**Supplementary materials**

**Exercise Protocol**. Patients in the transcutaneous neuromuscular electrical stimulation group (NMES; n = 13) performed a NMES protocol delivered using a hand-held, battery powered device (Empi 300PV, Minnesota, USA) linked to two skin surface gel electrodes (7 x 4 cm). The negative electrode was positioned proximal to the patella so as to cover the motor points of the vastus lateralis and vastus medialis muscles with the positive electrode placed longitudinally over the rectus femoris motor point. The 30 min stimulation protocol consisted of repetitions of 15 s stimulation (including 2 s ramp-up and 2 s ramp-down of current) and 5 s rest. Stimulation was a biphasic pulse at 50 Hz with a pulse duration of 300 µs. During stimulation patients were seated with knees extended and supported on a physiotherapists couch.

**RNA Extraction**. Previously frozen muscle samples were homogenised in TRI Reagent Solution (Applied Biosystems / Life Technologies, Paisley, UK). Chloroform was used to separate the homogenate into aqueous-, inter- and organic-phases. RNA was precipitated from the aqueous phase with isopropanol, the resulting pellet washed in ethanol and then re-suspended in nuclease free water.

Extracted RNA was quantified according to its absorbance of 260nm light (Nanodrop 2000 Spectrophotometer, Thermoscientific, Waltham, MA, USA) before reverse transcription to cDNA. One micro-gram of RNA per sample was incubated with random hexamer primers, dNTPs (deoxynucleotide triphosphates) and reverse transcriptase (SuperScript III, Life Technologies / Invitrogen) in order to synthesise complimentary DNA.

Change in abundance of mRNA is expressed using the widely accepted ΔΔCT method ( Livak & Schmittgen, Methods; 2001). In this term, the first Δ refers to the relative difference between target and housekeeping gene within a sample (ΔCT), the second Δ refers to the relative difference between ΔCT in the baseline and 24 hr samples. The value of ΔΔCT equates to fold change from baseline in the target gene.

|  |
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| **Table S1.** Transcript name abbreviations |
| **Abbreviation** | **Transcript name** |
| AQP4 | aquaporin 4  |
| ASPA | aspartoacylase |
| ATP2B2 | ATPase, Ca++ transporting, plasma membrane 2 |
| ATP5G3 | ATP synthase, H+ transporting, mitochondrial Fo complex, subunit C3 (subunit 9) |
| BCHE | butyrylcholinesterase |
| CCL19 | chemokine (C-C motif) ligand 19 |
| CCNG1 | cyclin G1  |
| CCNG2 | cyclin G2  |
| CD38 | CD38 molecule  |
| CDK2 | cyclin-dependent kinase 2 |
| CDKN2C | cyclin-dependent kinase inhibitor 2C (p18, inhibits CDK4) |
| CES2 | carboxylesterase 2 |
| CHI3L1 | chitinase 3-like 1 (cartilage glycoprotein-39) |
| CLCN1 | chloride channel, voltage-sensitive 1  |
| CSDE1 | cold shock domain containing E1, RNA-binding  |
| CTSL | cathepsin L |
| CYBA | cytochrome b-245, alpha polypeptide  |
| DYSF | dysferlin |
| EIF2B4 | eukaryotic translation initiation factor 2B, subunit 4 delta, 67kDa  |
| EIF4H | eukaryotic translation initiation factor 4H  |
| ETFB | electron-transfer-flavoprotein, beta polypeptide |
| FADS3 | fatty acid desaturase 3 |
| FANCA | Fanconi anemia, complementation group A |
| FOS | FBJ murine osteosarcoma viral oncogene homolog |
| GLRX2 | glutaredoxin 2 |
| HSPA5 | heat shock 70kDa protein 5 (glucose-regulated protein, 78kDa) |
| IL10 | interleukin 10 |
| IL6 | interleukin 6 |
| IRS1 | insulin receptor substrate 1 |
| ITGB6 | integrin, beta 6 |
| JUN | jun proto-oncogene  |
| LTC4S | leukotriene C4 synthase  |
| MDH1 | malate dehydrogenase 1, NAD (soluble) |
| MFAP4 | microfibrillar-associated protein 4 |
| MGST2 | microsomal glutathione S-transferase 2 |
| MN1 | meningioma (disrupted in balanced translocation) 1 |
| MSTN | myostatin |
| MYC | v-myc avian myelocytomatosis viral oncogene homolog |
| MYLPF | myosin light chain, phosphorylatable, fast skeletal muscle  |
| NDUFS3 | NADH dehydrogenase (ubiquinone) Fe-S protein 3, 30kDa (NADH-coenzyme Q reductase) |
| NFKB1 | nuclear factor of kappa light polypeptide gene enhancer in B-cells 1 |
| NPY6R | neuropeptide Y receptor Y6 (pseudogene) |
| OSTM1 | osteopetrosis associated transmembrane protein 1 |
| P2RX5 | purinergic receptor P2X, ligand gated ion channel, 5 |
| PCCB | propionyl CoA carboxylase, beta polypeptide  |
| PLA2G4C | phospholipase A2, group IVC (cytosolic, calcium-independent)  |
| PPARD | peroxisome proliferator-activated receptor delta  |
| PPIA | peptidylprolyl isomerase A (cyclophilin A) |
| PXMP4 | peroxisomal membrane protein 4, 24kDa  |
| RASGRP3 | RAS guanyl releasing protein 3 (calcium and DAG-regulated) |
| RELA | v-rel avian reticuloendotheliosis viral oncogene homolog A  |
| RELB | v-rel avian reticuloendotheliosis viral oncogene homolog B |
| RRAD | Ras-related associated with diabetes |
| RUNX1 | runt related transcription factor 1 |
| SERPINB1 | serpin peptidase inhibitor, clade B (ovalbumin), member 1 |
| SIRT2 | sirtuin 2  |
| SLC25A11 | solute carrier family 25 (mitochondrial carrier; oxoglutarate carrier), member 11 |
| SLC25A12 | solute carrier family 25 (aspartate/glutamate carrier), member 12  |
| SLC25A36 | solute carrier family 25 (pyrimidine nucleotide carrier), member 36 |
| SOAT1 | sterol O-acyltransferase 1 |
| SOD2 | superoxide dismutase 2, mitochondrial |
| SORCS1 | sortilin-related VPS10 domain containing receptor 1 |
| SPAG7 | sperm associated antigen 7 |
| TIMP1 | TIMP metallopeptidase inhibitor 1 |
| TNFRSF11A | tumor necrosis factor receptor superfamily, member 11a, NFKB activator  |
| TP53 | tumor protein p53  |
| TPM1 | tropomyosin 1 (alpha) |
| UCRC | ubiquinol-cytochrome c reductase, complex III subunit X |
| UQCRC1 | ubiquinol-cytochrome c reductase core protein I |
| UQCRFS1 | ubiquinol-cytochrome c reductase, Rieske iron-sulfur polypeptide 1 |
| VDAC3 | voltage-dependent anion channel 3 |
| YWHAZ | tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, zeta  |

**Results.**

In order to further investigate the function of the 14 genes commonly regulated by both RE and NMES, targets and expression values were interrogated using Ingenuity Pathway Analysis (IPA; QIAGEN Redwood City, USA [www.qiagen.com/ingenuity](http://www.qiagen.com/ingenuity)).



Figure S1. Probability of influence on the cellular function (*Cell Death and Survival*) identified by IPA.



Figure S2. Network of gene interactions within the *Cell Death and Survival* function. Targets coloured pink were significantly changed in abundance following both RE and NMES.

**Table S2.** Mean Fold Change (2^-DDCt) between baseline and sample obtained 24 h after either resistance exercise (RE) or transcutaneous neuromuscular electrical stimulation (NMES).

|  |  |
| --- | --- |
| **RE** |  |
| **Gene** | **Mean 2^-DD Ct** |
|  |  |
| NFKBIA | 0.97 |
| RELA | 1.95 |
| TP53 | 2.40 |
| MYC | 11.55 |
| CFLAR | 0.68 |
| E2F1 | 1.57 |
| ACTN3 | 6.16 |
| SLC25A4 | 0.71 |
| DAXX | 1.55 |
| DECR1 | 0.76 |
| FLNC | 1.76 |
| HSPB2 | 1.31 |
| IL18 | 0.81 |
| ACAA1 | 0.83 |
| APOA2 | Undetected |
| APOC1 | 1.38 |
| BPGM | 1.09 |
| CAST | 1.72 |
| DCI | 1.11 |
| FLII | 0.93 |
| GLP1R | 0.09 |
| GOT1 | 0.89 |
| GPX4 | 0.89 |
| KCNN3 | 2.44 |
| KCNN4 | 6.13 |
| LAMB1 | 1.43 |
| MN1 | 0.58 |
| MYOD1 | 1.53 |
| NDUFB5 | 0.79 |
| NDUFC1 | 0.70 |
| NDUFS8 | 0.88 |
| PGM1 | 0.51 |
| PSMB10 | 1.43 |
| PSMD3 | 1.06 |
| PTPN3 | 0.98 |
| ST3GAL1 | 0.81 |
| SOAT1 | 2.51 |
| TFR2 | 1.45 |
| UQCRC1 | 0.69 |
| ASPA | 0.51 |
| GAMT | 0.62 |
| NCF1C;NCF1;NCF1B | 2.51 |
| PGAM2 | 0.65 |
| TPM1 | 0.66 |
| PCCB | 0.69 |
| RYR1 | 0.66 |
| SOD2 | 3.62 |
| ACACA | 2.06 |
| HPGD | 1.34 |
| ITGB6 | 0.55 |
| LTC4S | 0.59 |
| INSR | 0.79 |
| CDH13 | 0.76 |
| DPT | 0.72 |
| FOS | 8.72 |
| CCL22 | 4.71 |
| CCNG1 | 0.70 |
| CCNG2 | 0.58 |
| CCL19 | 21.65 |
| TIMP1 | 11.17 |
| MRAS | 1.97 |
| MGMT | 0.90 |
| ENDOG | 0.84 |
| BRCA1 | 1.07 |
| ANKRD1 | 8.77 |
| IL10 | 17.10 |
| IL1A | 1.00 |
| TNF | 4.43 |
| IL6 | 51.26 |
| ITGA7 | 0.79 |
| NFKB2 | 2.11 |
| AK1 | 0.75 |
| CDKN2C | 0.65 |
| CKMT2 | 0.97 |
| PDK2 | 0.67 |
| PDK4 | 2.73 |
| PI4KAP2;PI4KA;PI4KAP1 | 1.08 |
| MAP2K3 | 1.40 |
| SQSTM1 | 1.07 |
| AKT1 | 1.45 |
| IRS1 | 0.51 |
| MAP3K12 | 1.32 |
| FASTK | 11.90 |
| CHRNE | 1.88 |
| FASLG | 1.90 |
| CHRNB1 | 0.75 |
| CHRND | 2.71 |
| MGST2 | 0.72 |
| SRF | 1.04 |
| ATP5D | 0.85 |
| IRF7 | 0.16 |
| MFAP5 | 1.00 |
| ACOX2 | 1.26 |
| SLC25A11 | 0.65 |
| SLC25A12 | 0.65 |
| TNFRSF11A | 5.01 |
| CES2 | 2.47 |
| MYOM2 | 0.75 |
| EIF2S1 | 1.65 |
| RRAD | 11.29 |
| SDHA | 0.67 |
| BAD | 38.13 |
| CLCN2 | 1.72 |
| CHKB;CPT1B | 0.63 |
| CTSH | 0.96 |
| FHL3 | 0.57 |
| NDUFA10 | 0.83 |
| NDUFS3 | 0.84 |
| POLR1C | 2.18 |
| SPAG7 | 0.75 |
| MYBPH | 5.29 |
| NDUFS1 | 0.75 |
| RPL3L | 0.55 |
| GNG7 | 0.67 |
| COX6A2 | 0.66 |
| MSTN | 0.39 |
| GRB10 | 1.44 |
| MAF | 0.67 |
| PDLIM7 | 0.78 |
| ARPC4 | 1.81 |
| PPIF | 1.67 |
| FARP1 | 1.68 |
| MDH1 | 0.67 |
| S100A13 | 1.05 |
| CCT3 | 1.50 |
| AKR1A1 | 1.47 |
| PECI | 0.72 |
| GMPR | 0.66 |
| UPK3A | 0.54 |
| ADRM1 | 1.13 |
| RPP14 | 1.83 |
| NDUFV1 | 0.79 |
| CSDE1 | 0.74 |
| ADAT1 | 1.28 |
| CA14 | 1.05 |
| GRHPR | 0.77 |
| MORF4L2 | 1.96 |
| ICMT | 3.17 |
| MYLPF | 0.57 |
| UCRC | 0.75 |
| OSTM1 | 1.59 |
| BZW2 | 1.06 |
| PKD2L2 | Undetected |
| ZNF330 | 1.07 |
| CDC42BPA | 1.20 |
| RASGRP3 | 0.61 |
| NPDC1 | 1.34 |
| GSTK1 | 0.87 |
| CYLD | 1.53 |
| MRPS33 | 0.81 |
| BRP44L | 1.63 |
| PPME1 | 0.92 |
| HP1BP3 | 0.93 |
| SLC25A36 | 0.62 |
| ZC3H15 | 1.37 |
| ZMAT5 | 0.71 |
| TNXB | Undetected |
| NT5M | 1.28 |
| ANK1 | 2.37 |
| NDUFV2 | 0.87 |
| XRCC5 | 1.23 |
| RRAGD | 0.90 |
| FADS3 | 3.36 |
| SIGIRR | 1.55 |
| UCP1 | Undetected |
| TSPYL2 | 2.34 |
| GNB1L | 1.08 |
| UBE2Z | 1.75 |
| PSTPIP2 | 1.22 |
| CARS2 | 1.23 |
| VCPIP1 | 1.06 |
| SERPINB1 | 13.35 |
| MRPS15 | 0.82 |
| RUNX1 | 12.59 |
| LMO1 | 0.91 |
| MEF2C | 0.64 |
| MYOG | 0.92 |
| SMARCA4 | 1.76 |
| CNBP | 0.80 |
| RUNX3 | 2.39 |
| CREB1 | 1.09 |
| PPARA | 0.71 |
| RELB | 4.36 |
| IL12B | Undetected |
| PLA2G4C | 0.59 |
| MMP2 | 1.02 |
| DAPK1 | 3.52 |
| FRAP1 | 1.01 |
| YWHAZ | 3.01 |
| ACTN1 | 2.33 |
| ANXA6 | 1.04 |
| AQP4 | 0.42 |
| CBFB | 2.60 |
| MRPL12 | 1.11 |
| DYSF | 4.18 |
| ACCN3 | 0.81 |
| NDUFA9 | 0.70 |
| NPY6R | 0.50 |
| SIRT2 | 0.67 |
| TOR1B | 1.60 |
| EIF2B4 | 1.74 |
| ABR | 2.87 |
| EIF4H | 3.14 |
| GNRHR2;RBM8A | 1.03 |
| OLFM1 | 1.56 |
| FARS2 | 1.11 |
| RABL2A;RABL2B | 2.00 |
| WBP11 | 1.10 |
| NDUFS7 | 1.36 |
| SLC37A4 | 1.27 |
| TRIM63 | 2.56 |
| MYL3 | 0.64 |
| DNAJA1 | 1.53 |
| ATP5G3 | 0.79 |
| COX6B1 | 0.81 |
| PRKAR1A | 1.50 |
| SMARCC1 | 1.74 |
| TBCC | 0.98 |
| TNNI2 | 0.75 |
| PKP4 | 1.25 |
| IDH1 | 0.74 |
| PRMT5 | 1.56 |
| CCT4 | 1.26 |
| MRCL3 | 0.89 |
| ATP5I | 1.16 |
| DNAJB5 | Undetected |
| RPS27L | 2.04 |
| TPRKB | 1.10 |
| GSK3B | 1.19 |
| SIVA1 | 0.79 |
| CCND1 | 1.12 |
| CD38 | 0.61 |
| JUN | 0.64 |
| C22orf9 | 1.26 |
| LGALS1 | 1.08 |
| INS | Undetected |
| ALDH2 | 0.72 |
| SFN | Undetected |
| HSPB1 | 0.89 |
| CYC1 | 0.73 |
| FNTA | 1.39 |
| NOL3 | 0.81 |
| SLC16A3 | 1.02 |
| DEXI | 0.88 |
| SORCS1 | 0.51 |
| MYL1 | 0.66 |
| TCAP | 0.60 |
| VDAC3 | 0.69 |
| ARS2 | 1.66 |
| PACSIN3 | 0.74 |
| FBXO32 | 1.05 |
| COX7B | 0.79 |
| GLRX2 | 1.47 |
| SYNGR1 | 0.78 |
| CTSL1 | 5.35 |
| TBC1D22A | 1.19 |
| KIAA0368 | 0.95 |
| DYNC1H1 | 0.87 |
| CTNNA3 | 0.80 |
| PREPL | 1.77 |
| OSBP | 0.88 |
| PSME1 | 1.07 |
| LRP4 | 1.28 |
| CCPG1 | 1.09 |
| IKBKB | 1.36 |
| LIAS | 0.91 |
| MFAP4 | 0.53 |
| AKR1C2;AKR1C1 | 1.03 |
| CDC2L1;CDC2L2 | 1.02 |
| CALCOCO2 | 1.22 |
| ADK | 1.00 |
| CLIP1 | 0.66 |
| ACO2 | 0.94 |
| CTSL2 | Undetected |
| ATP5O | 0.75 |
| COX5B | 0.75 |
| PSMB1 | 1.13 |
| PSMD7 | 1.18 |
| SFRS2 | 6.11 |
| FBP2 | 0.74 |
| NDUFB8 | 0.84 |
| RTN3 | 12.97 |
| MAN2C1 | 1.06 |
| TXN2 | 0.83 |
| ARTS | 1.52 |
| P2RX5 | 4.20 |
| MARS2 | 1.48 |
| FADD | 2.59 |
| CAPN3 | 0.77 |
| ACTA1 | 0.75 |
| ANXA7 | 1.00 |
| UQCRB | 0.75 |
| CHAF1B | 0.67 |
| PRDX1 | 1.09 |
| PPARD | 2.48 |
| PPP2R4 | 1.25 |
| GPSN2 | 0.73 |
| ALDOA | 0.78 |
| RPL38 | 0.92 |
| EIF4EBP1 | 1.02 |
| CDK2 | 3.08 |
| CYBA | 2.06 |
| HMBS | 1.00 |
| CHI3L1 | 59.28 |
| AARS | 1.04 |
| KALRN | 1.37 |
| DLG5 | 2.32 |
| MLL | 0.96 |
| UQCRFS1 | 0.71 |
| TOX4 | 1.18 |
| CCR10 | 1.06 |
| CDK2AP2 | 2.26 |
| ANP32B | 1.35 |
| NAP1L1 | 1.20 |
| PRPS1 | 1.29 |
| MYH4 | 3.60 |
| PKM2 | 1.06 |
| NFKB1 | 1.62 |
| EIF3K | 0.87 |
| FOXO3 | 0.87 |
| NSFL1C | 1.02 |
| ZFAND5 | 1.79 |
| ATP5G1 | 1.02 |
| EIF2S2 | Undetected |
| PLA2G12A | 2.15 |
| MKRN1 | 1.09 |
| SYNGR2 | 1.82 |
| LDHA | 1.51 |
| POLRMT | 2.90 |
| GPC1 | 0.88 |
| CLCN1 | 0.50 |
| LARGE | 2.04 |
| GBP2 | 1.89 |
| DLAT | 0.75 |
| MAPT | 0.81 |
| ATF4 | 1.30 |
| SOCS2 | 2.44 |
| SVIL | 0.61 |
| MDH2 | 2.05 |
| CTSB | 2.14 |
| ADARB1 | 0.76 |
| REL | 1.13 |
| DUSP13 | 0.71 |
| ATP5B | 0.80 |
| COX4I1 | 0.81 |
| GPI | 1.01 |
| AMPD3 | 2.92 |
| PYGM | 0.66 |
| BCHE | 0.45 |
| UQCRC2 | 0.76 |
| VCP | 1.13 |
| COL4A1 | 2.47 |
| PMVK | 2.33 |
| CASP10 | 1.19 |
| KCNN2 | 1.67 |
| HSPA1B | 1.63 |
| FOXO1 | 0.80 |
| IKBKE | 3.82 |
| RXRA | 0.84 |
| HRASLS | 0.82 |
| ETFB | 0.69 |
| ATP2B2 | 0.38 |
| RUVBL2 | 1.09 |
| ATP2A1 | 0.53 |
| RFX2 | 2.13 |
| DGKD | 2.69 |
| FANCA | 5.81 |
| TRIB2 | 1.44 |
| PSAP | 1.01 |
| DBI | 1.02 |
| PXMP4 | 0.74 |
| TPI1 | 0.83 |
| COX7C | 1.68 |
| LOC654007;EEF1G | 0.79 |
| PSME2 | 1.94 |
| CDC2L2 | 2.15 |
| HSPA5 | 3.17 |
| PPIA | 3.87 |
| HPRT1 | 1.80 |
| TGFB1 | 1.76 |

|  |  |
| --- | --- |
| **NMES** |  |
| **Detector** | **Mean Fold Change (2^-DDCt)** |
|  |  |
| NFKBIA | 1.09 |
| RELA | 3.13 |
| TP53 | 4.42 |
| MYC | 10.35 |
| CFLAR | 0.77 |
| E2F1 | 1.11 |
| ACTN3 | 0.94 |
| SLC25A4 | 0.62 |
| DAXX | 1.75 |
| DECR1 | 0.79 |
| 18S | 0.75 |
| 18S | 0.79 |
| FLNC | 2.65 |
| HSPB2 | 0.74 |
| IL18 | 0.75 |
| ACAA1 | 0.80 |
| APOA2 | Undetected |
| APOC1 | 1.39 |
| BPGM | 1.07 |
| CAST | 1.99 |
| ECI1 | 0.98 |
| FLII | 1.23 |
| GLP1R | Undetected |
| GOT1 | 0.79 |
| GPX4 | 0.87 |
| KCNN3 | 4.83 |
| KCNN4 | 4.00 |
| LAMB1 | 1.30 |
| MN1 | 0.43 |
| MYOD1 | 1.36 |
| NDUFB5 | 0.75 |
| NDUFC1 | 0.74 |
| NDUFS8 | 0.94 |
| PGM1 | 0.74 |
| 18S | 0.84 |
| 18S | 0.83 |
| PSMB10 | 0.91 |
| PSMD3 | 1.53 |
| PTPN3 | 1.38 |
| ST3GAL1 | 0.89 |
| SOAT1 | 3.05 |
| TFR2 | 1.00 |
| UQCRC1 | 0.62 |
| ASPA | 0.64 |
| GAMT | 0.70 |
| NCF1C;NCF1B;NCF1 | 1.81 |
| PGAM2 | 0.73 |
| TPM1 | 0.61 |
| PCCB | 0.72 |
| RYR1 | 0.94 |
| SERPINE1 | 15.74 |
| SOD2 | 3.64 |
| ACACA | 2.55 |
| HPGD | 1.21 |
| ITGB6 | 0.69 |
| LTC4S | 0.46 |
| INSR | 1.20 |
| CDH13 | 1.09 |
| DPT | 0.53 |
| FOS | 17.63 |
| CCL22 | 12.94 |
| CCNG1 | 0.88 |
| CCNG2 | 0.53 |
| CCL19 | 9.76 |
| TIMP1 | 16.67 |
| MRAS | 2.60 |
| MGMT | 0.84 |
| ENDOG | 0.83 |
| BRCA1 | 0.78 |
| ANKRD1 | 7.22 |
| IL10 | 5.20 |
| IL1A | 2.03 |
| TNF | 3.01 |
| IL6 | 25.79 |
| ITGA7 | 0.89 |
| NFKB2 | 2.54 |
| AK1 | 0.76 |
| CDKN2C | 0.77 |
| CKMT2 | 0.92 |
| PDK2 | 0.84 |
| PDK4 | 3.12 |
| PI4KA;PI4KAP1;PI4KAP2 | 1.40 |
| MAP2K3 | 1.37 |
| SQSTM1 | 1.29 |
| AKT1 | 1.42 |
| IRS1 | 0.63 |
| MAP3K12 | 1.18 |
| FASTK | 1.27 |
| CHRNE | 1.09 |
| FASLG | 2.29 |
| CHRNB1 | 0.98 |
| CHRND | 4.13 |
| MGST2 | 0.82 |
| SRF | 1.42 |
| ATP5D | 0.68 |
| IRF7 | 2.09 |
| MFAP5 | 0.75 |
| ACOX2 | 0.63 |
| SLC25A11 | 0.71 |
| SLC25A12 | 0.74 |
| TNFRSF11A | 5.92 |
| CES2 | 4.91 |
| MYOM2 | 0.88 |
| EIF2S1 | 1.77 |
| RRAD | 10.29 |
| SDHA | 0.82 |
| BAD | 1.08 |
| CLCN2 | 0.83 |
| CPT1B;CHKB | 0.80 |
| CTSH | 1.08 |
| FHL3 | 0.84 |
| NDUFA10 | 0.76 |
| NDUFS3 | 0.64 |
| POLR1C | 2.70 |
| SPAG7 | 0.96 |
| MYBPH | 10.83 |
| NDUFS1 | 0.82 |
| RPL3L | 0.71 |
| GNG7 | 0.75 |
| COX6A2 | 0.92 |
| MSTN | 0.53 |
| GRB10 | 1.73 |
| MAF | 0.79 |
| PDLIM7 | 0.98 |
| ARPC4 | 1.85 |
| PPIF | 1.76 |
| FARP1 | 2.10 |
| MDH1 | 0.87 |
| S100A13 | 1.53 |
| CCT3 | 1.74 |
| AKR1A1 | 1.30 |
| ECI2 | 0.93 |
| GMPR | 0.78 |
| UPK3A | 0.78 |
| ADRM1 | 1.19 |
| RPP14 | 1.51 |
| NDUFV1 | 0.79 |
| CSDE1 | 1.06 |
| ADAT1 | 1.49 |
| CA14 | 0.58 |
| GRHPR | 0.71 |
| MORF4L2 | 3.97 |
| ICMT | 3.36 |
| MYLPF | 0.62 |
| UQCR10 | 0.86 |
| OSTM1 | 1.41 |
| BZW2 | 1.41 |
| PKD2L2 | Undetected |
| ZNF330 | 1.57 |
| CDC42BPA | 1.06 |
| RASGRP3 | 0.62 |
| NPDC1 | 4.29 |
| GSTK1 | 0.85 |
| CYLD | 1.54 |
| MRPS33 | 0.68 |
| MPC1 | 1.11 |
| PPME1 | 1.07 |
| HP1BP3 | 1.05 |
| SLC25A36 | 0.85 |
| ZC3H15 | 1.90 |
| ZMAT5 | 0.86 |
|   | Undetected |
| NT5M | 1.08 |
| ANK1 | 2.84 |
| NDUFV2 | 1.14 |
| XRCC5 | 1.37 |
| RRAGD | 1.41 |
| FADS3 | 3.68 |
| SIGIRR | 1.04 |
| UCP1 | Undetected |
| TSPYL2 | 1.00 |
| GNB1L | 1.44 |
| UBE2Z | 1.72 |
| PSTPIP2 | 1.26 |
| CARS2 | 1.03 |
| VCPIP1 | 2.20 |
| MRPS15 | 0.89 |
| RUNX1 | 15.74 |
| LMO1 | 1.37 |
| MEF2C | 0.85 |
| MYOG | 1.66 |
| SMARCA4 | 2.21 |
| CNBP | 1.01 |
| RUNX3 | 3.49 |
| CREB1 | 1.11 |
| PPARA | 0.73 |
| RELB | 5.84 |
| IL12B | Undetected |
| PLA2G4C | 0.65 |
| MMP2 | 0.99 |
| DAPK1 | 1.51 |
| MTOR | 1.21 |
| YWHAZ | 5.03 |
| ACTN1 | 1.70 |
| ANXA6 | 1.05 |
| AQP4 | 0.42 |
| CBFB | 2.77 |
| MRPL12 | 1.26 |
| DYSF | 6.19 |
| ASIC3 | 1.06 |
| NDUFA9 | 1.02 |
| NPY6R | 0.67 |
| SIRT2 | 2.89 |
| TOR1B | 1.83 |
| EIF2B4 | 2.10 |
| ABR | 1.48 |
| EIF4H | 3.21 |
| GNRHR2;RBM8A | 1.03 |
| OLFM1 | 1.37 |
| FARS2 | 0.99 |
| RABL2B;RABL2A | 2.04 |
| WBP11 | 1.43 |
| NDUFS7 | 0.73 |
| SLC37A4 | 0.63 |
| TRIM63 | 2.88 |
| MYL3 | 1.55 |
| DNAJA1 | 1.53 |
| ATP5G3 | 0.64 |
| COX6B1 | 1.02 |
| PRKAR1A | 1.64 |
| SMARCC1 | 1.76 |
| TBCC | 0.87 |
| TNNI2 | 0.91 |
| PKP4 | 1.33 |
| IDH1 | 0.83 |
| PRMT5 | 1.88 |
| CCT4 | 1.57 |
| MYL12A | 1.28 |
| ATP5I | 0.75 |
| DNAJB5 | 4.09 |
| TPRKB | 1.17 |
| GSK3B | 1.25 |
| SIVA1 | 1.00 |
| CCND1 | 1.25 |
| CD38 | 0.62 |
| JUN | 1.07 |
| KIAA0930 | 1.31 |
| LGALS1 | 0.90 |
| INS | Undetected |
| ALDH2 | 0.68 |
|   | Undetected |
| HSPB1 | 1.22 |
| CYC1 | 0.86 |
| FNTA | 2.10 |
| NOL3 | 0.83 |
| SLC16A3 | 0.72 |
| DEXI | 1.02 |
| SORCS1 | 0.85 |
| MYL1 | 0.84 |
| TCAP | 1.01 |
| VDAC3 | 1.18 |
| SRRT | 2.22 |
| PACSIN3 | 0.80 |
| FBXO32 | 0.87 |
| COX7B | 1.20 |
| GLRX2 | 1.38 |
| SYNGR1 | 0.79 |
| CTSL | 5.23 |
| TBC1D22A | 1.32 |
| KIAA0368 | 1.10 |
| DYNC1H1 | 0.88 |
| CTNNA3 | 0.62 |
| PREPL | 1.73 |
| OSBP | 1.08 |
| PSME1 | 1.41 |
| LRP4 | 0.79 |
| DYX1C1 | 1.14 |
| IKBKB | 1.64 |
| LIAS | 0.86 |
| MFAP4 | 0.59 |
| AKR1C2;AKR1C1 | 1.15 |
| CDK11B;CDK11A | 1.17 |
| CALCOCO2 | 0.80 |
| ADK | 1.39 |
| CLIP1 | 0.99 |
| ACO2 | 0.84 |
| CTSV | Undetected |
| ATP5O | 0.85 |
| COX5B | 0.90 |
| PSMB1 | 1.48 |
| PSMD7 | 1.28 |
| SRSF2 | 2.27 |
| FBP2 | 0.59 |
| NDUFB8 | 0.81 |
| RTN3 | 1.14 |
| MAN2C1 | 1.13 |
| TXN2 | 0.79 |
| ERAP1 | 1.16 |
| P2RX5;P2RX5 | 4.94 |
| MARS2 | 1.82 |
| FADD | 1.81 |
| CAPN3 | 1.09 |
| ACTA1 | 1.11 |
| ANXA7 | 1.20 |
| UQCRB | 0.85 |
| CHAF1B | 0.96 |
| PRDX1 | 1.29 |
| PPARD | 2.29 |
| PPP2R4 | 1.19 |
| TECR | 0.73 |
| ALDOA | 0.79 |
| RPL38 | 1.06 |
| EIF4EBP1 | 1.06 |
| CDK2 | 3.19 |
| CYBA | 1.51 |
| HMBS | 1.00 |
| CHI3L1 | 84.44 |
| AARS | 1.13 |
| KALRN | 1.60 |
| DLG5 | 2.65 |
| KMT2A | 1.26 |
| UQCRFS1 | 0.67 |
| TOX4 | 1.33 |
| CCR10 | 1.52 |
| CDK2AP2 | 2.71 |
| ANP32B | 1.81 |
| NAP1L1 | 1.51 |
| PRPS1 | 1.84 |
| MYH4 | 0.69 |
| PKM | 1.06 |
| NFKB1 | 1.79 |
| EIF3K | 1.35 |
| FOXO3 | 1.18 |
| NSFL1C | 1.13 |
| ZFAND5 | 2.24 |
| ATP5G1 | 0.89 |
| EIF2S2 | Undetected |
| PLA2G12A | 0.76 |
| MKRN1 | 1.35 |
| SYNGR2 | 1.77 |
| LDHA | 1.66 |
| POLRMT | 1.07 |
| GPC1 | 1.12 |
| CLCN1 | 0.62 |
| LARGE | 1.31 |
| GBP2 | 1.91 |
| DLAT | 0.93 |
| MAPT | 0.80 |
| ATF4 | 1.49 |
| SOCS2 | 2.15 |
| SVIL | 0.73 |
| MDH2 | 1.34 |
| CTSB | 3.26 |
| ADARB1 | 0.70 |
| REL | 2.07 |
| DUSP13 | 0.80 |
| ATP5B | 1.35 |
| COX4I1 | 0.93 |
| GPI | 1.02 |
| AMPD3 | 5.57 |
| PYGM | 0.64 |
| BCHE | 0.69 |
| UQCRC2 | 0.83 |
| VCP | 1.40 |
| COL4A1 | 2.41 |
| PMVK | 0.75 |
| CASP10 | 1.11 |
| KCNN2 | 0.71 |
| HSPA1B | 2.33 |
| FOXO1 | 0.79 |
| IKBKE | 2.08 |
| RXRA | 0.78 |
| HRASLS | 0.83 |
| ETFB | 0.72 |
| ATP2B2 | 0.37 |
| RUVBL2 | 1.57 |
| ATP2A1 | 0.51 |
| RFX2 | 1.28 |
| DGKD | 3.06 |
| FANCA | 3.49 |
| TRIB2 | 1.32 |
| PSAP | 1.03 |
| DBI | 1.37 |
| PXMP4 | 0.75 |
| TPI1 | 0.84 |
| COX7C | 0.99 |
| RPL12 | 1.27 |
| EEF1G | 0.92 |
| PSME2 | 1.34 |
| CDK11B;CDK11A | 1.39 |
| HSPA5 | 3.72 |
| PPIA | 4.11 |
| HPRT1 | 2.62 |
| TGFB1 | 2.59 |