198 64398	LG11/CACNG8/ADAM11/STX1A/CACNG4/STX1B/CACNG2/LGI3/CACNG3
REACTOME_NEUROTOXICITY_OF_CLOSTRIDIUM_TOXINS	- 1.8 101 243 56	0.0198 64398	VAMP1/SYT2/VAMP2/STX1A/SV2C/STX1B/SV2B/SYT1/SNAP25
REACTOME_HATS_ACETYLATE_HISTONES	- 1.8 115	0.0198 64398	H4C6/SUPT3H/MORF4L2/H4-16/SGF29/H2AC6/MORF4L1/TAF9/H3C12/H2BU1/H2AC16/ACTL6A/ELP6/H2BC21/H2AC17/H2BC15/H2BC6/H3C4/TADA1/H3C7/ELP5/H2BC4/VPS72/H2BC9/H2BC7/KANSL2/H3C1/H2AC7/JADE3/H2AC20/H4C8/H4C11/H4C

	314 07		15/ING4/H2BC13/H2AC12/H2BC14/H2AC21/H2AC14/H2AC4/H3C15/H4C5/H2AC8/H4C4/H4C1/H4C2/H2BC3/H2AW/H2BC10/YEATS4/H4C3/H3C11/H4C13
REACTOME_DNA_DAMAGE_TELOMERE_STRESS_INDUCED_SENESCENCE	- 1.8 116 236 12	0.0198 64398	H2BU1/CDKN1B/ASF1A/H2BC21/H1-1/H2BC15/H2AX/H1-2/H2BC6/TERF2IP/H2AZ1/H2BC4/H2BC9/H2BC7/H2AC7/H1-3/H2AC20/H4C8/H4C11/H4C15/H2BC13/H1-4/H2BC14/H2AC14/H2AC4/H4C5/H2AC8/H4C4/H4C1/H4C2/H2AB1/H2BC3/H1-5/H2BC10/H4C3/H4C13
REACTOME_TRAFFICKING_OF_AMPA_RECEPTORS	- 1.8 133 795 13	0.0198 64398	PRKCB/GRIP1/CACNG8/GRIP2/CAMK2G/GRIA4/TSPAN7/CACNG4/GRIA2/CAMK2A/CACNG2/PRKCG/CACNG3
REACTOME_FORMATION_OF_ATP_BY_CHEMIOSMOTIC_COUPLING	- 1.8 140 554 11	0.0198 64398	ATP5F1A/ATP5PD/ATP5F1B/ATP5F1E/ATP5F1D/ATP5PB/ATP5MC3/ATP5MC2/ATP5PF/ATP5F1C/ATP5MF/ATP5PO/ATP5MG/ATP5ME/ATP5MC1
REACTOME_TRANSCRIPTIONAL_REGULATION_BY_SMALL_RNAS	- 1.8 151 225 97	0.0198 64398	H4C12/H2BC8/NUP88/H3C13/H2AC19/POLR2C/H4C6/H4-16/POLR2L/POLR2J/H2AC6/H3C12/RAN/H2BU1/H2BC21/H2BC15/H3-3A/H2AX/H2BC6/H3C4/H3C7/H2AZ1/H2BC4/POLR2K/NUP35/POLR2I/H2BC9/H2BC7/H3C1/H2AC7/POLR2G/H2AC20/H4C8/H4C11/H4C15/H2BC13/H2BC14/H2AC14/H2AC4/H3C15/H4C5/H2AC8/H4C4/H4C1/H4C2/H2AB1/H2BC3/H2BC10/H4C3/H3C11/H4C13/POLR2F
WP_COMMON_PATHWAYS_UNDERLYING_DRUG_ADDICTION	- 1.8 174 678 26	0.0198 64398	CALM2/PRKACB/GRIA4/GNAI1/GRIN2A/GRIA2/GRM5/DRD1/PPP1R1A/GJB1/CAMK2A/PRKCG/GRIN1
REACTOME_METABOLISM_OF_AMINO_ACIDS_AND_DERIVATIVES	- 1.8 238 176 77	0.0198 64398	GAMT/CBSL/SLC45A2/RPS20/OAT/DDC/RPL22/ADO/GATM/RPS2/LIPT1/CPS1/UBA52/GSTZ1/AHCY/ECHS1/PSPH/SLC6A12/RPL37/RPS28/PYCR3/PSMC6/RPLP1/PCBD1/PSMB7/PDHB/RPL6/PSMA5/GCDH/PAPSS1/RPL23A/RPL12/HIBCH/GNMT/RPL10/PSMD14/GOT2/RPS17/PYCR1/PHGDH/CKMT2/LIAS/RPL23/RPS27/PSMB5/PSMB4/RPLP0/RPS27A/RPL14/EEF1E1/GPT2/SERINC5/PSMB6/PSMD8/RPL30/RPL26/OAZ1/RPLP2/RPL13/HNMT/PSMA6/RPL36A/RPL19/ASRGL1/GPT/PSMA7/BHMT/RPS24/TST/PSMD13/AADAT/RPL17/MARS1/PSMB1/RPL8/OAZ3/TSTD1/KYAT1/RPL10A/RPS23/TXN2/RPL41/MPST/RPL13A/FOLH1/PXMP2/RPL26L1/RPS15/RPS19/

			GCAT/GCSH/RPS25/RPS13/PSMA2/PSMD10/ENOPH1/RPL18/RPL34/RPS6/TPO/RPL21/ODC1/PRODH/RPS9/AFMID/RPL5/RPL37A/GRHPR/RPS8/ARG2/RPL7A/PSMB3/RPL22L1/PPM1K/RPL38/RPL36/RPS29/RPL15/RPL35A/RPL29/PAH/GLUD1/RPL31/RPL27A/RPS11/RPS15A/CKB/RIDA/RPS26/RPS3/RPS14/FAU/RIMKLA/RPS16/RPS5/RPL32/RPSA/PSTK/RPS7/RPL39/RPS10/RPS21/RPL18A/GOT1/RPL35/RPS18/QDPR/RPS4Y1/NDUFAB1/CGA/RPL27/RPL24/RPS4Y2/GLS2/PSAT1/OTC/RPL9/TH/ASPA/TYRP1/OCA2/RPS3A/SLC44A1/DCT/INMT/TPH2/TYR/CARNS1/PNMT/CKMT1B/CKMT1A/DAO/SLC25A21/AGXT2/SLC6A7/CRYM
BIOCARTA_GABA_PATHWAY	- 1.8 254 303 18	0.0198 64398	GABRA4/GABRA2/GABRA6/GABRA5/GABRA3/GABRA1
REACTOME_AMINE_LIGAND_BINDING_RECEPTORS	- 1.8 304 221 71	0.0198 64398	ADRA2C/TAAR6/HTR2A/DRD1/HTR6/HTR2C/CHRM2/DRD5/CHRM1/HTR5A/HRH3/HTR1E/HTR1A
REACTOME_MEIOTIC_SYNAPSIS	- 1.8 312 834 4	0.0198 64398	H2BC21/H2BC15/H2AX/H2BC6/TERF2IP/H2AZ1/SYCE3/H2BC4/H2BC9/H2BC7/H2AC7/H2AC20/H4C8/H4C11/H4C15/H2BC13/H2BC14/TEX12/H2AC14/H2AC4/H4C5/H2AC8/H4C4/H4C1/H4C2/H2AB1/H2BC3/H2BC10/H4C3/H4C13/SYCE1
REACTOME_CREB1_PHOSPHORYLATION_THROUGH_NMDA_RECEPTOR_MEDIATED_ACTIVATION_OF_RAS_SIGNALING	- 1.8 351 038 87	0.0198 64398	CAMK2G/RASGRF2/DLG2/NEFL/RASGRF1/GRIN2B/LRRC7/CAMK2A/GRIN1
REACTOME_ASSEMBLY_AND_CELL_SURFACE_PPRESENTATION_OF_NMDA_RECEPTORS	- 1.8 388 531 47	0.0198 64398	APBA1/TUBA4A/TUBAL3/TUBB3/TUBA3C/KIF17/CAMK2G/LIN7B/TUBA8/GRIN2A/DLG2/GRIN3A/TUBA1A/NEFL/GRIN2B/LRRC7/CAMK2A/TUBB4A/GRIN1

REACTOME_RUNX1_REGULATES_TRANSCRIPTIO N_OF_GENES_INVOLVED_IN_DIFFERENTIATION_ OF_HSCS	- 1.8 449 254 17	0.0198 64398	PSMB7/PSMA5/H2AC6/TCF12/H3C12/PSMD14/H2BU1/PSMB5/PSMB4/RPS27A/PSMB6/PSMD8/CCNH/PSMA6/ H2BC21/PSMA7/PSMD13/H2BC15/H3- 3A/H2AX/PSMB1/H2BC6/H3C4/H3C7/H2AZ1/UBB/H2BC4/PSMA2/PSMD10/H2BC9/H2BC7/MYB/H3C1/H2AC7/P SMB3/H2AC20/H4C8/H4C11/H4C15/H2BC13/LMO1/H2BC14/H2AC14/H2AC4/H3C15/H4C5/H2AC8/H4C4/H4C1/ H4C2/H2AB1/H2BC3/H2BC10/H4C3/H3C11/H4C13
REACTOME_ACTIVATION_OF_THE_MRNA_UPON_ BINDING_OF_THE_CAP_BINDING_COMPLEX_AND _EIFS_AND_SUBSEQUENT_BINDING_TO_43S	- 1.8 553 121 91	0.0198 64398	RPS20/EIF3H/RPS2/EIF3K/RPS28/EIF4E/EIF3E/EIF3I/RPS17/RPS27/RPS27A/EIF4A2/RPS24/RPS23/RPS15/R PS19/RPS25/RPS13/RPS6/RPS9/RPS8/RPS29/RPS11/RPS15A/RPS26/RPS3/RPS14/FAU/RPS16/RPS5/RPSA/ RPS7/RPS10/RPS21/RPS18/RPS4Y1/RPS4Y2/RPS3A
REACTOME_BASE_EXCISION_REPAIR	- 1.8 586 364 14	0.0198 64398	H2BC21/H2BC15/H2AX/POLE3/H2BC6/TERF2IP/H2AZ1/H2BC4/POLE4/H2BC9/H2BC7/H2AC7/MPG/NTHL1/PO LB/H2AC20/H4C8/H4C11/H4C15/H2BC13/H2BC14/H2AC14/H2AC4/H4C5/H2AC8/H4C4/H4C1/H4C2/H2AB1/H2 BC3/H2BC10/H4C3/H4C13
REACTOME_NEGATIVE_REGULATION_OF_NMDA_ RECEPTOR_MEDIATED_NEURONAL_TRANSMISSI ON	- 1.8 690 894 86	0.0198 64398	PPM1E/CAMK2G/GRIN2A/DLG2/NEFL/GRIN2B/LRRC7/CAMK2A/GRIN1
REACTOME_INFLUENZA_INFECTION	- 1.8 716 750 87	0.0198 64398	RPS12/RPL3/NUP88/SLC25A6/RPS20/RPL22/RPS2/UBA52/POLR2C/RPL37/RPS28/POLR2L/KPNA5/RPLP1/PO LR2J/RPL6/RPL23A/RPL12/RPL10/RAN/CLTA/RPS17/RPL23/RPS27/RPLP0/RPS27A/RPL14/RPL30/RPL26/RPL P2/RPL13/RPL36A/RPL19/RPS24/RPL17/RPL8/RPL10A/RPS23/RPL41/RPL13A/POLR2K/RPL26L1/RPS15/RPS 19/NUP35/POLR2I/RPS25/RPS13/RPL18/RPL34/RPS6/RPL21/RPS9/RPL5/RPL37A/RPS8/RPL7A/RPL22L1/RPL 38/RPL36/RPS29/RPL15/RPL35A/RPL29/POLR2G/RPL31/RPL27A/RPS11/RPS15A/RPS26/RPS3/RPS14/FAU/R PS16/RPS5/RPL32/RPSA/RPS7/RPL39/RPS10/RPS21/RPL18A/RPL35/RPS18/RPS4Y1/RPL27/RPL24/RPS4Y2/ RPL9/RPS3A/POLR2F
REACTOME_PHASE_0_RAPID_DEPOLARISATION	- 1.8 768 552	0.0198 64398	RANGRF/CACNG8/CACNG7/CAMK2G/FGF14/SCN5A/CACNG4/SCN2B/SCN2A/CACNA2D2/CACNA2D3/SCN3 A/SCN3B/FGF13/FGF12/CAMK2A/CACNG2/CACNG3
REACTOME_POSITIVE_EPIGENETIC_REGULATIO N_OF_RRNA_EXPRESSION	- 1.8	0.0198 64398	KAT2B/H4C12/H2BC8/H3C13/HDAC2/TAF1D/H2AC19/H4C6/H4- 16/POLR2L/H2AC6/H3C12/H2BU1/H2BC21/H2BC15/H3-

	772 419 62		3A/H2AX/H2BC6/H3C4/H3C7/H2AZ1/H2BC4/POLR2K/H2BC9/H2BC7/ZNRD1/H3C1/H2AC7/H2AC20/H4C8/H4C11/H4C15/H2BC13/H2BC14/H2AC14/H2AC4/H3C15/H4C5/H2AC8/H4C4/H4C1/H4C2/H2AB1/H2BC3/H2BC10/H4C3/H3C11/H4C13/POLR2F
WP_DISRUPTION_OF_POSTSYNAPTIC_SIGNALLING_BY_CNV	- 1.8 856 872 08	0.0198 64398	NRXN2/CAMK2G/STX1A/NRXN1/DLGAP1/GRIN2A/DLG2/SHANK1/GRIN2B/CAMK2A/RYR2/GRIN1
WP_MBDNF_AND_PROBDNF_REGULATION_OF_GABA_NEUROTRANSMISSION	- 1.8 916 324 91	0.0198 64398	NTRK2/GABRQ/GABRA4/GABRD/GABRA2/GABRB3/GABRP/GABRG1/GABRA6/SLC12A5/GABRG3/GABRB2/GABRA5/GABRG2/GABRA3/GABRA1
REACTOME_CARDIAC_CONDUCTION	- 1.8 936 103 61	0.0198 64398	FXVD1/RANGRF/KCNJ4/CACNG8/CASQ1/CACNG7/FKBP1B/CAMK2G/ATP1B1/KCNK4/FGF14/ATP2B2/SCN5A/CACNG4/SCN2B/SCN2A/KCNK9/TBX5/CACNA2D2/KCNK3/KCNJ11/KCNIP3/CACNA2D3/FXYD2/KCNJ12/KCNKD2/SCN3A/KCNIP4/TRDN/FXYD6/SCN3B/FXYD7/NOS1/SLN/FGF13/FGF12/KCNK1/KCNK12/SLC8A2/KCNIP2/CAMK2A/CACNG2/ATP1A3/NPPA/RYR2/SLC8A3/ATP2B3/CACNG3/FXYD4
REACTOME_MEIOTIC_RECOMBINATION	- 1.8 955 843 89	0.0198 64398	H2BC21/H2BC15/H3- 3A/H2AX/H2BC6/H3C4/H3C7/H2AZ1/H2BC4/H2BC9/H2BC7/H3C1/H2AC7/MND1/H2AC20/H4C8/H4C11/H4C15/H2BC13/H2BC14/H2AC14/H2AC4/H3C15/H4C5/H2AC8/H4C4/H4C1/H4C2/H2AB1/H2BC3/H2BC10/H4C3/H3C11/H4C13/CDK4
REACTOME_RNA_POLYMERASE_I_TRANSCRIPTION	- 1.8 994 636 76	0.0198 64398	MAPK3/KAT2B/H4C12/H2BC8/H3C13/HDAC2/TAF1D/H2AC19/H4C6/H4- 16/POLR2L/H2AC6/H3C12/H2BU1/CCNH/H2BC21/GTF2H5/H2BC15/H3- 3A/H2AX/H2BC6/H3C4/H3C7/H2AZ1/H2BC4/POLR2K/H2BC9/H2BC7/ZNRD1/H3C1/H2AC7/H2AC20/H4C8/H4C11/H4C15/H2BC13/H2BC14/H2AC14/H2AC4/H3C15/H4C5/H2AC8/H4C4/H4C1/H4C2/H2AB1/H2BC3/H2BC10/H4C3/H3C11/H4C13/POLR2F
REACTOME_CRISTAE_FORMATION	- 1.9 033 771 05	0.0198 64398	DMAC2L/MICOS10/ATP5F1A/MTX2/APOO/ATP5PD/ATP5F1B/ATP5F1E/ATP5F1D/ATP5PB/ATP5MC3/ATP5MC2/ATP5PF/ATP5F1C/ATP5MF/MICOS13/ATP5PO/ATP5MG/ATP5ME/ATP5MC1/CHCHD6

REACTOME_SIGNALING_BY_ROBO_RECEPTORS	- 1.9 045 386 48	0.0198 64398	PSMB7/RPL6/PSMA5/SRGAP3/AKAP5/RPL23A/RPL12/RPL10/PSMD14/RPS17/RPL23/FLRT3/RPS27/PSMB5/P SMB4/RPLP0/RPS27A/RPL14/PSMB6/PAK6/PSMD8/RPL30/RPL26/LHX4/RPLP2/RPL13/PSMA6/RPL36A/RPL1 9/ELOC/PSMA7/SLIT1/RPS24/PSMD13/RPL17/PSMB1/RPL8/RPL10A/RPS23/RPL41/UBB/PPP3CB/RPL13A/RP L26L1/RPS15/RPS19/RPS25/RPS13/PSMA2/PSMD10/RPL18/RPL34/RPS6/RPL21/RPS9/RPL5/RPL37A/RPS8/R PL7A/PSMB3/RPL22L1/RPL38/RPL36/RPS29/RPL15/RPL35A/RPL29/PRKACB/RPL31/RPL27A/RPS11/RPS15A/ RPS26/RPS3/RPS14/FAU/RPS16/RPS5/RPL32/RPSA/RPS7/RPL39/RBX1/RPS10/RPS21/RPL18A/RPL35/RPS1 8/RPS4Y1/RPL27/RPL24/RPS4Y2/ELOB/RPL9/LHX3/RPS3A/CLASP2/DCC/PAK3/PFN2/PAK5
REACTOME_RHO_GTPASES_ACTIVATE_PKNS	- 1.9 113 045 42	0.0198 64398	CDC25C/H2BC21/RHOC/H2BC15/MYL6/H3- 3A/H2AX/H2BC6/H3C4/YWHAQ/H3C7/H2AZ1/H2BC4/YWHAQ/H2BC9/H2BC7/H3C1/H2AC7/H2AC20/H4C8/H4C 11/H4C15/H2BC13/H2BC14/H2AC14/H2AC4/H3C15/H4C5/H2AC8/H4C4/H4C1/H4C2/H2AB1/PPP1R14A/H2BC3/ H2BC10/H4C3/H3C11/H4C13
REACTOME_LONG_TERM_POTENTIATION	- 1.9 147 181 07	0.0198 64398	CAMK2G/GRIN2A/DLG2/GRIA2/NEFL/GRIN2B/LRRC7/NRGN/CAMK2A/GRIN1
REACTOME_NEGATIVE_EPIGENETIC_REGULATIO N_OF_RRNA_EXPRESSION	- 1.9 283 464 87	0.0198 64398	H4C12/H2BC8/H3C13/HDAC2/TAF1D/H2AC19/SAP18/H4C6/H4- 16/POLR2L/H2AC6/H3C12/H2BU1/CCNH/H2BC21/GTF2H5/H2BC15/H3- 3A/H2AX/H2BC6/H3C4/H3C7/H2AZ1/H2BC4/POLR2K/H2BC9/H2BC7/ZNRD1/H3C1/H2AC7/H2AC20/H4C8/H4C 11/H4C15/H2BC13/H2BC14/H2AC14/H2AC4/H3C15/H4C5/H2AC8/H4C4/H4C1/H4C2/H2AB1/H2BC3/H2BC10/H4 C3/H3C11/H4C13/POLR2F
KEGG_HUNTINGTONS_DISEASE	- 1.9 287 962 23	0.0198 64398	CREB3/POLR2C/ATP5MC1P5/NDUFA5/SDHC/GPX1/PLCB4/POLR2L/DLG4/VDAC2/ATP5F1A/CASP9/POLR2J/ CYCS/CLTA/SDHD/SOD1/NDUFS8/ATP5PD/DNAH2/ATP5F1B/COX4I2/SLC25A5/UQCRB/NDUFS7/ATP5F1E/U QCRC1/ATP5F1D/COX6C/NDUFB2/SDHB/VDAC3/NDUFC1/TBPL2/NDUFS5/UQCR10/POLR2K/COX5A/NDUFA 8/POLR2I/NDUFS3/NDUFA1/DNAI2/UQCRC2/ATP5PB/NDUFA6/ATP5MC3/ATP5MC2/NDUFV2/UQCRHL/NDUF B3/NDUFS4/NDUFA9/UQCRFS1/COX7A2L/COX7C/COX6B1/COX8A/ATP5PF/NDUFA7/POLR2G/NDUFA3/NDU FB10/ATP5F1C/DNAI1/NDUFB4/NDUFC2/CYC1/COX4I1/UQCRH/TBPL1/NDUFB6/NDUFB8/NDUFB1/ATP5PO/U QCRQ/NDUFAB1/COX5B/SLC25A4/NDUFB5/NDUFA2/UQCR11/COX7B/DCTN2/ATP5MC1/NDUFB7/NDUFB9/C OX7B2/COX6A1/PLCB1/GRM5/COX7A2/CREB3L3/NDUFA4/COX6A2/GRIN2B/POLR2F/GRIN1
REACTOME_HDACS_DEACETYLATE_HISTONES	- 1.9	0.0198 64398	H4C12/H2BC8/H3C13/HDAC2/H2AC19/SAP18/H4C6/H4- 16/KDM1A/H2AC6/H3C12/H2BU1/H2AC16/H2BC21/H2AC17/H2BC15/H2BC6/H3C4/H3C7/H2BC4/H2BC9/H2BC



	334 417		7/H3C1/H2AC7/H2AC20/H4C8/H4C11/H4C15/H2BC13/H2AC12/H2BC14/H2AC21/H2AC14/H2AC4/H3C15/H4C5/H2AC8/H4C4/H4C1/H4C2/H2BC3/H2AW/H2BC10/H4C3/H3C11/H4C13
REACTOME_RRNA_PROCESSING	- 1.9 348 147 31	0.0198 64398	RPP30/WDR12/EXOSC1/RPS12/HSD17B10/EBNA1BP2/RPL3/MRM3/RPS20/DDX49/RPL22/RPS2/UBA52/SEN P3/PNO1/WDR18/RPL37/RPS28/RPL1/RPL6/BOP1/MPHOSPH6/EXOSC7/RPL23A/RPL12/EXOSC8/RPL10/RP S17/TRMT10C/RPL23/RPS27/DIMT1/RPLP0/EXOSC4/RPS27A/CSNK1E/RPL14/PWP2/NOP10/RPL30/IMP3/RP L26/EMG1/RPLP2/RPL13/RPL36A/RPL19/C1D/RPS24/TRMT112/RPP21/RPL17/RPL8/RPL10A/RPS23/RPL41/S NU13/RPL13A/RPL26L1/RPS15/RPS19/RPS25/RPS13/RPL18/RPL34/RPS6/RPL21/RPS9/RPL5/RPL37A/RPS8/ RPL7A/RPL22L1/RPL38/RPL36/RPS29/RPL15/RPL35A/RPL29/EXOSC5/NHP2/RPL31/RPL27A/RPS11/RPS15A/ RPS26/RPS3/RPS14/FAU/RPS16/RPS5/RPL32/RPSA/RPS7/RPL39/RPS10/RPS21/RPL18A/RPL35/RPS18/RPS 4Y1/RPL27/RPL24/RPS4Y2/RPL9/RPS3A
REACTOME_RAS_ACTIVATION_UPON_CA2_INFLU X_THROUGH_NMDA_RECEPTOR	- 1.9 379 270 27	0.0198 64398	CAMK2G/RASGRF2/DLG2/NEFL/RASGRF1/GRIN2B/LRRC7/CAMK2A/GRIN1
REACTOME_B_WICH_COMPLEX_POSITIVELY_RE GULATES_RRNA_EXPRESSION	- 1.9 546 608 23	0.0198 64398	H2BC21/H2BC15/H3- 3A/H2AX/H2BC6/H3C4/H3C7/H2AZ1/H2BC4/POLR2K/H2BC9/H2BC7/ZNRD1/H3C1/H2AC7/H2AC20/H4C8/H4C 11/H4C15/H2BC13/H2BC14/H2AC14/H2AC4/H3C15/H4C5/H2AC8/H4C4/H4C1/H4C2/H2AB1/H2BC3/H2BC10/H4 C3/H3C11/H4C13/POLR2F
REACTOME_UNBLOCKING_OF_NMDA_RECEPTOR S_Glutamate_Binding_and_Activation	- 1.9 557 381 31	0.0198 64398	CAMK2G/GRIA4/GRIN2A/DLG2/GRIA2/NEFL/GRIN2B/LRRC7/CAMK2A/GRIN1
WP_PRADERWILLI_AND_ANGELMAN_SYNDROME	- 1.9 840 728 2	0.0198 64398	NDN/MAGEL2/CCND1/MKRN3/FEZ1/CGA/NHLH2/SNRPN/GABRD/FSHB/OCA2/GHRH/GABRB3/GABRG1/TYR/ OXT/HTR2C/DLX5/TACR3/GABRG3/PRKCZ/GABRA5/GABRG2/CDK4/KISS1
KEGG_NEUROACTIVE_LIGAND_RECEPTOR_INTE RACTION	- 1.9 864	0.0198 64398	HCRT2R/THRA/F2/GLRB/GABBR1/CGA/P2RX5/NMUR2/S1PR5/GRM3/RXFP2/GRM2/FSHR/ADRA2C/CHRN2B/ GRIN2A/P2RX7/CALCRL/OPRD1/TAAR6/GABRA4/GRIA2/GABRD/GRM5/GABRA2/FSHB/GRM4/CRHR2/PTH2R /GRIN3A/NPY5R/CCKBR/GABBR2/HTR2A/GRIK2/LPAR4/DRD1/GRM7/LPAR3/GABRB3/GABRP/NPY1R/GABR

	746 57		G1/PTGER3/SSTR5/GLP2R/HTR6/GRIN2B/HTR2C/GRID2/GABRA6/PRSS3/VIPR2/TACR3/GPR50/NTSR1/OPRM1/CHRNA4/SSTR3/CRHR1/GABRG3/SSTR4/RXFP1/CHRNA2/SSTR2/GABRB2/GABRA5/MAS1/GABRG2/TSHR/PRL/PRLHR/MC4R/CHRN3/GABRA3/CHRM2/NPBWR2/GPR83/DRD5/CHRM1/GABRA1/GRIN1/HTR5A/GLP1R/MCHR2/HRH3/HTR1E/HTR1A/SSTR1/GLRA3
REACTOME_SEROTONIN_NEUROTRANSMITTER_RELEASE_CYCLE	- 1.9 884 772 97	0.0198 64398	TSPOAP1/VAMP2/STX1A/PPFIA3/STXB1/CPLX1/RIMS1/SYN3/SYN1/RAB3A/SYT1/SYN2/SNAP25
REACTOME_BASE_EXCISION_REPAIR_AP_SITE_FORMATION	- 1.9 892 646 44	0.0198 64398	H2BU1/SMUG1/H2BC21/H2BC15/H2AX/H2BC6/TERF2IP/H2AZ1/H2BC4/H2BC9/H2BC7/H2AC7/MPG/NTHL1/H2AC20/H4C8/H4C11/H4C15/H2BC13/H2BC14/H2AC14/H2AC4/H4C5/H2AC8/H4C4/H4C1/H4C2/H2AB1/H2BC3/H2BC10/H4C3/H4C13
REACTOME_CONDENSATION_OF_PROPHASE_CHROMOSOMES	- 1.9 916 227 83	0.0198 64398	H4C12/H2BC8/H3C13/H2AC19/PLK1/CCNB1/H4C6/CDK1/H4-16/H2AC6/H3C12/H2BU1/H2BC21/H2BC15/H3-3A/H2AX/H2BC6/H3C4/H3C7/H2AZ1/H2BC4/H2BC9/H2BC7/H3C1/H2AC7/H2AC20/H4C8/H4C11/H4C15/H2BC13/H2BC14/H2AC14/H2AC4/H3C15/H4C5/H2AC8/H4C4/H4C1/H4C2/H2AB1/H2BC3/H2BC10/H4C3/H3C11/H4C13
REACTOME_GABA_RECEPTOR_ACTIVATION	- 1.9 994 715 98	0.0198 64398	ADCY2/GABRQ/GABBR1/GNG2/GNAI1/GABRA4/GABRA2/KCNJ16/GNAL/GABBR2/GNG4/GNG8/KCNJ12/GABRB3/KCNJ3/ADCY5/GNG13/GABRA6/GABRG3/GNG3/GABRB2/GABRA5/GABRG2/GABRA3/KCNJ9/GABRA1
REACTOME_RMTS METHYLATE HISTONE ARGININES	- 2.0 015 943 94	0.0198 64398	COPRS/H4C12/SMARCE1/H3C13/H2AC19/RPS2/H4C6/H4-16/PRMT3/H2AC6/H3C12/SMARCB1/H2AC16/ACTL6A/SMARCD3/H2AC17/H2AX/H3C4/H3C7/PRMT1/H2AZ1/H3C1/H2AC7/H2AC20/CCND1/H4C8/H4C11/H4C15/H2AC12/H2AC21/H2AC14/H2AC4/H3C15/H4C5/H2AC8/H4C4/H4C1/H4C2/H2AB1/H2AW/H4C3/H3C11/ACTL6B/H4C13/CDK4
REACTOME_PROTEIN_PROTEIN_INTERACTIONS_AT_SYNAPSES	- 2.0 243	0.0198 64398	APBA1/SLITRK6/APBA2/PTPRD/SLITRK5/PPFIA4/SLITRK2/NRXN2/RTN3/IL1RAPL2/GRIA4/LRRTM3/SYT2/STX1A/SYT7/PPFIA3/NRXN1/DLGAP1/LIN7B/GRIN2A/DLG2/SYT9/GRM5/STXB1/SHANK1/LRFN2/DLGAP2/DLGAP3/IL1RAPL1/SHANK2/LRRTM4/GRIN2B/SLITRK4/LRRTM1/SLITRK1/SYT1/SYT10/GRIN1

	492 51		
REACTOME_GABA_SYNTHESIS_RELEASE_REUPTAKE_AND_DEGRADATION	- 2.0 260 765 37	0.0198 64398	VAMP2/STX1A/GAD1/SLC6A13/STXBP1/GAD2/CPLX1/SLC32A1/RIMS1/RAB3A/SYT1/SNAP25
REACTOME_RECOGNITION_AND_ASSOCIATION_OF_DNA_GLYCOSYLASE_WITH_SITE_CONTAINING_AN_AFFECTED_PURINE	- 2.0 328 677 22	0.0198 64398	H2BC21/H2BC15/H2AX/H2BC6/TERF2IP/H2AZ1/H2BC4/H2BC9/H2BC7/H2AC7/MPG/H2AC20/H4C8/H4C11/H4C15/H2BC13/H2BC14/H2AC14/H2AC4/H4C5/H2AC8/H4C4/H4C1/H4C2/H2AB1/H2BC3/H2BC10/H4C3/H4C13
REACTOME_INHIBITION_OF_DNA_RECOMBINATION_AT_TELOMERE	- 2.0 396 026 14	0.0198 64398	H2AC19/POLR2C/H4C6/H4-16/POLR2L/POLR2J/H2AC6/H2BU1/H2BC21/H2BC15/H3-3A/H2AX/H2BC6/TERF2IP/H2AZ1/H2BC4/POLR2K/POLR2I/H2BC9/H2BC7/H2AC7/POLR2G/H2AC20/H4C8/H4C11/H4C15/H2BC13/H2BC14/H2AC14/H2AC4/H4C5/H2AC8/H4C4/H4C1/H4C2/H2AB1/H2BC3/H2BC10/H4C3/H4C13/POLR2F
REACTOME_DEPOSITION_OF_NEW_CENPA_CONTAINING_NUCLEOSOMES_AT_THE_CENTROMERE	- 2.0 467 175 85	0.0198 64398	CENPL/RUVBL1/RBBP4/CENPA/CENPS/H4C12/H2BC8/CENPK/OIP5/H2AC19/CENPW/CENPU/H4C6/H4-16/CENPM/H2AC6/H2BU1/H2BC21/ITGB3BP/H2BC15/H2AX/H2BC6/CENPH/H2AZ1/H2BC4/CENPQ/H2BC9/H2BC7/H2AC7/CENPX/H2AC20/H4C8/H4C11/H4C15/H2BC13/H2BC14/H2AC14/H2AC4/H4C5/H2AC8/H4C4/H4C1/H4C2/H2AB1/H2BC3/H2BC10/H4C3/H4C13
WP_MITOCHONDRIAL_CIV_ASSEMBLY	- 2.0 471 735 84	0.0198 64398	COX11/TACO1/TMEM177/PNKD/COX18/COA6/COX16/COX6C/SMIM20/COX5A/SURF1/COX17/COX7C/COX6B1/COX8A/COX14/CMC1/COX4I1/PET100/COA3/COX5B/COX7B/HIGD1A/COX6A1/COX7A2/NDUFA4
REACTOME_PRC2_METHYLATES_HISTONES_AND_DNA	- 2.0 645 959 6	0.0198 64398	H2BC21/H2BC15/H3-3A/H2AX/H2BC6/H3C4/H3C7/H2AZ1/H2BC4/H2BC9/H2BC7/H3C1/H2AC7/H2AC20/H4C8/H4C11/H4C15/H2BC13/H2BC14/H2AC14/H2AC4/H3C15/H4C5/H2AC8/H4C4/H4C1/H4C2/H2AB1/H2BC3/H2BC10/H4C3/H3C11/H4C13

REACTOME_DOPAMINE_NEUROTRANSMITTER_RELEASE_CYCLE	- 2.0 701 945 67	0.0198 64398	TSPOAP1/VAMP2/STX1A/PPFIA3/LIN7B/STXBP1/CPLX1/RIMS1/SYN3/SYN1/RAB3A/SYT1/SYN2/SNAP25
REACTOME_NEUROTRANSMITTER_RECEPTORS_AND_POSTSYNAPTIC_SIGNAL_TRANSMISSION	- 2.0 711 027 57	0.0198 64398	TUBAL3/CHRNA3/GRIK4/KCNJ10/PRKCB/TUBB3/TUBA3C/GNG7/GRIP1/KCNJ4/ARHGEF9/CACNG8/KIF17/GRIP2/PRKAR1B/PPM1E/PRKACB/CAMK2G/GRIA4/ADCY2/MAPT/GABRQ/RASGRF2/TSPAN7/GLRB/GABBR1/CAMKK1/GNG2/LIN7B/NCALD/CHRN2/CACNG4/TUBA8/GNAI1/GRIN2A/DLG2/GABRA4/PLCB1/GRIA2/GABRA2/KCNJ16/GRIN3A/GNAL/GABBR2/GRIK2/TUBA1A/GNG4/GNG8/KCNJ12/NEFL/GABRB3/KCNJ3/ADCY5/RASGRF1/GNG13/GRIN2B/GABRA6/LRRC7/NRGN/CHRNA4/GABRG3/GNG3/CHRNA2/CAMK2A/GABRB2/CACNG2/GABRA5/GABRG2/CHRN2B3/GABRA3/PRKCG/KCNJ9/TUBB4A/GABRA1/CACNG3/GRIN1/HTR3B/GLRA3
REACTOME_GLUTAMATE_NEUROTRANSMITTER_RELEASE_CYCLE	- 2.0 789 742 38	0.0198 64398	TSPOAP1/VAMP2/STX1A/PPFIA3/GLS2/STXBP1/CPLX1/RIMS1/SLC1A1/RAB3A/SLC1A6/SYT1/SNAP25/SLC17A7
KEGG_CARDIAC_MUSCLE_CONTRACTION	- 2.0 828 255 49	0.0198 64398	MYH7/TNNI3/CACNB4/COX4I2/UQCRB/MYH6/UQCRC1/ATP1A4/COX6C/UQCR10/COX5A/UQCRC2/MYL3/UQCRHL/UQCRFS1/CACNG8/COX7A2L/COX7C/COX6B1/COX8A/CACNG7/ATP1B1/CYC1/COX4I1/UQCRH/ACTC1/UQCRQ/COX5B/TNNC1/UQCR11/COX7B/CACNG4/COX7B2/COX6A1/COX7A2/CACNA2D2/CACNA2D3/FXYD2/COX6A2/CACNG1/CACNG2/ATP1A3/RYR2/CACNG3/TNNT2/MYL2
REACTOME_ERCC6_CSB_AND_EHMT2_G9A_POSITIVELY_REGULATE_RRNA_EXPRESSION	- 2.0 840 346 51	0.0198 64398	H2BC21/H2BC15/H3-3A/H2AX/H2BC6/H3C4/H3C7/H2AZ1/H2BC4/H2BC9/H2BC7/H3C1/H2AC7/H2AC20/H4C8/H4C11/H4C15/H2BC13/H2BC14/H2AC14/H2AC4/H3C15/H4C5/H2AC8/H4C4/H4C1/H4C2/H2AB1/H2BC3/H2BC10/H4C3/H3C11/H4C13
REACTOME_NEUROTRANSMITTER_RELEASE_CYCLE	- 2.0 846 965 31	0.0198 64398	APBA1/SLC5A7/SLC22A2/PPFIA4/ABAT/SLC18A3/TSPOAP1/VAMP2/STX1A/PPFIA3/GAD1/SLC6A13/GLS2/LIN7B/STXBP1/GAD2/CPLX1/SLC32A1/RIMS1/SLC1A1/SYN3/SYN1/RAB3A/SLC1A6/SYT1/SYN2/SNAP25/SLC17A7
WP_MITOCHONDRIAL_COMPLEX_I_ASSEMBLY_MODEL_OXPHOS_SYSTEM	- 2.0	0.0198 64398	TMEM186/COA1/NDUFAF3/NDUFA5/NDUFAF4/NDUFAF6/TIMMDC1/NDUFB2/NDUFC1/NDUFS5/NDUFB11/NDUFA8/NDUFS3/NDUFA1/ECSIT/NDUFA6/NDUFV2/NDUFB3/NDUFS4/TMEM126B/NDUFA7/NDUFA3/NDUFB10/

	998 764 51		NDUFA12/NDUFAF2/NDUFB4/NDUFC2/DMAC1/NDUFB6/NDUFB8/NDUFB1/NDUFA13/NDUFAB1/NDUFB5/NDUFA2/NDUFB7/NDUFB9
REACTOME_MITOCHONDRIAL_TRANSLATION	- 2.1 055 796 65	0.0198 64398	MRPS2/MRPL9/MRPS27/MRPL4/MRPS16/MRPS31/MRPL23/MRPS10/MRPL2/GFM2/MRPS9/MRPL17/MTIF3/MRPL30/MRPS18B/TUFM/MRPL18/MRPL39/MRPL16/MRPS18C/MRPL10/MRPL55/MRPL36/MRPL20/MRPS14/MRPS18A/AURKAIP1/MRPL50/MRPL42/MRPL57/MRPL15/MRPL41/MRPL46/MRPL1/MRPL28/MRPS22/MRPL49/MRPS12/MRPL44/MRPL47/MRPL45/MRPS11/MRPS35/MRPS34/MRPL24/MRPL51/MRPL11/MRPS21/MRPS26/MRPS15/MRPL22/MRPS33/MRPL27/MRPL34/CHCHD1/MRPL21/MRPL12/MRPL14/MRPL33/MRPL58/GADD45GIP1/MRPS36/MRPL52/MRPS23/MRPL40/MRPL13/MRPS7/MRPL43/MRPL48/MRPL54/MRPS17/MRPS28/TSF M
REACTOME_RNA_POLYMERASE_I_PROMOTER_ESCAPE	- 2.1 062 227 65	0.0198 64398	H4C12/H2BC8/H3C13/TAF1D/H2AC19/H4C6/H4-16/POLR2L/H2AC6/H3C12/H2BU1/CCNH/H2BC21/GTF2H5/H2BC15/H3-3A/H2AX/H2BC6/H3C4/H3C7/H2AZ1/H2BC4/POLR2K/H2BC9/H2BC7/ZNRD1/H3C1/H2AC7/H2AC20/H4C8/H4C11/H4C15/H2BC13/H2BC14/H2AC14/H2AC4/H3C15/H4C5/H2AC8/H4C4/H4C1/H4C2/H2AB1/H2BC3/H2BC10/H4C3/H3C11/H4C13/POLR2F
REACTOME_ACTIVATED_PKN1_STIMULATES_TRANSCRIPTION_OF_AR_ANDROGEN_RECEPTOR REGULATED_GENES_KLK2_AND_KLK3	- 2.1 084 194 95	0.0198 64398	H4C12/H2BC8/H3C13/H2AC19/H4C6/H4-16/KDM1A/H2AC6/H3C12/H2BU1/H2BC21/H2BC15/H3-3A/H2AX/H2BC6/H3C4/H3C7/H2AZ1/H2BC4/H2BC9/H2BC7/H3C1/H2AC7/H2AC20/H4C8/H4C11/H4C15/H2BC13/H2BC14/H2AC14/H2AC4/H3C15/H4C5/H2AC8/H4C4/H4C1/H4C2/H2AB1/H2BC3/H2BC10/H4C3/H3C11/H4C13
REACTOME_NEUREXINS_AND_NEUROLIGINS	- 2.1 157 705 49	0.0198 64398	LRRTM3/SYT2/STX1A/SYT7/NRXN1/DLGAP1/LIN7B/GRIN2A/DLG2/SYT9/GRM5/STXBP1/SHANK1/DLGAP2/DLGAP3/SHANK2/LRRTM4/GRIN2B/LRRTM1/SYT1/SYT10/GRIN1
REACTOME_REGULATION_OF_EXPRESSION_OF_SLITS_AND_ROBOS	- 2.1 246 072 24	0.0198 64398	MAGOHB/RPS20/RPL22/RPS2/UBA52/RPL37/RPS28/PSMC6/RPLP1/PSMB7/RPL6/PSMA5/RPL23A/RPL12/RPL10/PSMD14/RPS17/RPL23/RPS27/PSMB5/PSMB4/RPLP0/RPS27A/RPL14/PSMB6/PSMD8/RPL30/RPL26/LHX4/RPLP2/RPL13/PSMA6/RPL36A/RPL19/ELOC/PSMA7/SLIT1/RPS24/PSMD13/RPL17/PSMB1/RPL8/RPL10A/RPS23/RPL41/UBB/RPL13A/RPL26L1/RPS15/RPS19/RPS25/RPS13/PSMA2/PSMD10/RPL18/RPL34/RPS6/RPL21/RPS9/RPL5/RPL37A/RPS8/RPL7A/PSMB3/RPL22L1/RPL38/RPL36/RPS29/RPL15/RPL35A/RPL29/RPL31/RPL27A/RPS11/RPS15A/RPS26/RPS3/RPS14/FAU/RPS16/RPS5/RPL32/RPSA/RPS7/RPL39/RBX1/RPS10/RPS21/RPL18A/RPL35/RPS18/RPS4Y1/RPL27/RPL24/RPS4Y2/ELOB/RPL9/LHX3/RPS3A

REACTOME_DNA_METHYLATION	- 2.1 248 346 04	0.0198 64398	H2BC21/H2BC15/H3- 3A/H2AX/H2BC6/H3C4/H3C7/H2AZ1/H2BC4/H2BC9/H2BC7/H3C1/H2AC7/H2AC20/H4C8/H4C11/H4C15/H2BC1 3/H2BC14/H2AC14/H2AC4/H3C15/H4C5/H2AC8/H4C4/H4C1/H4C2/H2AB1/H2BC3/H2BC10/H4C3/H3C11/H4C13
REACTOME_POTASSIUM_CHANNELS	- 2.1 310 205 43	0.0198 64398	KCNK7/KCNN3/KCNJ10/KCNK2/GNG7/KCNH4/KCNG4/KCNC1/KCNJ4/ABCC8/KCNK4/KCNA2/GABBR1/HCN2/ KCNN2/KCNQ2/KCNA1/KCNQ5/GNG2/KCNMB4/KCNH3/KCNH7/KCNK9/KCNJ16/KCNAB1/KCNK3/KCNJ11/GA BBR2/KCNS3/GNG4/GNG8/KCNJ12/KCND2/KCNJ3/KCNS1/KCNG3/KCNB1/KCNN1/KCNA4/KCNV1/GNG13/KC NK1/KCNMB2/GNG3/KCNH8/KCNS2/KCNH5/KCNB2/KCNC2/HCN1/KCNA5/KCNJ9
REACTOME_TRANSLATION	- 2.1 381 263 85	0.0198 64398	GFM2/N6AMT1/MRPS9/SARS1/MRPL17/MTIF3/EEF1G/EEF1D/MRPL30/MRPS18B/RPS12/RPL3/SRP14/TUFM/ RPS20/EIF3H/MRPL18/MRPL39/MRPL16/RPL22/SEC61B/RPS2/UBA52/MRPS18C/SSR2/MRPL10/EIF3K/MRPL 55/RPL37/RPS28/EIF2B3/EIF4E/EIF3E/MRPL36/RPLP1/MRPL20/MRPS14/EIF3I/EEF1A1/MRPS18A/RPL6/AUR KAIP1/RPL23A/RPL12/RPL10/MRPL50/RPS17/MRPL42/MRPL57/SRPRB/SPCS1/RPL23/MRPL15/RPS27/MRPL 41/RPLP0/RPS27A/RPL14/EEF1E1/MRPL46/SSR4/MRPL1/MRPL28/MRPS22/EIF4A2/RPL30/RPL26/RPLP2/RP L13/RPL36A/RPL19/MRPL49/RPS24/MRPS12/TRMT112/MRPL44/RPL17/MARS1/MRPL47/MRPL45/RPL8/MRP S11/MRPS35/MRPS34/MRPL24/RPL10A/RPS23/NARS2/RPL41/MRPL51/MRPL11/MRPS21/RPL13A/PPA2/SRP 9/RPL26L1/RPS15/RPS19/PPA1/RPS25/MRPS26/RPS13/RPL18/RPL34/RPS6/MRPS15/RPL21/MRPL22/MRPS3 3/MRPL27/MRPL34/CHCHD1/SEC61G/RPS9/MRPL21/RPL5/RPL37A/RPS8/RPL7A/MRPL12/RPL22L1/MRPL14/ RPL38/EEF1B2/RPL36/MRPL33/MRPL58/GADD45GIP1/RPS29/RPL15/MRPS36/RPL35A/RPL29/RPL31/MRPL5 2/RPL27A/RPS11/MRPS23/RPS15A/MRPL40/RPS26/RPS3/MRPL13/RPS14/FAU/MRPS7/RPS16/MRPL43/RPS5 /SEC11C/RPL32/RPSA/SEC61A2/RPS7/RPL39/RPS10/RPS21/RPL18A/RPL35/RPS18/RPS4Y1/MRPL48/RPL27/ RPL24/RPS4Y2/MRPL54/MRPS17/MRPS28/RPL9/RPS3A/EEF1A2/TFSM
REACTOME_VOLTAGE_GATED_POTASSIUM_CHANNELS	- 2.1 464 690 01	0.0198 64398	KCNH4/KCNG4/KCNC1/KCNA2/KCNQ2/KCNA1/KCNQ5/KCNH3/KCNH7/KCNAB1/KCNS3/KCND2/KCNS1/KCN G3/KCNB1/KCNA4/KCNV1/KCNH8/KCNS2/KCNH5/KCNB2/KCNC2/KCNA5
REACTOME_COMPLEX_I_BIOGENESIS	- 2.1 687 893 9	0.0198 64398	NDUF3F3/NDUFA5/NDUF3F4/NDUF3F6/TIMMDC1/NDUFS8/NDUFS7/NDUFB2/NDUFC1/NDUFS5/NDUFB11/N DUFA8/NDUFS3/NDUFA1/ECSIT/NDUFA6/NDUFV2/NDUFB3/NDUFS4/NDUFA9/TMEM126B/NDUFA7/NDUFA3/ NDUFB10/NDUFA12/NDUF3F2/NDUFB4/NDUFC2/NDUFB6/NDUF3F5/NDUFB8/NDUFB1/NDUFA13/NDUF3F1/ NDUFB5/NDUFA2/NDUFA11/NDUFB7/NDUFB9

REACTOME_SIRT1_NEGATIVELY_REGULATES_RNA_EXPRESSION	- 2.1 750 037 22	0.0198 64398	H4C12/H2BC8/H3C13/TAF1D/H2AC19/H4C6/H4-16/H2AC6/H3C12/H2BU1/H2BC21/H2BC15/H3-3A/H2AX/H2BC6/H3C4/H3C7/H2AZ1/H2BC4/H2BC9/H2BC7/H3C1/H2AC7/H2AC20/H4C8/H4C11/H4C15/H2BC13/H2BC14/H2AC14/H2AC4/H3C15/H4C5/H2AC8/H4C4/H4C1/H4C2/H2AB1/H2BC3/H2BC10/H4C3/H3C11/H4C13
REACTOME_NONSENSE_MEDIATED_DECAY_NMD	- 2.1 934 774 58	0.0198 64398	MAGOHB/RPS20/RPL22/RPS2/UBA52/PPP2CA/RPL37/RPS28/RPLP1/RPL6/RPL23A/RPL12/RPL10/RPS17/RPL23/RPS27/RPLP0/RPS27A/RPL14/PPP2R2A/RPL30/RPL26/RPLP2/RPL13/RPL36A/RPL19/RPS24/RPL17/RPL8/RPL10A/RPS23/RPL41/RPL13A/RPL26L1/RPS15/RPS19/RPS25/RPS13/RPL18/RPL34/RPS6/RPL21/RPS9/RPL5/RPL37A/RPS8/RPL7A/RPL22L1/RPL38/RPL36/RPS29/RPL15/RPL35A/RPL29/RPL31/RPL27A/RPS11/RPS15A/RPS26/RPS3/RPS14/FAU/RPS16/RPS5/RPL32/RPSA/RPS7/RPL39/RPS10/RPS21/RPL18A/RPL35/RPS18/RPS4Y1/RPL27/RPL24/RPS4Y2/RPL9/RPS3A
REACTOME_EUKARYOTIC_TRANSLATION_INITIATION	- 2.1 952 590 2	0.0198 64398	RPS20/EIF3H/RPL22/RPS2/UBA52/EIF3K/RPL37/RPS28/EIF2B3/EIF4E/EIF3E/RPLP1/EIF3I/RPL6/RPL23A/RPL12/RPL10/RPS17/RPL23/RPS27/RPLP0/RPS27A/RPL14/EIF4A2/RPL30/RPL26/RPLP2/RPL13/RPL36A/RPL19/RPS24/RPL17/RPL8/RPL10A/RPS23/RPL41/RPL13A/RPL26L1/RPS15/RPS19/RPS25/RPS13/RPL18/RPL34/RPS6/RPL21/RPS9/RPL5/RPL37A/RPS8/RPL7A/RPL22L1/RPL38/RPL36/RPS29/RPL15/RPL35A/RPL29/RPL31/RPL27A/RPS11/RPS15A/RPS26/RPS3/RPS14/FAU/RPS16/RPS5/RPL32/RPSA/RPS7/RPL39/RPS10/RPS21/RPL18A/RPL35/RPS18/RPS4Y1/RPL27/RPL24/RPS4Y2/RPL9/RPS3A
REACTOME_THE_CITRIC_ACID_TCA_CYCLE_AND_RESPIRATORY_ELECTRON_TRANSPORT	- 2.2 012 609 01	0.0198 64398	DMAC2L/TRAP1/NDUFAF3/GSTZ1/NDUFA5/SDHC/SLC25A14/NDUFAF4/ATP5F1A/SUCLA2/COX11/GLO1/PDHB/CYCS/ME3/ETFA/TACO1/NDUFAF6/SDHD/TIMMDC1/NDUFS8/ATP5PD/ATP5F1B/UQCRB/NDUFS7/COX18/ATP5F1E/SLC16A8/COX16/UQCRC1/ATP5F1D/COX6C/NDUFB2/SDHB/MPC2/NDUFC1/NDUFS5/UQCR10/COX5A/NDUFB11/SURF1/NDUFA8/PM20D1/ADHFE1/NDUFS3/NDUFA1/LDHB/UQCRC2/ECSIT/ATP5PB/NDUFA6/ATP5MC3/ATP5MC2/NDUFV2/NDUFB3/HAGH/NDUFS4/NDUFA9/UQCRFS1/TMEM126B/COX7A2L/COX7C/COX6B1/COX8A/ATP5PF/COX14/NDUFA7/NDUFA3/NDUFB10/NDUFA12/ATP5F1C/NDUFAF2/NDUFB4/ATP5MF/ME1/NDUFC2/CYC1/SUCLG1/COX4I1/UQCRH/MPC1/NDUFB6/NDUFAF5/NDUFB8/NDUFB1/NDUFA13/ATP5PO/UQCRQ/SLC25A27/ATP5MG/NDUFAB1/COX5B/ATP5ME/NDUFB5/NDUFA2/UQCR11/COX7B/ATP5MC1/NDUFA11/NDUFB7/NDUFB9/COX6A1/NDUFA4
WP_OXIDATIVE_PHOSPHORYLATION	- 2.2 205 213 7	0.0198 64398	NDUFS8/ATP5PD/ATP5F1B/NDUFS7/ATP5F1E/ATP5F1D/NDUFB2/NDUFC1/NDUFS5/NDUFA8/NDUFS3/ATP5PB/NDUFA6/ATP5MC3/ATP5MC2/NDUFV2/NDUFS4/NDUFA9/ATP5PF/NDUFA7/NDUFA3/NDUFB10/NDUFB4/ATP5MF/NDUFC2/NDUFB6/NDUFB8/NDUFB1/ATP5PO/ATP5MG/NDUFAB1/ATP5ME/NDUFB5/NDUFA2/ATP5MC1/NDUFA11/NDUFB7/NDUFB9/NDUFA4
REACTOME_SELENOAMINO_ACID_METABOLISM	- 2.2	0.0198 64398	RPS20/RPL22/RPS2/UBA52/AHCY/RPL37/RPS28/RPLP1/RPL6/PAPSS1/RPL23A/RPL12/GNMT/RPL10/RPS17/RPL23/RPS27/RPLP0/RPS27A/RPL14/EEF1E1/RPL30/RPL26/RPLP2/RPL13/HNMT/RPL36A/RPL19/RPS24/RPL

	227 296 87		17/MARS1/RPL8/RPL10A/RPS23/RPL41/RPL13A/RPL26L1/RPS15/RPS19/RPS25/RPS13/RPL18/RPL34/RPS6/RPL21/RPS9/RPL5/RPL37A/RPS8/RPL7A/RPL22L1/RPL38/RPL36/RPS29/RPL15/RPL35A/RPL29/RPL31/RPL27A/RPS11/RPS15A/RPS26/RPS3/RPS14/FAU/RPS16/RPS5/RPL32/RPSA/PSTK/RPS7/RPL39/RPS10/RPS21/RPL18A/RPL35/RPS18/RPS4Y1/RPL27/RPL24/RPS4Y2/RPL9/RPS3A/INMT
REACTOME_RESPONSE_OF_EIF2AK4_GCN2_TO_AMINO_ACID_DEFICIENCY	- 2.2 361 725 06	0.0198 64398	RPS20/RPL22/RPS2/UBA52/ATF4/RPL37/RPS28/RPLP1/RPL6/RPL23A/RPL12/RPL10/RPS17/RPL23/RPS27/RPLP0/RPS27A/RPL14/RPL30/RPL26/RPLP2/RPL13/TRIB3/RPL36A/RPL19/RPS24/RPL17/RPL8/RPL10A/RPS23/RPL41/RPL13A/RPL26L1/RPS15/RPS19/RPS25/RPS13/RPL18/RPL34/RPS6/RPL21/RPS9/RPL5/RPL37A/RPS8/RPL7A/RPL22L1/RPL38/RPL36/RPS29/RPL15/RPL35A/RPL29/RPL31/RPL27A/RPS11/RPS15A/RPS26/RPS3/RPS14/FAU/RPS16/RPS5/RPL32/RPSA/RPS7/RPL39/RPS10/RPS21/RPL18A/DDIT3/RPL35/RPS18/RPS4Y1/RPL27/RPL24/RPS4Y2/RPL9/RPS3A
REACTOME_TRANSMISSION_ACROSS_CHEMICAL_SYNAPSES	- 2.2 454 926 56	0.0198 64398	TUBAL3/CHRNA3/PPFIA4/GRIK4/KCNJ10/PRKCB/LRTOMT/TUBB3/SLC6A3/TUBA3C/GNG7/ABAT/GRIP1/KCNJ4/ARHGEF9/SLC18A3/CACNG8/KIF17/CACNA1A/GRIP2/TSPOAP1/PRKAR1B/PPM1E/PRKACB/SLC38A1/CAMK2G/GRIA4/ADCY2/VAMP2/MAPT/GABRQ/RASGRF2/STX1A/PPFIA3/TSPAN7/GLRB/GABBR1/CAMKK1/GAD1/SLC6A13/GLS2/GNG2/LIN7B/NCALD/CHRN2/CACNG4/TUBA8/GNAI1/BCHE/GRIN2A/DLG2/GABRA4/PLCB1/GRIA2/GABRA2/KCNJ16/STXBP1/GRIN3A/CACNA2D2/GNAL/GABBR2/GRIK2/CACNA2D3/TUBA1A/GNG4/GNG8/KCNJ12/NEFL/GABRB3/KCNJ3/GAD2/CPLX1/CACNA1E/SLC32A1/ADCY5/RIMS1/RASGRF1/SLC1A1/GNG13/GRIN2B/GABRA6/LRRC7/NRGN/CHRNA4/GABRG3/SYN3/GNG3/CHRNA2/CAMK2A/GABRB2/CACNG2/SYN1/GABRA5/GABRG2/RAB3A/SLC1A6/SYT1/SYN2/CHRN3/CACNA1B/GABRA3/PRKCG/SNAP25/SLC17A7/KCNJ9/TUBB4A/GABRA1/CACNG3/GRIN1/HTR3B/GLRA3
REACTOME_SRP_DEPENDENT_COTRANSLATIONAL_PROTEIN_TARGETING_TO_MEMBRANE	- 2.2 838 136 52	0.0198 64398	RPS20/RPL22/SEC61B/RPS2/UBA52/SSR2/RPL37/RPS28/RPLP1/RPL6/RPL23A/RPL12/RPL10/RPS17/SRPRB/SPCS1/RPL23/RPS27/RPLP0/RPS27A/RPL14/SSR4/RPL30/RPL26/RPLP2/RPL13/RPL36A/RPL19/RPS24/RPL17/RPL8/RPL10A/RPS23/RPL41/RPL13A/SRP9/RPL26L1/RPS15/RPS19/RPS25/RPS13/RPL18/RPL34/RPS6/RPL21/SEC61G/RPS9/RPL5/RPL37A/RPS8/RPL7A/RPL22L1/RPL38/RPL36/RPS29/RPL15/RPL35A/RPL29/RPL31/RPL27A/RPS11/RPS15A/RPS26/RPS3/RPS14/FAU/RPS16/RPS5/SEC11C/RPL32/RPSA/SEC61A2/RPS7/RPL39/RPS10/RPS21/RPL18A/RPL35/RPS18/RPS4Y1/RPL27/RPL24/RPS4Y2/RPL9/RPS3A
WP_CYTOPLASMIC_RIBOSOMAL_PROTEINS	- 2.3 074 937 74	0.0198 64398	RPS20/RPL22/RPS2/UBA52/RPL37/RPS28/RPLP1/RPL6/RPL23A/RPL12/RPL10/RPS17/RPL23/RPS27/RPLP0/RPS27A/RPL14/RPL30/RPL26/RPLP2/RPL13/RPL36A/RPL19/RPS24/RPL17/RPL8/RPL10A/RPS23/RPL41/RPL13A/RPS15/RPS19/RPS25/RPS13/RPL18/RPL34/RPS6/RPL21/RPS9/RPL5/RPL37A/RPS8/RPL7A/RPL38/RPL36/RPS29/RPL15/RPL35A/RPL29/RPL31/RPL27A/RPS11/RPS15A/RPS26/RPS3/RPS14/FAU/RPS16/RPS5/RPL32/RPSA/RPS7/RPL39/RPS10/RPS21/RPL18A/RPL35/RPS18/RPS4Y1/RPL27/RPL24/RPL9/RPS3A
WP_GABA_RECEPTOR_SIGNALING	- 2.3 089	0.0198 64398	GABRQ/GABBR1/GAD1/GABRA4/GABRD/GABRA2/GABBR2/GABRB3/GABRP/GAD2/GABRG1/SLC32A1/GABRA6/GABRG3/GABRB2/GABRA5/GABRG2/GABRA3/GABRA1



	111 71		
REACTOME_NEURONAL_SYSTEM	- 2.3 495 643 53	0.0198 64398	PTPRD/TUBA4A/KCNK7/SLITRK5/TUBAL3/CHRNA3/KCNN3/PPFIA4/GRIK4/KCNJ10/PRKCB/LRTOMT/TUBB3/SLC6A3/SLITRK2/KCNK2/TUBA3C/GNG7/KCNH4/ABAT/NRXN2/KCNG4/GRIP1/RTN3/KCNC1/KCNJ4/ARHGEF9/IL1RAPL2/SLC18A3/CACNG8/KIF17/CACNA1A/GRIP2/ABCC8/TSPOAP1/PRKAR1B/PPM1E/PRKACB/SLC38A1/CAMK2G/KCNK4/GRIA4/LRRTM3/ADCY2/SYT2/VAMP2/KCNA2/MAPT/GABRQ/RASGRF2/STX1A/SYT7/PPFIA3/TSPAN7/NRXN1/GLRB/GABBR1/HCN2/CAMKK1/GAD1/KCNN2/KCNQ2/SLC6A13/KCNA1/GLS2/DLGAP1/KCNQ5/GNG2/LIN7B/NCALD/CHRN2/CACNG4/TUBA8/GNAI1/BCHE/GRIN2A/KCNMB4/KCNH3/DLG2/KCNH7/GABRA4/PLCB1/GRIA2/KCNK9/SYT9/GRM5/GABRA2/KCNJ16/STXBP1/KCNAB1/GRIN3A/CACNA2D2/GNAL/KCNK3/KCNJ11/GABBR2/KCNS3/GRIK2/CACNA2D3/SHANK1/TUBA1A/GNG4/GNG8/KCNJ12/KCND2/NEFL/GABRB3/KCNJ3/KCNS1/GAD2/CPLX1/LRFN2/CACNA1E/DLGAP2/KCNG3/KCNB1/SLC32A1/KCNN1/DLGAP3/ADCY5/RIMS1/RASGRF1/KCNA4/IL1RAPL1/SHANK2/LRRTM4/KCNV1/SLC1A1/GNG13/GRIN2B/GABRA6/KCNK1/SLITRK4/LRRC7/KCNMB2/LRRTM1/NRGN/CHRNA4/GABRG3/SYN3/GNG3/CHRNA2/CAMK2A/GABRB2/SLITRK1/CACNG2/SYN1/GJD2/KCNH8/GABRA5/GABRG2/RAB3A/SLC1A6/SYT1/KCNS2/KCNH5/SYN2/CHRN3/CACNA1B/GABRA3/KCNB2/KCNC2/PRKCG/SNAP25/HCN1/KCNA5/SLC17A7/KCNJ9/SYT10/TUBB4A/GABRA1/CACNG3/GRIN1/HTR3B/GLRA3
WP_SYNAPTIC_VESICLE_PATHWAY	- 2.3 528 697 74	0.0198 64398	SLC18A3/CACNA1A/SLC38A1/VAMP2/UNC13A/STX1A/SLC25A4/SLC18A1/STXBP1/DNM3/CPLX1/STX1B/SLC32A1/RIMS1/SYP/SYN3/SYN1/RAB3A/SYT1/CPLX2/SLC17A6/SYN2/CACNA1B/SLC17A8/SNAP25/UNC13C/SLC17A7
REACTOME_EUKARYOTIC_TRANSLATION_ELONGATION	- 2.3 568 544 76	0.0198 64398	EEF1G/EEF1D/RPS12/RPL3/RPS20/RPL22/RPS2/UBA52/RPL37/RPS28/RPLP1/EEF1A1/RPL6/RPL23A/RPL12/RPL10/RPS17/RPL23/RPS27/RPLP0/RPS27A/RPL14/RPL30/RPL26/RPLP2/RPL13/RPL36A/RPL19/RPS24/RPL17/RPL8/RPL10A/RPS23/RPL41/RPL13A/RPL26L1/RPS15/RPS19/RPS25/RPS13/RPL18/RPL34/RPS6/RPL21/RPS9/RPL5/RPL37A/RPS8/RPL7A/RPL22L1/RPL38/EEF1B2/RPL36/RPS29/RPL15/RPL35A/RPL29/RPL31/RPL27A/RPS11/RPS15A/RPS26/RPS3/RPS14/FAU/RPS16/RPS5/RPL32/RPSA/RPS7/RPL39/RPS10/RPS21/RPL18A/RPL35/RPS18/RPS4Y1/RPL27/RPL24/RPS4Y2/RPL9/RPS3A/EEF1A2
KEGG_PARKINSONS_DISEASE	- 2.3 638 043 2	0.0198 64398	NDUFS8/ATP5PD/ATP5F1B/COX4I2/SLC25A5/UQCRB/NDUFS7/ATP5F1E/SEPTIN5/UQCRC1/ATP5F1D/COX6C/NDUFB2/SDHB/VDAC3/UBB/NDUFC1/PARK7/SLC6A3/NDUFS5/UQCR10/COX5A/NDUFA8/NDUFS3/NDUFA1/UQCRC2/ATP5PB/NDUFA6/ATP5MC3/ATP5MC2/NDUFV2/UQCRHL/LRRK2/NDUFB3/NDUFS4/NDUFA9/UQCRFS1/COX7A2L/COX7C/COX6B1/COX8A/ATP5PF/NDUFA7/NDUFA3/NDUFB10/ATP5F1C/NDUFB4/NDUFC2/CYC1/COX4I1/UQCRH/NDUFB6/NDUFB8/NDUFB1/ATP5PO/UQCRQ/NDUFAB1/COX5B/SLC25A4/SLC18A1/NDUF

			B5/NDUFA2/UQCR11/COX7B/ATP5MC1/NDUFB7/NDUFB9/COX7B2/COX6A1/TH/COX7A2/UCHL1/NDUFA4/COX6A2/SNCA
KEGG_OXIDATIVE_PHOSPHORYLATION	- 2.3 888 362 9	0.0198 64398	SDHD/ATP6V1E2/NDUFS8/ATP5PD/ATP5F1B/COX4I2/UQCRB/NDUFS7/ATP5F1E/UQCRC1/ATP6V1E1/ATP5F1D/COX6C/NDUFB2/SDHB/NDUFC1/PPA2/NDUFS5/UQCR10/COX5A/NDUFA8/PPA1/NDUFS3/NDUFA1/UQCRC2/ATP5PB/NDUFA6/ATP5MC3/ATP5MC2/COX17/NDUFV2/UQCRHL/NDUFB3/NDUFS4/NDUFA9/UQCRFS1/COX7A2L/COX7C/COX6B1/COX8A/ATP5PF/NDUFA7/ATP6V0B/NDUFA3/NDUFB10/ATP5F1C/ATP6V1F/NDUFB4/ATP5MF/NDUFC2/CYC1/COX4I1/UQCRH/NDUFB6/NDUFB8/NDUFB1/ATP5PO/UQCRQ/ATP5MG/NDUFAB1/COX5B/ATP5ME/NDUFB5/NDUFA2/UQCR11/COX7B/ATP5MC1/NDUFA11/NDUFB7/NDUFB9/COX7B2/COX6A1/LHPP/COX7A2/ATP4A/NDUFA4/COX6A2/ATP6V1G2/ATP6V0A4
KEGG_RIBOSOME	- 2.3 888 667 19	0.0198 64398	RPS20/RPL22/RPS2/UBA52/RPL37/RPS28/RPLP1/RPL6/RPL23A/RPL12/RPL10/RPS17/RPL23/RPS27/RPLP0/RPS27A/RPL14/RPL30/RPL26/RPLP2/RPL13/RPL36A/RPL19/RPS24/RPL17/RPL8/RPL10A/RPS23/RPL41/RPL13A/RSL24D1P11/RPL26L1/RPS15/RPS19/RPS25/RPS13/RPL18/RPL34/RPS6/RPL21/RPS9/RPL5/RPL37A/RPS8/RPL7A/RPL22L1/RPL38/RPL36/RPS29/RPL15/RPL35A/RPL29/RPL31/RPL27A/RPS11/RPS15A/RPS26/RPS3/RSL24D1/MRPL13/FAU/RPS16/RPS5/RPL32/RPSA/RPS7/RPL39/RPS10/RPS21/RPL18A/RPL35/RPS18/RPS4Y1/RPL27/RPL24/RPL9/RPS3A
REACTOME_RESPIRATORY_ELECTRON_TRANSPORT	- 2.4 343 976 73	0.0198 64398	TRAP1/NDUFAF3/NDUFA5/SDHC/NDUFAF4/COX11/CYCS/ETFA/TACO1/NDUFAF6/SDHD/TIMMDC1/NDUFS8/UQCRB/NDUFS7/COX18/COX16/UQCRC1/COX6C/NDUFB2/SDHB/NDUFC1/NDUFS5/UQCR10/COX5A/NDUFB11/SURF1/NDUFA8/NDUFS3/NDUFA1/UQCRC2/ECSIT/NDUFA6/NDUFV2/NDUFB3/NDUFS4/NDUFA9/UQCRFS1/TMEM126B/COX7A2L/COX7C/COX6B1/COX8A/COX14/NDUFA7/NDUFA3/NDUFB10/NDUFA12/NDUFAF2/NDUFB4/NDUFC2/CYC1/COX4I1/UQCRH/NDUFB6/NDUFAF5/NDUFB8/NDUFB1/NDUFA13/UQCRQ/NDUFAB1/COX5B/NDUFB5/NDUFA2/UQCR11/COX7B/NDUFA11/NDUFB7/NDUFB9/COX6A1/NDUFA4
WP_ELECTRON_TRANSPORT_CHAIN_OXPHOS_SYSTEM_IN_MITOCHONDRIA	- 2.4 717 717 44	0.0198 64398	SDHD/NDUFS8/ATP5PD/ATP5F1B/SLC25A5/UQCRB/NDUFS7/ATP5F1E/UQCRC1/ATP5F1D/COX6C/ATP5F1F/NDUFB2/SDHB/NDUFC1/NDUFS5/UQCR10/COX5A/SURF1/NDUFA8/NDUFS3/NDUFA1/UQCRC2/ATP5PB/NDUFA6/ATP5MC3/ATP5MC2/COX17/NDUFV2/NDUFB3/NDUFS4/NDUFA9/UQCRFS1/COX7A2L/COX7C/COX6B1/COX8A/ATP5PF/NDUFA7/NDUFA3/NDUFB10/NDUFA12/ATP5F1C/NDUFB4/ATP5MF/NDUFC2/COX4I1/UQCRH/NDUFB6/NDUFB8/NDUFB1/ATP5PO/UQCRQ/SLC25A27/ATP5MG/NDUFAB1/COX5B/ATP5ME/SLC25A4/NDUFB5/NDUFA2/UQCR11/COX7B/ATP5MC1/NDUFB7/NDUFB9/COX6A1/COX7A2/NDUFA4/COX6A2
REACTOME_RESPIRATORY_ELECTRON_TRANSPORT_ATP_SYNTHESIS_BY_CHEMIOSMOTIC_COUPLING_AND_HEAT_PRODUCTION_BY_UNCOUPLING_PROTEINS_	- 2.4 821 834 22	0.0198 64398	DMAC2L/TRAP1/NDUFAF3/NDUFA5/SDHC/SLC25A14/NDUFAF4/ATP5F1A/COX11/CYCS/ETFA/TACO1/NDUFAF6/SDHD/TIMMDC1/NDUFS8/ATP5PD/ATP5F1B/UQCRB/NDUFS7/COX18/ATP5F1E/COX16/UQCRC1/ATP5F1D/COX6C/NDUFB2/SDHB/NDUFC1/NDUFS5/UQCR10/COX5A/NDUFB11/SURF1/NDUFA8/PM20D1/NDUFS3/NDUFA1/UQCRC2/ECSIT/ATP5PB/NDUFA6/ATP5MC3/ATP5MC2/NDUFV2/NDUFB3/NDUFS4/NDUFA9/UQCRFS1/TMEM126B/COX7A2L/COX7C/COX6B1/COX8A/ATP5PF/COX14/NDUFA7/NDUFA3/NDUFB10/NDUFA12/ATP5F1C/NDUFAF2/NDUFB4/ATP5MF/NDUFC2/CYC1/COX4I1/UQCRH/NDUFB6/NDUFAF5/NDUFB8/NDUFB1/ND

			UFA13/ATP5PO/UQCRQ/SLC25A27/ATP5MG/NDUFAB1/COX5B/ATP5ME/NDUFB5/NDUFA2/UQCR11/COX7B/ ATP5MC1/NDUFA11/NDUFB7/NDUFB9/COX6A1/NDUFA4
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Table S3. The information of top 10 hub genes

Rank	Gene	Degree value	Expression level	Enriched significant clusters
1	<i>IL6</i>	33	Up	Cluster 3
2	<i>GRIN1</i>	32	Down	Cluster 1
3	<i>SNCB</i>	31	Down	Cluster 1
4	<i>CCK</i>	29	Down	Cluster 1
4	<i>OPALIN</i>	29	Down	Cluster 1
4	<i>HTR5A</i>	29	Down	Cluster 1
7	<i>KCNJ9</i>	28	Down	Cluster 1
8	<i>GABRA1</i>	26	Down	Cluster 1
9	<i>ATP2B3</i>	25	Down	Cluster 1
9	<i>SLC17A7</i>	25	Down	Cluster 1

Table S4. Correlation analysis between NOD1 and immune cells in GBM

Immune cell	Pearson coefficient	<i>p</i> value (Pearson)	Spearman coefficient	<i>p</i> value (Spearman)
NK cells	0.441	<0.001	0.462	<0.001
Neutrophils	0.381	<0.001	0.455	<0.001
Tem	0.438	<0.001	0.436	<0.001
TReg	0.407	<0.001	0.419	<0.001
Eosinophils	0.337	<0.001	0.364	<0.001
Macrophages	0.336	<0.001	0.361	<0.001
Th17 cells	0.307	<0.001	0.336	<0.001
NK CD56dim cells	0.286	<0.001	0.313	<0.001
T helper cells	0.252	<0.001	0.287	<0.001
aDC	0.274	<0.001	0.275	<0.001
DC	0.306	<0.001	0.266	<0.001
Th1 cells	0.237	0.002	0.260	<0.001
iDC	0.235	0.002	0.246	0.001
Tcm	0.186	0.015	0.216	0.005
CD8 T cells	0.230	0.003	0.198	0.010
T cells	0.210	0.006	0.188	0.015
Cytotoxic cells	0.186	0.016	0.174	0.024
NK CD56bright cells	0.163	0.034	0.126	0.102
Th2 cells	0.118	0.127	0.113	0.143
Mast cells	0.054	0.485	0.068	0.380
B cells	0.062	0.422	0.065	0.403
TFH	0.066	0.392	0.043	0.578
pDC	0.027	0.725	0.032	0.682
Tgd	-0.152	0.049	0.017	0.827

NK cell, natural killer cell; DC, dendritic cell; pDC, plasmacytoid DC; aDC, activated DC; iDC, interdigitating DC; Tcm, central memory T cell; Tem, effector memory T cell; TFH, follicular helper T cell; Tgd, gammadelta T cell; TReg, regulatory T cell.

Table S5. Tissue microarray data

No.	intensity	percentage	expression (low=0, high=1)	survival (death=1, survival=0)	overall survival	relapse (no=0, yes=1)	disease free survival	sex (female=0, male=1)	age	WHO classification	malignancy (no=0, yes=1)
F01	1.5-2	90.00%	1	0	91	0	91	0	17	2	0
A11	1.5-2	95.00%	1	0	109	0	109	0	47	2	0
I09	1.5	90.00%	1	0	75	0	75	0	24	2	0
G10	1.5	90.00%	1	0	85	0	85	0	-	2	0
J09	2	90.00%	1	0	71	0	71	0	66	1	0
D16	1.5	80.00%	1	0	95	0	95	1	49	3	0
C07	1.5	80.00%	1	0	100	0	100	1	34	2	0
J08	1.5-2	80.00%	1	0	71	0	71	1	49	2	0
E14	1.5	90.00%	1	1	15	1	12	0	43	4	1
J01	1.5	80.00%	1	1	29	1	29	0	70	3	0
F16	1.5-2	90.00%	1	0	87	1	48	0	52	2	0
F14	1.5-2	95.00%	1	0	87	1	53	0	42	2	0
H16	1.5	80.00%	1	0	77	1	26	0	48	2	0
J04	1.5-2	80.00%	1	1	10	1	10	1	45	4	1
I12	1.5-2	90.00%	1	1	10	1	10	1	62	4	1
J10	1.5-2	90.00%	1	1	14	1	14	1	41	4	1
E02	1.5-2	90.00%	1	1	13	1	13	1	44	4	1
G16	2	90.00%	1	1	32	1	32	1	56	4	1
H07	1.5	90.00%	1	1	41	1	34	1	46	4	1
I10	1.5-2	90.00%	1	1	23	1	23	1	52	3	0
G15	1.5-2	80.00%	1	1	11	1	11	1	59	3	0
E16	1.5	90.00%	1	1	37	1	27	1	46	3	0
H06	1.5	85.00%	1	0	81	1	40	1	34	3	0
G02	1.5-2	80.00%	1	1	62	1	44	1	68	2	0
F06	1.5	90.00%	1	1	20	1	20	1	74	2	0
I03	1.5-2	80.00%	1	0	76	1	76	1	41	2	0
D09	1.5	80.00%	1	0	97	1	30	1	60	2	0
D07	1.5-2	80.00%	1	0	97	1	35	1	47	2	0

G06	1.5	60.00%	1	0	86	0	86	0	14	1	0
I16	1.5	60.00%	1	0	72	0	72	1	30	1	0
G09	1.5	60.00%	1	1	17	1	17	0	60	4	1
F15	1.5	60.00%	1	1	55	1	35	0	45	3	0
H03	1.5	60.00%	1	1	59	1	22	1	35	3	0
J11	1.5	60.00%	1	1	21	1	21	1	56	3	0
E09	1-1.5	90.00%	1	0	93	0	93	0	42	3	0
A13	1-1.5	90.00%	1	0	108	0	108	0	59	2	0
B03	1	80.00%	1	0	106	0	106	0	55	2	0
J07	1-1.5	80.00%	1	0	71	0	71	0	19	2	0
A08	1-1.5	90.00%	1	0	110	0	110	1	41	2	0
I13	1	80.00%	1	0	74	0	74	1	56	2	0
J13	1	80.00%	1	0	69	0	69	1	10	1	0
G05	1	80.00%	1	1	23	1	23	0	65	4	1
H10	1-1.5	80.00%	1	1	23	1	23	0	30	3	0
D04	1	80.00%	1	1	50	1	50	0	57	3	0
I11	1-1.5	80.00%	1	0	75	1	75	0	26	3	0
B07	1	90.00%	1	0	105	1	59	0	49	2	0
J03	1	90.00%	1	1	9	1	9	1	63	4	1
H11	1	80.00%	1	1	34	1	23	1	65	4	1
E01	1	80.00%	1	1	50	1	41	1	41	4	1
E04	1	80.00%	1	1	11	1	11	1	22	4	1
A05	1-1.5	80.00%	1	1	22	1	22	1	53	4	1
G03	1-1.5	80.00%	1	1	10	1	10	1	60	4	1
C16	1-1.5	80.00%	1	0	99	1	48	1	68	3	0
I01	1-1.5	80.00%	1	0	77	1	41	1	36	2	0
I04	1.5	30.00%	0	0	76	0	76	0	45	2	0
G11	1	60.00%	0	0	85	0	85	1	36	2	0
J06	1.5	40.00%	0	1	11	1	11	0	69	3	0
A14	1	60.00%	0	1	72	1	17	0	56	3	0
I08	1.5	30.00%	0	1	18	1	18	1	30	3	0
C08	1	60.00%	0	0	100	1	46	1	37	3	0

H05	1-1.5	60.00%	0	0	81	1	33	1	47	3	0
D03	1	60.00%	0	0	98	1	34	1	65	2	0
D05	1-1.5	60.00%	0	0	97	1	55	1	57	2	0
H09	1-1.5	40.00%	0	0	79	0	79	0	59	3	0
I06	1-1.5	40.00%	0	0	76	0	76	0	32	2	0
A12	0.5	80.00%	0	0	108	0	108	0	34	1	0
A10	0.5-1	80.00%	0	0	109	0	109	1	17	3	0
F13	1	30.00%	0	0	87	0	87	1	3	2	0
B08	0.5	90.00%	0	0	105	0	105	1	61	2	0
D13	1	40.00%	0	0	96	1	54	0	42	2	0
H13	1	30.00%	0	1	12	1	12	1	41	4	1
H15	1	30.00%	0	1	6	1	6	1	78	4	1
G12	1.5	10.00%	0	0	85	0	85	0	49	1	0
G08	1.5	10.00%	0	0	86	0	86	1	37	2	0
G14	1.5	20.00%	0	0	84	0	84	1	19	2	0
A06	1.5	10.00%	0	0	111	0	111	1	69	2	0
H01	1.5	10.00%	0	1	40	1	40	1	58	3	0
J15	1.5	25.00%	0	1	39	1	39	1	40	3	0
I15	1.5	20.00%	0	1	19	1	19	1	67	3	0
F10	1.5	20.00%	0	0	88	1	30	1	36	3	0
B11	0.5	60.00%	0	0	104	1	85	1	39	3	0
E05	0.5	60.00%	0	0	94	1	27	1	20	3	0
E10	0.5-1	60.00%	0	1	55	1	47	1	41	2	0
A15	0.5	60.00%	0	0	108	1	34	1	80	2	0
B09	0.5	60.00%	0	0	105	1	52	1	44	2	0
A01	1	5.00%	0	0	113	0	113	0	37	2	0
F08	0.5	30.00%	0	0	88	0	88	0	36	2	0
E03	1	5.00%	0	0	94	0	94	0	36	2	0
D06	1	5.00%	0	0	97	0	97	0	6	1	0
C06	1	20.00%	0	0	101	0	101	0	61	1	0
E13	1	10.00%	0	0	92	0	92	1	35	3	0
B01	1	10.00%	0	0	106	0	106	1	62	3	0



A04	1	10.00%	0	0	112	0	112	1	42	2	0
B10	0.5	40.00%	0	0	105	0	105	1	36	2	0
I05	1	5.00%	0	0	76	0	76	1	54	2	0
B12	1	15.00%	0	0	104	0	104	1	56	2	0
G07	0.5	30.00%	0	0	86	0	86	1	28	2	0
I07	1	20.00%	0	0	75	0	75	1	48	2	0
A02	1-1.5	20.00%	0	0	113	0	113	1	44	2	0
E06	1	5.00%	0	0	93	0	93	1	36	2	0
C05	1	15.00%	0	1	67	1	81	0	55	3	0
G04	1	15.00%	0	1	33	1	33	0	33	3	0
A03	1	10.00%	0	0	112	1	27	0	63	3	0
J14	1-1.5	20.00%	0	0	69	1	69	0	36	3	0
H12	1	20.00%	0	1	17	1	17	1	9	4	1
H14	1	20.00%	0	1	26	1	26	1	49	3	0
E12	1	5.00%	0	1	56	1	56	1	37	3	0
J12	1	10.00%	0	1	37	1	37	1	57	3	0
G13	1	10.00%	0	1	32	1	32	1	41	3	0
B05	1	10.00%	0	0	105	1	72	1	29	3	0
B02	1	5.00%	0	1	83	1	83	1	66	2	0
D12	1	20.00%	0	1	57	1	36	1	69	2	0
F05	1	20.00%	0	1	33	1	33	1	79	2	0
D02	1	20.00%	0	1	59	1	55	1	63	2	0
C09	0.5	30.00%	0	0	100	1	63	1	44	2	0
D01	1	10.00%	0	0	98	1	49	1	31	2	0
D10	1	15.00%	0	0	96	1	50	1	63	2	0
D08	0.5	20.00%	0	0	97	0	97	0	42	2	0
B06	0.5	20.00%	0	0	105	0	105	0	36	2	0
E08	0.5-1	15.00%	0	0	93	0	93	0	18	2	0
C12	0.5	20.00%	0	0	99	0	99	0	52	2	0
H04	0.5	10.00%	0	0	81	0	81	0	38	1	0
J05	0.5	25.00%	0	0	71	0	71	1	37	2	0
B16	0.5	10.00%	0	0	102	0	102	1	6	2	0

C15	0.5	20.00%	0	0	99	0	99	1	41	2	0
F07	0.5	20.00%	0	0	88	0	88	1	50	2	0
C04	0.5	20.00%	0	0	101	0	101	1	57	2	0
B13	0.5	10.00%	0	0	103	0	103	1	12	1	0
C01	0.5	10.00%	0	0	102	0	102	1	5	1	0
C14	0.5	10.00%	0	1	66	1	58	0	41	3	0
F02	0.5	10.00%	0	0	91	1	43	0	47	3	0
A09	0.5	20.00%	0	1	52	1	35	1	24	4	1
F04	0.5	20.00%	0	1	48	1	21	1	42	3	0
E11	0.5-1	20.00%	0	1	73	1	14	1	58	3	0
C13	0.5	10.00%	0	0	99	1	54	1	60	2	0
B04	0	0.00%	0	0	106	0	106	0	46	2	0
A16	0	0.00%	0	0	108	0	108	0	28	2	0
A07	0	0.00%	0	0	111	0	111	0	11	1	0
B15	0	0.00%	0	0	103	0	103	0	37	1	0
D14	0	0.00%	0	0	95	0	95	0	26	1	0
F12	0	0.00%	0	0	87	0	87	0	18	1	0
G01	0	0.00%	0	0	87	0	87	1	20	3	0
F03	0	0.00%	0	0	91	0	91	1	33	3	0
I02	0	0.00%	0	0	77	0	77	1	40	2	0
C11	0	0.00%	0	0	100	0	100	1	46	2	0
I14	0	0.00%	0	0	74	0	74	1	15	2	0
D11	0	0.00%	0	0	96	0	96	1	20	2	0
B14	0	0.00%	0	0	103	0	103	1	66	2	0
C03	0	0.00%	0	0	101	0	101	1	32	1	0
F11	0	0.00%	0	0	88	0	88	1	38	1	0
H02	0	0.00%	0	1	27	1	26	0	40	3	0
H08	0	0.00%	0	1	34	1	34	0	58	3	0
D15	0	0.00%	0	1	30	1	30	0	41	3	0
C02	0	0.00%	0	0	101	1	62	0	43	3	0
E07	0	0.00%	0	0	93	1	13	0	23	2	0
J02	0	0.00%	0	1	26	1	26	1	41	2	0

E15	0	0.00%	0	0	92	1	26	1	40	2	0
F09	0	0.00%	0	0	88	1	41	1	32	2	0