

Supplementary Table 1 HWE, MAF, and comparison of the allele frequencies

Gene	SNP	A1	A2	<i>P</i> for HWE	MAF	<i>P</i> for allele frequencies
SLC2A1	rs841858	T	G	1	0.14	0.015
SLC2A1	rs3754219	C	A	0.836	0.43	0.581
SLC2A1	rs841853	A	C	0.211	0.20	0.814
SLC2A1	rs841847	T	C	0.307	0.13	0.159
SLC2A1	rs1385129	A	G	1	<0.01	-
SLC2A1	rs7512565	T	C	0.773	0.20	0.122
SLC2A1	rs2297977	T	G	0.087	0.19	0.016
SLC2A1	rs12565724	-	-	-	-	-
STAT1	rs3771300	G	T	0.082	0.30	0.658
STAT1	rs1914408	T	C	0.018	0.30	0.176
STAT1	rs2066804	A	G	0.064	0.46	0.707
STAT1	rs1547550	C	G	1	0.10	0.042
STAT1	rs2280232	C	A	0.111	0.15	0.956
STAT1	rs34997637	G	A	0.296	0.50	0.016
STAT1	rs12693591	A	C	1	0.28	0.866
STAT1	rs10173099	C	T	0.818	0.37	0.083
STAT1	rs2066802	G	A	0.787	0.26	0.459
STAT1	rs10208033	T	C	0.346	0.36	0.107
STAT1	rs1467199	G	C	0.304	0.48	0.386
CTNNB1	rs3864004	A	G	0.289	0.25	0.764
CTNNB1	rs75288535	G	A	0.531	0.19	0.456
CTNNB1	rs77156365	A	G	1	<0.01	-
CTNNB1	rs1798802	A	G	0.342	0.31	0.875
CTNNB1	rs11564465	T	C	0.344	0.22	0.408
CTNNB1	rs4135385	A	G	0.681	0.49	0.197
CTNNB1	rs2293303	T	C	0.591	0.12	0.528
SERPINE1	rs2227631	A	G	0.295	0.40	0.778
SERPINE1	rs1799889	-	G	1	<0.01	-
SERPINE1	rs6092	A	G	0.451	0.09	0.657
SERPINE1	rs6090	A	G	1	0.02	0.637
SERPINE1	rs118134071	T	C	1	<0.01	-
SERPINE1	rs2227667	G	A	0.148	0.44	0.833
SERPINE1	rs2227692	T	C	0.013	0.35	0.967
SERPINE1	rs7242	G	T	0.839	0.50	0.756
DKK1	rs11001553	T	C	1	0.09	0.946
DKK1	rs2241529	G	A	1	0.32	0.919
DKK1	rs1569198	G	A	1	0.23	0.927
IFNG	rs2069717	-	A	1	<0.01	-
IFNG	rs1861494	C	T	0.284	0.38	0.331
IFNG	rs2430561	A	T	1	0.13	0.690
IFNG	rs2069709	-	C	1	<0.01	-

IFNG	rs2069707	-	G	1	<0.01	-
IFNG	rs2069705	A	G	0.290	0.18	0.984
HIF1A	rs2301104	C	G	1	0.05	0.829
HIF1A	rs72714570	G	C	1	0.15	0.487
HIF1A	rs1957757	T	C	0.005	0.02	-
HIF1A	rs41508050	-	C	1	<0.01	-
HIF1A	rs116908431	-	-	-	-	-
HIF1A	rs2301113	C	A	0.522	0.38	0.905
HIF1A	rs34005929	-	G	1	<0.01	-
HIF1A	rs11549465	T	C	1	0.06	0.118
HIF1A	rs2057482	T	C	1	0.21	0.281

Supplementary Table 2 Comparison of the genotype distribution by three genetic models

Gene	SNP	A1	A2	TEST	AFF	UNAFF	<i>P</i> for genotypes
SLC2A1	rs841858	T	G	Genotypic	3/27/57	1/17/77	NA
SLC2A1	rs841858	T	G	Dominant	30/57	18/77	NA
SLC2A1	rs841858	T	G	Recessive	3/84	1/94	NA
SLC2A1	rs3754219	C	A	Genotypic	13/46/27	18/49/28	0.789
SLC2A1	rs3754219	C	A	Dominant	59/27	67/28	0.779
SLC2A1	rs3754219	C	A	Recessive	13/73	18/77	0.495
SLC2A1	rs841853	A	C	Genotypic	4/26/57	6/27/62	NA
SLC2A1	rs841853	A	C	Dominant	30/57	33/62	NA
SLC2A1	rs841853	A	C	Recessive	4/83	6/89	NA
SLC2A1	rs841847	T	C	Genotypic	4/20/63	2/17/76	NA
SLC2A1	rs841847	T	C	Dominant	24/63	19/76	NA
SLC2A1	rs841847	T	C	Recessive	4/83	2/93	NA
SLC2A1	rs7512565	T	C	Genotypic	1/27/59	4/36/55	NA
SLC2A1	rs7512565	T	C	Dominant	28/59	40/55	NA
SLC2A1	rs7512565	T	C	Recessive	1/86	4/91	NA
SLC2A1	rs2297977	T	G	Genotypic	6/30/51	4/19/72	NA
SLC2A1	rs2297977	T	G	Dominant	36/51	23/72	NA
SLC2A1	rs2297977	T	G	Recessive	6/81	4/91	NA
STAT1	rs3771300	G	T	Genotypic	9/37/41	12/32/51	0.466
STAT1	rs3771300	G	T	Dominant	46/41	44/51	0.377
STAT1	rs3771300	G	T	Recessive	9/78	12/83	0.630
STAT1	rs1914408	T	C	Genotypic	9/41/37	12/28/55	0.048
STAT1	rs1914408	T	C	Dominant	50/37	40/55	0.038
STAT1	rs1914408	T	C	Recessive	9/78	12/83	0.630
STAT1	rs2066804	A	G	Genotypic	19/41/27	26/38/31	0.569
STAT1	rs2066804	A	G	Dominant	60/27	64/31	0.817
STAT1	rs2066804	A	G	Recessive	19/68	26/69	0.388
STAT1	rs1547550	C	G	Genotypic	2/19/66	0/13/82	NA
STAT1	rs1547550	C	G	Dominant	21/66	13/82	NA
STAT1	rs1547550	C	G	Recessive	2/85	0/95	NA
STAT1	rs2280232	C	A	Genotypic	0/26/61	4/20/71	NA
STAT1	rs2280232	C	A	Dominant	26/61	24/71	NA
STAT1	rs2280232	C	A	Recessive	0/87	4/91	NA
STAT1	rs34997637	G	A	Genotypic	29/40/18	21/41/33	0.068
STAT1	rs34997637	G	A	Dominant	69/18	62/33	0.035
STAT1	rs34997637	G	A	Recessive	29/58	21/74	0.090
STAT1	rs12693591	A	C	Genotypic	5/39/43	7/38/50	0.770
STAT1	rs12693591	A	C	Dominant	44/43	45/50	0.666
STAT1	rs12693591	A	C	Recessive	5/82	7/88	0.660
STAT1	rs10173099	C	T	Genotypic	17/39/31	11/41/43	0.230
STAT1	rs10173099	C	T	Dominant	56/31	52/43	0.186
STAT1	rs10173099	C	T	Recessive	17/70	11/84	0.137

STAT1	rs2066802	G	A	Genotypic	7/35/45	5/37/53	0.708
STAT1	rs2066802	G	A	Dominant	42/45	42/53	0.583
STAT1	rs2066802	G	A	Recessive	7/80	5/90	0.450
STAT1	rs10208033	T	C	Genotypic	13/44/30	12/37/46	0.160
STAT1	rs10208033	T	C	Dominant	57/30	49/46	0.057
STAT1	rs10208033	T	C	Recessive	13/74	12/83	0.651
STAT1	rs1467199	G	C	Genotypic	19/42/26	27/42/26	0.594
STAT1	rs1467199	G	C	Dominant	61/26	69/26	0.707
STAT1	rs1467199	G	C	Recessive	19/68	27/68	0.307
CTNNB1	rs3864004	A	G	Genotypic	6/30/50	4/41/50	NA
CTNNB1	rs3864004	A	G	Dominant	36/50	45/50	NA
CTNNB1	rs3864004	A	G	Recessive	6/80	4/91	NA
CTNNB1	rs75288535	G	A	Genotypic	7/16/63	5/29/61	0.159
CTNNB1	rs75288535	G	A	Dominant	23/63	34/61	0.191
CTNNB1	rs75288535	G	A	Recessive	7/79	5/90	0.437
CTNNB1	rs1798802	A	G	Genotypic	9/35/42	7/46/42	0.522
CTNNB1	rs1798802	A	G	Dominant	44/42	53/42	0.533
CTNNB1	rs1798802	A	G	Recessive	9/77	7/88	0.464
CTNNB1	rs11564465	T	C	Genotypic	6/30/51	2/35/58	NA
CTNNB1	rs11564465	T	C	Dominant	36/51	37/58	NA
CTNNB1	rs11564465	T	C	Recessive	6/81	2/93	NA
CTNNB1	rs4135385	A	G	Genotypic	18/41/26	27/45/23	0.445
CTNNB1	rs4135385	A	G	Dominant	59/26	72/23	0.337
CTNNB1	rs4135385	A	G	Recessive	18/67	27/68	0.263
CTNNB1	rs2293303	T	C	Genotypic	3/16/68	0/20/75	NA
CTNNB1	rs2293303	T	C	Dominant	19/68	20/75	NA
CTNNB1	rs2293303	T	C	Recessive	3/84	0/95	NA
SERPINE1	rs2227631	A	G	Genotypic	16/36/35	18/41/36	0.949
SERPINE1	rs2227631	A	G	Dominant	52/35	59/36	0.747
SERPINE1	rs2227631	A	G	Recessive	16/71	18/77	0.923
SERPINE1	rs6092	A	G	Genotypic	1/14/72	1/13/81	NA
SERPINE1	rs6092	A	G	Dominant	15/72	14/81	NA
SERPINE1	rs6092	A	G	Recessive	1/86	1/94	NA
SERPINE1	rs6090	A	G	Genotypic	0/5/82	0/4/91	NA
SERPINE1	rs6090	A	G	Dominant	5/82	4/91	NA
SERPINE1	rs6090	A	G	Recessive	0/87	0/95	NA
SERPINE1	rs2227667	G	A	Genotypic	19/39/29	14/54/27	0.234
SERPINE1	rs2227667	G	A	Dominant	58/29	68/27	0.473
SERPINE1	rs2227667	G	A	Recessive	19/68	14/81	0.214
SERPINE1	rs2227692	T	C	Genotypic	11/39/37	6/55/34	0.137
SERPINE1	rs2227692	T	C	Dominant	50/37	61/34	0.352
SERPINE1	rs2227692	T	C	Recessive	11/76	6/89	0.143
SERPINE1	rs7242	G	T	Genotypic	23/42/22	22/49/24	0.862
SERPINE1	rs7242	G	T	Dominant	65/22	71/24	0.997

SERPINE1	rs7242	G	T	Recessive	23/64	22/73	0.609
DKK1	rs11001553	T	C	Genotypic	0/15/72	0/16/79	NA
DKK1	rs11001553	T	C	Dominant	15/72	16/79	NA
DKK1	rs11001553	T	C	Recessive	0/87	0/95	NA
DKK1	rs2241529	G	A	Genotypic	8/39/40	10/41/44	0.946
DKK1	rs2241529	G	A	Dominant	47/40	51/44	0.964
DKK1	rs2241529	G	A	Recessive	8/79	10/85	0.764
DKK1	rs1569198	G	A	Genotypic	4/33/50	5/34/56	NA
DKK1	rs1569198	G	A	Dominant	37/50	39/56	NA
DKK1	rs1569198	G	A	Recessive	4/83	5/90	NA
IFNG	rs1861494	C	T	Genotypic	10/41/36	18/40/37	0.375
IFNG	rs1861494	C	T	Dominant	51/36	58/37	0.738
IFNG	rs1861494	C	T	Recessive	10/77	18/77	0.164
IFNG	rs2430561	A	T	Genotypic	0/20/65	1/23/71	NA
IFNG	rs2430561	A	T	Dominant	20/65	24/71	NA
IFNG	rs2430561	A	T	Recessive	0/85	1/94	NA
IFNG	rs2069705	A	G	Genotypic	3/25/59	1/32/62	NA
IFNG	rs2069705	A	G	Dominant	28/59	33/62	NA
IFNG	rs2069705	A	G	Recessive	3/84	1/94	NA
HIF1A	rs2301104	C	G	Genotypic	0/9/77	0/9/86	NA
HIF1A	rs2301104	C	G	Dominant	9/77	9/86	NA
HIF1A	rs2301104	C	G	Recessive	0/86	0/95	NA
HIF1A	rs72714570	G	C	Genotypic	1/21/65	2/26/67	NA
HIF1A	rs72714570	G	C	Dominant	22/65	28/67	NA
HIF1A	rs72714570	G	C	Recessive	1/86	2/93	NA
HIF1A	rs2301113	C	A	Genotypic	13/41/33	15/42/38	0.925
HIF1A	rs2301113	C	A	Dominant	54/33	57/38	0.775
HIF1A	rs2301113	C	A	Recessive	13/74	15/80	0.874
HIF1A	rs11549465	T	C	Genotypic	0/14/72	0/8/87	NA
HIF1A	rs11549465	T	C	Dominant	14/72	8/87	NA
HIF1A	rs11549465	T	C	Recessive	0/86	0/95	NA
HIF1A	rs2057482	T	C	Genotypic	3/35/49	3/30/62	NA
HIF1A	rs2057482	T	C	Dominant	38/49	33/62	NA
HIF1A	rs2057482	T	C	Recessive	3/84	3/92	NA

Supplementary Table 3A The association between each SNP and capsule formation stratified by age

≤ 60 years

> 60 years

SNP (genotype)	OR	95%CI	P value	SNP (genotype)	OR	95%CI	P value
SLC2A1 rs841858 (GT vs. GG)	3.23	1.03-10.08	0.044	SLC2A1 rs841858 (GT vs. GG)	1.70	0.68-4.26	0.257
SLC2A1 rs841858 (TT vs. GG)	2.69	0.23-30.95	0.428	SLC2A1 rs841858 (TT vs. GG)	2197045786.28	NA	1.000
SLC2A1 rs3754219 (CA vs. AA)	0.76	0.29-1.98	0.577	SLC2A1 rs3754219 (CA vs. AA)	1.21	0.47-3.14	0.689
SLC2A1 rs3754219 (CC vs. AA)	0.64	0.17-2.40	0.502	SLC2A1 rs3754219 (CC vs. AA)	0.85	0.26-2.81	0.790
SLC2A1 rs841853 (CA vs. CC)	0.91	0.37-2.28	0.844	SLC2A1 rs841853 (CA vs. CC)	1.20	0.48-3.02	0.697
SLC2A1 rs841853 (AA vs. CC)	1.60	0.25-10.21	0.621	SLC2A1 rs841853 (AA vs. CC)	0.28	0.03-2.66	0.267
SLC2A1 rs841847 (TC vs. CC)	1.11	0.40-3.12	0.837	SLC2A1 rs841847 (TC vs. CC)	1.82	0.65-5.11	0.258
SLC2A1 rs841847 (TT vs. CC)	2.23	0.19-25.66	0.520	SLC2A1 rs841847 (TT vs. CC)	2.64	0.23-30.63	0.437
SLC2A1 rs7512565 (CT vs. CC)	0.63	0.27-1.47	0.284	SLC2A1 rs7512565 (CT vs. CC)	0.78	0.31-1.93	0.587
SLC2A1 rs7512565 (TT vs. CC)	0.00	NA	0.999	SLC2A1 rs7512565 (TT vs. CC)	1.04	0.06-17.38	0.981
SLC2A1 rs2297977 (GT vs. GG)	4.86	1.59-14.83	0.005	SLC2A1 rs2297977 (GT vs. GG)	1.29	0.52-3.22	0.583
SLC2A1 rs2297977 (TT vs. GG)	1.52	0.29-8.09	0.624	SLC2A1 rs2297977 (TT vs. GG)	3.88	0.38-39.63	0.254
STAT1 rs3771300 (GT vs. TT)	1.30	0.55-3.10	0.555	STAT1 rs3771300 (GT vs. TT)	1.60	0.65-3.96	0.309
STAT1 rs3771300 (GG vs. TT)	1.47	0.40-5.48	0.564	STAT1 rs3771300 (GG vs. TT)	0.54	0.12-2.38	0.417
STAT1 rs1914408 (CT vs. CC)	1.89	0.79-4.53	0.153	STAT1 rs1914408 (CT vs. CC)	2.50	0.98-6.37	0.055
STAT1 rs1914408 (TT vs. CC)	0.66	0.17-2.51	0.540	STAT1 rs1914408 (TT vs. CC)	2.08	0.49-8.78	0.317
STAT1 rs2066804 (AG vs. GG)	0.98	0.38-2.54	0.967	STAT1 rs2066804 (AG vs. GG)	1.57	0.59-4.18	0.362
STAT1 rs2066804 (AA vs. GG)	0.62	0.21-1.84	0.390	STAT1 rs2066804 (AA vs. GG)	1.16	0.37-3.66	0.801
STAT1 rs1547550 (CG vs. GG)	1.36	0.42-4.39	0.612	STAT1 rs1547550 (CG vs. GG)	2.31	0.81-6.58	0.119
STAT1 rs1547550 (CC vs. GG)	1877443736.29	NA	0.999	STAT1 rs1547550 (CC vs. GG)	-	-	-
STAT1 rs2280232 (CA vs. AA)	1.49	0.56-3.97	0.425	STAT1 rs2280232 (CA vs. AA)	1.56	0.61-3.98	0.357
STAT1 rs2280232 (CC vs. AA)	0.00	NA	0.999	STAT1 rs2280232 (CC vs. AA)	0.00	NA	0.999
STAT1 rs34997637 (GA vs. AA)	1.35	0.52-3.55	0.541	STAT1 rs34997637 (GA vs. AA)	2.50	0.84-7.48	0.101
STAT1 rs34997637 (GG vs. AA)	3.27	1.05-10.16	0.040	STAT1 rs34997637 (GG vs. AA)	2.14	0.66-6.98	0.206
STAT1 rs12693591 (CA vs. CC)	1.01	0.44-2.35	0.977	STAT1 rs12693591 (CA vs. CC)	1.41	0.59-3.39	0.439
STAT1 rs12693591 (AA vs. CC)	2.25	0.38-13.40	0.373	STAT1 rs12693591 (AA vs. CC)	0.24	0.03-2.26	0.213
STAT1 rs10173099 (TC vs. TT)	1.05	0.44-2.51	0.921	STAT1 rs10173099 (TC vs. TT)	1.70	0.67-4.33	0.265
STAT1 rs10173099 (CC vs. TT)	3.19	0.86-11.88	0.083	STAT1 rs10173099 (CC vs. TT)	1.54	0.44-5.42	0.502
STAT1 rs2066802 (AG vs. AA)	1.07	0.46-2.49	0.883	STAT1 rs2066802 (AG vs. AA)	1.17	0.49-2.81	0.727
STAT1 rs2066802 (GG vs. AA)	1.50	0.30-7.39	0.618	STAT1 rs2066802 (GG vs. AA)	1.86	0.28-12.16	0.519
STAT1 rs10208033 (TC vs. CC)	1.89	0.79-4.53	0.153	STAT1 rs10208033 (TC vs. CC)	1.75	0.70-4.41	0.235
STAT1 rs10208033 (TT vs. CC)	2.19	0.59-8.09	0.241	STAT1 rs10208033 (TT vs. CC)	1.29	0.36-4.64	0.701
STAT1 rs1467199 (GC vs. CC)	0.65	0.24-1.76	0.396	STAT1 rs1467199 (GC vs. CC)	1.59	0.59-4.24	0.357
STAT1 rs1467199 (GG vs. CC)	0.92	0.30-2.82	0.879	STAT1 rs1467199 (GG vs. CC)	0.46	0.14-1.54	0.208
CTNNB1 rs3864004 (GA vs. GG)	0.81	0.35-1.87	0.622	CTNNB1 rs3864004 (GA vs. GG)	0.65	0.27-1.60	0.347
CTNNB1 rs3864004 (AA vs. GG)	1.50	0.23-9.73	0.671	CTNNB1 rs3864004 (AA vs. GG)	1.50	0.23-9.80	0.672
CTNNB1 rs75288535 (GA vs. AA)	0.74	0.29-1.89	0.524	CTNNB1 rs75288535 (GA vs. AA)	0.36	0.12-1.06	0.064
CTNNB1 rs75288535 (GG vs. AA)	3.09	0.31-31.24	0.339	CTNNB1 rs75288535 (GG vs. AA)	0.90	0.21-3.96	0.889
CTNNB1 rs1798802 (GA vs. GG)	0.89	0.38-2.07	0.792	CTNNB1 rs1798802 (GA vs. GG)	0.64	0.26-1.59	0.338
CTNNB1 rs1798802 (AA vs. GG)	1.39	0.28-6.87	0.687	CTNNB1 rs1798802 (AA vs. GG)	1.18	0.27-5.15	0.825
CTNNB1 rs11564465 (TC vs. CC)	1.50	0.65-3.45	0.343	CTNNB1 rs11564465 (TC vs. CC)	0.57	0.22-1.46	0.239

CTNNB1 rs11564465 (TT vs. CC)	2177379136.02	NA	0.999
CTNNB1 rs4135385 (AG vs. GG)	1.12	0.44-2.83	0.813
CTNNB1 rs4135385 (AA vs. GG)	0.82	0.28-2.38	0.712
CTNNB1 rs2293303 (CT vs. CC)	0.86	0.32-2.33	0.772
CTNNB1 rs2293303 (TT vs. CC)	1705223445.23	NA	1.000
SERPINE1 rs2227631 (GA vs. GG)	1.06	0.43-2.61	0.908
SERPINE1 rs2227631 (AA vs. GG)	1.31	0.38-4.52	0.674
SERPINE1 rs6092 (GA vs. GG)	2.20	0.74-6.55	0.157
SERPINE1 rs6092 (AA vs. GG)	0.00	NA	1.000
SERPINE1 rs6090 (AG vs. GG)	0.25	0.03-2.33	0.223
SERPINE1 rs2227667 (GA vs. AA)	0.75	0.30-1.87	0.537
SERPINE1 rs2227667 (GG vs. AA)	1.67	0.48-5.76	0.419
SERPINE1 rs2227692 (TC vs. CC)	0.84	0.36-1.94	0.680
SERPINE1 rs2227692 (TT vs. CC)	0.71	0.14-3.60	0.683
SERPINE1 rs7242 (GT vs. TT)	0.77	0.28-2.13	0.614
SERPINE1 rs7242 (GG vs. TT)	1.25	0.40-3.87	0.698
DKK1 rs11001553 (CT vs. CC)	0.36	0.09-1.44	0.148
DKK1 rs2241529 (GA vs. AA)	0.69	0.29-1.60	0.383
DKK1 rs2241529 (GG vs. AA)	0.70	0.17-2.95	0.627
DKK1 rs1569198 (GA vs. AA)	0.94	0.41-2.15	0.874
DKK1 rs1569198 (GG vs. AA)	1.04	0.14-7.93	0.971
IFNG rs1861494 (TC vs. TT)	0.94	0.39-2.26	0.895
IFNG rs1861494 (CC vs. TT)	1.47	0.43-4.97	0.538
IFNG rs2430561 (TA vs. TT)	0.79	0.31-1.97	0.607
IFNG rs2430561 (AA vs. TT)	-	-	-
IFNG rs2069705 (AG vs. GG)	0.78	0.33-1.84	0.568
IFNG rs2069705 (AA vs. GG)	2.00	0.17-23.25	0.580
HIF1A rs2301104 (GC vs. GG)	1.50	0.32-7.08	0.612
HIF1A rs72714570 (GC vs. CC)	1.06	0.41-2.75	0.909
HIF1A rs72714570 (GG vs. CC)	0.00	NA	1.000
HIF1A rs2301113 (CA vs. AA)	1.06	0.44-2.56	0.905
HIF1A rs2301113 (CC vs. AA)	1.50	0.47-4.84	0.497
HIF1A rs11549465 (TC vs. CC)	4.82	1.25-18.59	0.022
HIF1A rs2057482 (CT vs. CC)	2.07	0.86-4.98	0.104
HIF1A rs2057482 (TT vs. CC)	2.13	0.33-13.70	0.428

CTNNB1 rs11564465 (TT vs. CC)	1.45	0.22-9.34	0.698
CTNNB1 rs4135385 (AG vs. GG)	0.49	0.15-1.55	0.223
CTNNB1 rs4135385 (AA vs. GG)	0.34	0.09-1.30	0.116
CTNNB1 rs2293303 (CT vs. CC)	0.90	0.30-2.69	0.849
CTNNB1 rs2293303 (TT vs. CC)	1867892787.05	NA	0.999
SERPINE1 rs2227631 (GA vs. GG)	0.76	0.29-2.02	0.585
SERPINE1 rs2227631 (AA vs. GG)	0.69	0.23-2.08	0.512
SERPINE1 rs6092 (GA vs. GG)	0.45	0.11-1.88	0.275
SERPINE1 rs6092 (AA vs. GG)	1702797807.33	NA	1.000
SERPINE1 rs6090 (AG vs. GG)	2008428183.00	NA	0.999
SERPINE1 rs2227667 (GA vs. AA)	0.59	0.22-1.58	0.295
SERPINE1 rs2227667 (GG vs. AA)	0.96	0.28-3.28	0.954
SERPINE1 rs2227692 (TC vs. CC)	0.50	0.20-1.26	0.140
SERPINE1 rs2227692 (TT vs. CC)	3.50	0.64-19.30	0.150
SERPINE1 rs7242 (GT vs. TT)	1.13	0.42-3.05	0.809
SERPINE1 rs7242 (GG vs. TT)	0.95	0.28-3.23	0.929
DKK1 rs11001553 (CT vs. CC)	1.97	0.71-5.43	0.193
DKK1 rs2241529 (GA vs. AA)	1.68	0.68-4.11	0.258
DKK1 rs2241529 (GG vs. AA)	1.15	0.27-4.96	0.851
DKK1 rs1569198 (GA vs. AA)	1.30	0.52-3.21	0.577
DKK1 rs1569198 (GG vs. AA)	0.81	0.12-5.22	0.821
IFNG rs1861494 (TC vs. TT)	1.14	0.45-2.88	0.790
IFNG rs1861494 (CC vs. TT)	0.16	0.03-0.82	0.028
IFNG rs2430561 (TA vs. TT)	1.20	0.42-3.41	0.732
IFNG rs2430561 (AA vs. TT)	0.00	NA	1.000
IFNG rs2069705 (AG vs. GG)	0.87	0.34-2.21	0.765
IFNG rs2069705 (AA vs. GG)	1782592930.04	NA	1.000
HIF1A rs2301104 (GC vs. GG)	0.93	0.26-3.30	0.905
HIF1A rs72714570 (GC vs. CC)	0.67	0.26-1.72	0.401
HIF1A rs72714570 (GG vs. CC)	1.00	0.06-16.74	1.000
HIF1A rs2301113 (CA vs. AA)	1.19	0.48-2.97	0.713
HIF1A rs2301113 (CC vs. AA)	0.57	0.14-2.27	0.422
HIF1A rs11549465 (TC vs. CC)	0.67	0.15-2.98	0.593
HIF1A rs2057482 (CT vs. CC)	1.05	0.44-2.52	0.905
HIF1A rs2057482 (TT vs. CC)	0.00	NA	1.000

Supplementary Table 3B The association between each SNP and capsule formation stratified by gender

Male

SNP (genotype)	OR	95%CI	P value
SLC2A1 rs841858 (GT vs. GG)	2.34	1.10-4.99	0.028
SLC2A1 rs841858 (TT vs. GG)	2461675951.01	NA	0.999
SLC2A1 rs3754219 (CA vs. AA)	0.74	0.35-1.55	0.420
SLC2A1 rs3754219 (CC vs. AA)	0.54	0.20-1.43	0.214
SLC2A1 rs841853 (CA vs. CC)	0.94	0.45-1.93	0.857
SLC2A1 rs841853 (AA vs. CC)	1.58	0.34-7.42	0.565
SLC2A1 rs841847 (TC vs. CC)	1.28	0.56-2.93	0.559
SLC2A1 rs841847 (TT vs. CC)	3.84	0.39-38.04	0.250
SLC2A1 rs7512565 (CT vs. CC)	0.85	0.43-1.68	0.635
SLC2A1 rs7512565 (TT vs. CC)	0.00	NA	0.999
SLC2A1 rs2297977 (GT vs. GG)	2.68	1.27-5.64	0.010
SLC2A1 rs2297977 (TT vs. GG)	3.30	0.58-18.90	0.180
STAT1 rs3771300 (GT vs. TT)	1.35	0.67-2.74	0.400
STAT1 rs3771300 (GG vs. TT)	0.91	0.31-2.65	0.866
STAT1 rs1914408 (CT vs. CC)	2.09	1.03-4.27	0.043
STAT1 rs1914408 (TT vs. CC)	0.99	0.34-2.84	0.981
STAT1 rs2066804 (AG vs. GG)	1.33	0.62-2.88	0.464
STAT1 rs2066804 (AA vs. GG)	0.78	0.33-1.87	0.579
STAT1 rs1547550 (CG vs. GG)	2.25	0.94-5.38	0.068
STAT1 rs1547550 (CC vs. GG)	2274852329.73	NA	0.999
STAT1 rs2280232 (CA vs. AA)	1.48	0.70-3.13	0.309
STAT1 rs2280232 (CC vs. AA)	0.00	NA	0.999
STAT1 rs34997637 (GA vs. AA)	2.03	0.90-4.60	0.088
STAT1 rs34997637 (GG vs. AA)	3.21	1.29-8.00	0.012
STAT1 rs12693591 (CA vs. CC)	1.37	0.69-2.72	0.366
STAT1 rs12693591 (AA vs. CC)	0.88	0.23-3.37	0.855
STAT1 rs10173099 (TC vs. TT)	1.81	0.88-3.73	0.108
STAT1 rs10173099 (CC vs. TT)	2.82	1.04-7.60	0.041
STAT1 rs2066802 (AG vs. AA)	1.19	0.60-2.36	0.627
STAT1 rs2066802 (GG vs. AA)	1.28	0.34-4.76	0.715
STAT1 rs10208033 (TC vs. CC)	2.53	1.24-5.20	0.011
STAT1 rs10208033 (TT vs. CC)	2.17	0.77-6.13	0.143
STAT1 rs1467199 (GC vs. CC)	0.72	0.32-1.60	0.419
STAT1 rs1467199 (GG vs. CC)	0.44	0.18-1.09	0.074
CTNNB1 rs3864004 (GA vs. GG)	0.69	0.35-1.38	0.295
CTNNB1 rs3864004 (AA vs. GG)	1.03	0.24-4.38	0.973
CTNNB1 rs75288535 (GA vs. AA)	0.68	0.31-1.50	0.336
CTNNB1 rs75288535 (GG vs. AA)	2.30	0.54-9.70	0.257
CTNNB1 rs1798802 (GA vs. GG)	0.61	0.31-1.22	0.162
CTNNB1 rs1798802 (AA vs. GG)	0.94	0.28-3.22	0.925
CTNNB1 rs11564465 (TC vs. CC)	0.89	0.44-1.78	0.737

Female

SNP (genotype)	OR	95%CI	P value
SLC2A1 rs841858 (GT vs. GG)	1.73	0.27-11.05	0.561
SLC2A1 rs841858 (TT vs. GG)	0.87	0.05-15.28	0.922
SLC2A1 rs3754219 (CA vs. AA)	2.84	0.63-12.89	0.175
SLC2A1 rs3754219 (CC vs. AA)	5.25	0.40-68.95	0.207
SLC2A1 rs841853 (CA vs. CC)	1.80	0.37-8.75	0.469
SLC2A1 rs841853 (AA vs. CC)	0.00	NA	0.999
SLC2A1 rs841847 (TC vs. CC)	1.85	0.38-9.08	0.451
SLC2A1 rs841847 (TT vs. CC)	0.92	0.05-16.46	0.957
SLC2A1 rs7512565 (CT vs. CC)	0.31	0.07-1.36	0.120
SLC2A1 rs7512565 (TT vs. CC)	0.53	0.03-9.71	0.671
SLC2A1 rs2297977 (GT vs. GG)	1.05	0.19-5.69	0.957
SLC2A1 rs2297977 (TT vs. GG)	0.79	0.10-6.50	0.823
STAT1 rs3771300 (GT vs. TT)	1.67	0.41-6.82	0.477
STAT1 rs3771300 (GG vs. TT)	1.00	0.11-8.95	1.000
STAT1 rs1914408 (CT vs. CC)	2.50	0.60-10.34	0.206
STAT1 rs1914408 (TT vs. CC)	2.50	0.19-32.80	0.485
STAT1 rs2066804 (AG vs. GG)	0.96	0.23-4.10	0.961
STAT1 rs2066804 (AA vs. GG)	1.71	0.23-12.89	0.601
STAT1 rs1547550 (CG vs. GG)	0.77	0.13-4.43	0.765
STAT1 rs1547550 (CC vs. GG)	-	-	-
STAT1 rs2280232 (CA vs. AA)	1.71	0.35-8.37	0.505
STAT1 rs2280232 (CC vs. AA)	0.00	NA	1.000
STAT1 rs34997637 (GA vs. AA)	1.03	0.20-5.33	0.973
STAT1 rs34997637 (GG vs. AA)	0.96	0.16-5.64	0.964
STAT1 rs12693591 (CA vs. CC)	0.56	0.14-2.26	0.411
STAT1 rs12693591 (AA vs. CC)	0.56	0.03-10.93	0.699
STAT1 rs10173099 (TC vs. TT)	0.39	0.09-1.67	0.204
STAT1 rs10173099 (CC vs. TT)	0.75	0.09-6.04	0.787
STAT1 rs2066802 (AG vs. AA)	0.78	0.20-3.01	0.716
STAT1 rs2066802 (GG vs. AA)	1256480433.33	NA	0.999
STAT1 rs10208033 (TC vs. CC)	0.34	0.07-1.68	0.184
STAT1 rs10208033 (TT vs. CC)	0.38	0.05-3.00	0.355
STAT1 rs1467199 (GC vs. CC)	3.00	0.68-13.31	0.148
STAT1 rs1467199 (GG vs. CC)	9.00	0.81-100.14	0.074
CTNNB1 rs3864004 (GA vs. GG)	0.90	0.23-3.58	0.881
CTNNB1 rs3864004 (AA vs. GG)	1453927358.57	NA	0.999
CTNNB1 rs75288535 (GA vs. AA)	0.19	0.04-0.95	0.043
CTNNB1 rs75288535 (GG vs. AA)	0.22	0.02-2.83	0.244
CTNNB1 rs1798802 (GA vs. GG)	1.93	0.46-8.05	0.368
CTNNB1 rs1798802 (AA vs. GG)	3.86	0.33-45.57	0.284
CTNNB1 rs11564465 (TC vs. CC)	1.33	0.34-5.27	0.682

CTNNB1 rs11564465 (TT vs. CC)	2.34	0.41-13.45	0.340
CTNNB1 rs4135385 (AG vs. GG)	0.85	0.39-1.84	0.674
CTNNB1 rs4135385 (AA vs. GG)	0.50	0.20-1.26	0.140
CTNNB1 rs2293303 (CT vs. CC)	0.69	0.30-1.59	0.384
CTNNB1 rs2293303 (TT vs. CC)	1824888248.41	NA	0.999
SERPINE1 rs2227631 (GA vs. GG)	0.73	0.35-1.51	0.399
SERPINE1 rs2227631 (AA vs. GG)	0.57	0.23-1.41	0.226
SERPINE1 rs6092 (GA vs. GG)	1.51	0.61-3.74	0.379
SERPINE1 rs6092 (AA vs. GG)	-	-	-
SERPINE1 rs6090 (AG vs. GG)	0.58	0.10-3.25	0.533
SERPINE1 rs2227667 (GA vs. AA)	0.83	0.39-1.75	0.619
SERPINE1 rs2227667 (GG vs. AA)	1.92	0.72-5.16	0.196
SERPINE1 rs2227692 (TC vs. CC)	0.79	0.40-1.59	0.515
SERPINE1 rs2227692 (TT vs. CC)	2.01	0.60-6.76	0.261
SERPINE1 rs7242 (GT vs. TT)	0.69	0.31-1.54	0.368
SERPINE1 rs7242 (GG vs. TT)	0.85	0.35-2.11	0.730
DKK1 rs11001553 (CT vs. CC)	0.98	0.39-2.44	0.964
DKK1 rs2241529 (GA vs. AA)	1.01	0.51-2.01	0.983
DKK1 rs2241529 (GG vs. AA)	1.04	0.34-3.18	0.946
DKK1 rs1569198 (GA vs. AA)	1.14	0.57-2.28	0.720
DKK1 rs1569198 (GG vs. AA)	0.99	0.25-3.92	0.982
IFNG rs1861494 (TC vs. TT)	0.85	0.42-1.73	0.660
IFNG rs1861494 (CC vs. TT)	0.53	0.20-1.44	0.216
IFNG rs2430561 (TA vs. TT)	0.91	0.42-1.98	0.818
IFNG rs2430561 (AA vs. TT)	0.00	NA	1.000
IFNG rs2069705 (AG vs. GG)	0.89	0.44-1.80	0.744
IFNG rs2069705 (AA vs. GG)	2.31	0.20-26.34	0.500
HIF1A rs2301104 (GC vs. GG)	0.89	0.29-2.70	0.834
HIF1A rs72714570 (GC vs. CC)	0.91	0.43-1.91	0.796
HIF1A rs72714570 (GG vs. CC)	0.00	NA	0.999
HIF1A rs2301113 (CA vs. AA)	1.16	0.57-2.36	0.690
HIF1A rs2301113 (CC vs. AA)	0.72	0.27-1.90	0.502
HIF1A rs11549465 (TC vs. CC)	2.39	0.83-6.86	0.105
HIF1A rs2057482 (CT vs. CC)	1.22	0.61-2.46	0.569
HIF1A rs2057482 (TT vs. CC)	1.28	0.24-6.66	0.773

CTNNB1 rs11564465 (TT vs. CC)	1615474842.85	NA	0.999
CTNNB1 rs4135385 (AG vs. GG)	0.60	0.11-3.30	0.557
CTNNB1 rs4135385 (AA vs. GG)	0.90	0.13-6.08	0.914
CTNNB1 rs2293303 (CT vs. CC)	2.50	0.41-15.12	0.318
CTNNB1 rs2293303 (TT vs. CC)	1615474842.85	NA	1.000
SERPINE1 rs2227631 (GA vs. GG)	2.14	0.47-9.70	0.324
SERPINE1 rs2227631 (AA vs. GG)	2827080974.99	NA	0.999
SERPINE1 rs6092 (GA vs. GG)	0.47	0.07-3.26	0.445
SERPINE1 rs6092 (AA vs. GG)	0.71	0.04-12.43	0.812
SERPINE1 rs6090 (AG vs. GG)	1520446910.92	NA	0.999
SERPINE1 rs2227667 (GA vs. AA)	0.30	0.06-1.49	0.140
SERPINE1 rs2227667 (GG vs. AA)	0.25	0.03-1.82	0.171
SERPINE1 rs2227692 (TC vs. CC)	0.32	0.08-1.33	0.117
SERPINE1 rs2227692 (TT vs. CC)	0.91	0.07-12.52	0.943
SERPINE1 rs7242 (GT vs. TT)	3.00	0.58-15.61	0.192
SERPINE1 rs7242 (GG vs. TT)	5.00	0.58-42.80	0.142
DKK1 rs11001553 (CT vs. CC)	1.00	0.22-4.56	1.000
DKK1 rs2241529 (GA vs. AA)	1.03	0.26-4.17	0.966
DKK1 rs2241529 (GG vs. AA)	0.38	0.03-5.17	0.464
DKK1 rs1569198 (GA vs. AA)	0.82	0.22-3.06	0.765
DKK1 rs1569198 (GG vs. AA)	-	-	-
IFNG rs1861494 (TC vs. TT)	2.33	0.54-10.11	0.257
IFNG rs1861494 (CC vs. TT)	0.78	0.10-6.32	0.814
IFNG rs2430561 (TA vs. TT)	1.07	0.23-4.92	0.929
IFNG rs2430561 (AA vs. TT)	-	-	-
IFNG rs2069705 (AG vs. GG)	0.60	0.14-2.51	0.479
IFNG rs2069705 (AA vs. GG)	1153910602.04	NA	1.000
HIF1A rs2301104 (GC vs. GG)	2.65	0.25-28.24	0.420
HIF1A rs72714570 (GC vs. CC)	0.59	0.13-2.70	0.494
HIF1A rs72714570 (GG vs. CC)	1184681551.42	NA	1.000
HIF1A rs2301113 (CA vs. AA)	1.00	0.25-4.04	1.000
HIF1A rs2301113 (CC vs. AA)	1615474842.85	NA	0.999
HIF1A rs11549465 (TC vs. CC)	1.31	0.19-9.02	0.782
HIF1A rs2057482 (CT vs. CC)	2.69	0.68-10.65	0.159
HIF1A rs2057482 (TT vs. CC)	-	-	-

Supplementary Table 3C The association between each SNP and capsule formation stratified by liver cirrhosis

No

Yes

SNP (genotype)	OR	95%CI	<i>P</i> value
SLC2A1 rs841858 (GT vs. GG)	1.91	0.16-22.20	0.605
SLC2A1 rs841858 (TT vs. GG)	-	-	-
SLC2A1 rs3754219 (CA vs. AA)	0.29	0.03-3.37	0.324
SLC2A1 rs3754219 (CC vs. AA)	0.75	0.03-17.51	0.858
SLC2A1 rs841853 (CA vs. CC)	1615474842.85	NA	0.999
SLC2A1 rs841853 (AA vs. CC)	-	-	-
SLC2A1 rs841847 (TC vs. CC)	1292379874.28	NA	0.999
SLC2A1 rs841847 (TT vs. CC)	-	-	-
SLC2A1 rs7512565 (CT vs. CC)	0.30	0.04-2.11	0.227
SLC2A1 rs7512565 (TT vs. CC)	0.00	0-	1.000
SLC2A1 rs2297977 (GT vs. GG)	1.27	0.10-16.81	0.855
SLC2A1 rs2297977 (TT vs. GG)	1028029445.45	NA	1.000
STAT1 rs3771300 (GT vs. TT)	1.43	0.18-11.09	0.733
STAT1 rs3771300 (GG vs. TT)	2.14	0.17-27.10	0.556
STAT1 rs1914408 (CT vs. CC)	1.11	0.16-7.51	0.914
STAT1 rs1914408 (TT vs. CC)	2.00	0.15-26.73	0.600
STAT1 rs2066804 (AG vs. GG)	3.00	0.23-39.61	0.404
STAT1 rs2066804 (AA vs. GG)	0.60	0.08-4.40	0.615
STAT1 rs1547550 (CG vs. GG)	0.54	0.03-9.99	0.678
STAT1 rs1547550 (CC vs. GG)	-	-	-
STAT1 rs2280232 (CA vs. AA)	1.17	0.09-15.32	0.907
STAT1 rs2280232 (CC vs. AA)	-	-	-
STAT1 rs34997637 (GA vs. AA)	2.50	0.29-21.40	0.403
STAT1 rs34997637 (GG vs. AA)	7.50	0.62-90.65	0.113
STAT1 rs12693591 (CA vs. CC)	4.29	0.39-47.63	0.236
STAT1 rs12693591 (AA vs. CC)	1.71	0.12-23.94	0.689
STAT1 rs10173099 (TC vs. TT)	7.50	0.62-90.65	0.113
STAT1 rs10173099 (CC vs. TT)	7.50	0.62-90.65	0.113
STAT1 rs2066802 (AG vs. AA)	2.50	0.34-18.33	0.367
STAT1 rs2066802 (GG vs. AA)	1.67	0.12-24.26	0.708
STAT1 rs10208033 (TC vs. CC)	5.00	0.66-38.15	0.121
STAT1 rs10208033 (TT vs. CC)	2.50	0.16-38.60	0.512
STAT1 rs1467199 (GC vs. CC)	0.50	0.04-6.68	0.600
STAT1 rs1467199 (GG vs. CC)	0.25	0.02-3.34	0.295
CTNNB1 rs3864004 (GA vs. GG)	1.67	0.28-9.82	0.572
CTNNB1 rs3864004 (AA vs. GG)	-	-	-
CTNNB1 rs75288535 (GA vs. AA)	0.27	0.03-2.25	0.224
CTNNB1 rs75288535 (GG vs. AA)	0.80	0.06-11.50	0.870
CTNNB1 rs1798802 (GA vs. GG)	1.39	0.22-8.92	0.729
CTNNB1 rs1798802 (AA vs. GG)	1346229035.71	NA	0.999
CTNNB1 rs11564465 (TC vs. CC)	1.67	0.28-9.82	0.572

SNP (genotype)	OR	95%CI	<i>P</i> value
SLC2A1 rs841858 (GT vs. GG)	2.28	1.10-4.76	0.028
SLC2A1 rs841858 (TT vs. GG)	4.57	0.46-45.24	0.194
SLC2A1 rs3754219 (CA vs. AA)	1.07	0.53-2.16	0.862
SLC2A1 rs3754219 (CC vs. AA)	0.69	0.27-1.80	0.449
SLC2A1 rs841853 (CA vs. CC)	0.82	0.41-1.64	0.567
SLC2A1 rs841853 (AA vs. CC)	0.74	0.20-2.76	0.648
SLC2A1 rs841847 (TC vs. CC)	1.21	0.56-2.61	0.632
SLC2A1 rs841847 (TT vs. CC)	2.57	0.45-14.55	0.287
SLC2A1 rs7512565 (CT vs. CC)	0.70	0.36-1.38	0.308
SLC2A1 rs7512565 (TT vs. CC)	0.35	0.04-3.44	0.365
SLC2A1 rs2297977 (GT vs. GG)	2.53	1.24-5.15	0.011
SLC2A1 rs2297977 (TT vs. GG)	2.03	0.52-8.01	0.312
STAT1 rs3771300 (GT vs. TT)	1.49	0.77-2.89	0.241
STAT1 rs3771300 (GG vs. TT)	0.74	0.25-2.19	0.584
STAT1 rs1914408 (CT vs. CC)	2.37	1.20-4.67	0.013
STAT1 rs1914408 (TT vs. CC)	0.90	0.30-2.67	0.846
STAT1 rs2066804 (AG vs. GG)	1.24	0.60-2.55	0.562
STAT1 rs2066804 (AA vs. GG)	0.87	0.37-2.05	0.747
STAT1 rs1547550 (CG vs. GG)	2.12	0.94-4.78	0.069
STAT1 rs1547550 (CC vs. GG)	2286049305.92	NA	0.999
STAT1 rs2280232 (CA vs. AA)	1.65	0.81-3.35	0.165
STAT1 rs2280232 (CC vs. AA)	0.00	NA	0.999
STAT1 rs34997637 (GA vs. AA)	1.85	0.84-4.05	0.126
STAT1 rs34997637 (GG vs. AA)	2.30	0.96-5.53	0.063
STAT1 rs12693591 (CA vs. CC)	1.12	0.59-2.13	0.723
STAT1 rs12693591 (AA vs. CC)	0.61	0.14-2.62	0.507
STAT1 rs10173099 (TC vs. TT)	1.17	0.59-2.29	0.658
STAT1 rs10173099 (CC vs. TT)	1.64	0.62-4.36	0.317
STAT1 rs2066802 (AG vs. AA)	1.02	0.53-1.95	0.953
STAT1 rs2066802 (GG vs. AA)	1.54	0.39-6.12	0.541
STAT1 rs10208033 (TC vs. CC)	1.62	0.82-3.19	0.161
STAT1 rs10208033 (TT vs. CC)	1.58	0.60-4.16	0.357
STAT1 rs1467199 (GC vs. CC)	1.05	0.51-2.18	0.898
STAT1 rs1467199 (GG vs. CC)	0.74	0.31-1.76	0.498
CTNNB1 rs3864004 (GA vs. GG)	0.63	0.33-1.23	0.179
CTNNB1 rs3864004 (AA vs. GG)	1.57	0.41-5.95	0.507
CTNNB1 rs75288535 (GA vs. AA)	0.58	0.27-1.23	0.153
CTNNB1 rs75288535 (GG vs. AA)	1.34	0.34-5.27	0.671
CTNNB1 rs1798802 (GA vs. GG)	0.72	0.37-1.38	0.319
CTNNB1 rs1798802 (AA vs. GG)	0.88	0.27-2.88	0.834
CTNNB1 rs11564465 (TC vs. CC)	0.87	0.44-1.69	0.673

CTNNB1 rs11564465 (TT vs. CC)	-	-	-
CTNNB1 rs4135385 (AG vs. GG)	0.50	0.06-4.09	0.518
CTNNB1 rs4135385 (AA vs. GG)	2.50	0.16-38.60	0.512
CTNNB1 rs2293303 (CT vs. CC)	1.20	0.17-8.66	0.857
CTNNB1 rs2293303 (TT vs. CC)	-	-	-
SERPINE1 rs2227631 (GA vs. GG)	1.00	0.14-7.10	1.000
SERPINE1 rs2227631 (AA vs. GG)	0.50	0.05-5.51	0.571
SERPINE1 rs6092 (GA vs. GG)	0.55	0.06-4.91	0.589
SERPINE1 rs6092 (AA vs. GG)	881168096.10	NA	1.000
SERPINE1 rs6090 (AG vs. GG)	994138364.83	NA	1.000
SERPINE1 rs2227667 (GA vs. AA)	1.78	0.19-16.49	0.613
SERPINE1 rs2227667 (GG vs. AA)	0.67	0.06-7.35	0.741
SERPINE1 rs2227692 (TC vs. CC)	1.40	0.20-10.03	0.738
SERPINE1 rs2227692 (TT vs. CC)	0.60	0.05-6.80	0.680
SERPINE1 rs7242 (GT vs. TT)	0.83	0.11-6.11	0.858
SERPINE1 rs7242 (GG vs. TT)	0.75	0.08-7.21	0.803
DKK1 rs11001553 (CT vs. CC)	0.28	0.04-2.20	0.225
DKK1 rs2241529 (GA vs. AA)	0.88	0.14-5.58	0.888
DKK1 rs2241529 (GG vs. AA)	0.50	0.02-11.09	0.661
DKK1 rs1569198 (GA vs. AA)	1.25	0.21-7.41	0.806
DKK1 rs1569198 (GG vs. AA)	-	-	-
IFNG rs1861494 (TC vs. TT)	7.00	0.61-79.87	0.117
IFNG rs1861494 (CC vs. TT)	1.00	0.10-10.17	1.000
IFNG rs2430561 (TA vs. TT)	0.42	0.05-3.84	0.440
IFNG rs2430561 (AA vs. TT)	0.00	NA	1.000
IFNG rs2069705 (AG vs. GG)	0.40	0.06-2.89	0.363
IFNG rs2069705 (AA vs. GG)	0.40	0.02-8.07	0.550
HIF1A rs2301104 (GC vs. GG)	994138364.83	NA	1.000
HIF1A rs72714570 (GC vs. CC)	0.82	0.11-6.34	0.848
HIF1A rs72714570 (GG vs. CC)	-	-	-
HIF1A rs2301113 (CA vs. AA)	0.19	0.03-1.43	0.107
HIF1A rs2301113 (CC vs. AA)	461564240.82	NA	0.999
HIF1A rs11549465 (TC vs. CC)	0.28	0.04-2.20	0.225
HIF1A rs2057482 (CT vs. CC)	0.30	0.05-1.94	0.206
HIF1A rs2057482 (TT vs. CC)	605803066.07	NA	0.999

CTNNB1 rs11564465 (TT vs. CC)	3.61	0.69-18.81	0.127
CTNNB1 rs4135385 (AG vs. GG)	0.86	0.41-1.82	0.691
CTNNB1 rs4135385 (AA vs. GG)	0.48	0.20-1.17	0.105
CTNNB1 rs2293303 (CT vs. CC)	0.79	0.35-1.78	0.575
CTNNB1 rs2293303 (TT vs. CC)	1921858002.70	NA	0.999
SERPINE1 rs2227631 (GA vs. GG)	0.90	0.45-1.79	0.761
SERPINE1 rs2227631 (AA vs. GG)	1.00	0.42-2.39	0.992
SERPINE1 rs6092 (GA vs. GG)	1.34	0.55-3.25	0.516
SERPINE1 rs6092 (AA vs. GG)	0.00	NA	1.000
SERPINE1 rs6090 (AG vs. GG)	1.20	0.29-4.99	0.799
SERPINE1 rs2227667 (GA vs. AA)	0.58	0.29-1.19	0.137
SERPINE1 rs2227667 (GG vs. AA)	1.40	0.54-3.59	0.486
SERPINE1 rs2227692 (TC vs. CC)	0.60	0.31-1.16	0.126
SERPINE1 rs2227692 (TT vs. CC)	2.18	0.61-7.82	0.232
SERPINE1 rs7242 (GT vs. TT)	1.06	0.48-2.31	0.892
SERPINE1 rs7242 (GG vs. TT)	1.31	0.53-3.22	0.553
DKK1 rs11001553 (CT vs. CC)	1.23	0.53-2.86	0.625
DKK1 rs2241529 (GA vs. AA)	1.04	0.54-2.01	0.900
DKK1 rs2241529 (GG vs. AA)	0.94	0.32-2.78	0.908
DKK1 rs1569198 (GA vs. AA)	1.06	0.55-2.04	0.868
DKK1 rs1569198 (GG vs. AA)	0.97	0.25-3.85	0.967
IFNG rs1861494 (TC vs. TT)	0.90	0.46-1.77	0.759
IFNG rs1861494 (CC vs. TT)	0.52	0.19-1.38	0.187
IFNG rs2430561 (TA vs. TT)	1.07	0.52-2.21	0.860
IFNG rs2430561 (AA vs. TT)	-	-	-
IFNG rs2069705 (AG vs. GG)	0.90	0.46-1.76	0.754
IFNG rs2069705 (AA vs. GG)	1912194711.95	NA	0.999
HIF1A rs2301104 (GC vs. GG)	1.08	0.40-2.97	0.876
HIF1A rs72714570 (GC vs. CC)	0.85	0.42-1.73	0.648
HIF1A rs72714570 (GG vs. CC)	0.57	0.05-6.40	0.645
HIF1A rs2301113 (CA vs. AA)	1.42	0.72-2.81	0.311
HIF1A rs2301113 (CC vs. AA)	0.92	0.36-2.38	0.868
HIF1A rs11549465 (TC vs. CC)	3.28	1.10-9.81	0.034
HIF1A rs2057482 (CT vs. CC)	1.78	0.92-3.45	0.086
HIF1A rs2057482 (TT vs. CC)	0.48	0.05-4.78	0.531

Supplementary Table 3D The association between each SNP and capsule formation stratified by tumor number

Solitary

Multinodular

SNP (genotype)	OR	95%CI	P value
SLC2A1 rs841858 (GT vs. GG)	2.96	1.07-8.22	0.037
SLC2A1 rs841858 (TT vs. GG)	2.59	0.22-30.12	0.446
SLC2A1 rs3754219 (CA vs. AA)	1.00	0.39-2.56	1.000
SLC2A1 rs3754219 (CC vs. AA)	1.50	0.34-6.59	0.591
SLC2A1 rs841853 (CA vs. CC)	0.75	0.31-1.85	0.536
SLC2A1 rs841853 (AA vs. CC)	0.27	0.03-2.75	0.268
SLC2A1 rs841847 (TC vs. CC)	0.57	0.21-1.58	0.282
SLC2A1 rs841847 (TT vs. CC)	1.71	0.15-19.86	0.666
SLC2A1 rs7512565 (CT vs. CC)	0.44	0.18-1.06	0.067
SLC2A1 rs7512565 (TT vs. CC)	1146466017.51	NA	1.000
SLC2A1 rs2297977 (GT vs. GG)	3.09	1.16-8.28	0.025
SLC2A1 rs2297977 (TT vs. GG)	2.75	0.47-16.26	0.265
STAT1 rs3771300 (GT vs. TT)	1.70	0.69-4.17	0.245
STAT1 rs3771300 (GG vs. TT)	1.19	0.27-5.35	0.820
STAT1 rs1914408 (CT vs. CC)	2.12	0.84-5.40	0.114
STAT1 rs1914408 (TT vs. CC)	0.64	0.18-2.25	0.490
STAT1 rs2066804 (AG vs. GG)	1.64	0.60-4.54	0.338
STAT1 rs2066804 (AA vs. GG)	0.56	0.18-1.73	0.315
STAT1 rs1547550 (CG vs. GG)	2.76	0.88-8.67	0.081
STAT1 rs1547550 (CC vs. GG)	-	-	-
STAT1 rs2280232 (CA vs. AA)	2.21	0.82-5.92	0.116
STAT1 rs2280232 (CC vs. AA)	0.00	NA	0.999
STAT1 rs34997637 (GA vs. AA)	1.80	0.65-5.01	0.261
STAT1 rs34997637 (GG vs. AA)	3.21	1.04-9.88	0.042
STAT1 rs12693591 (CA vs. CC)	2.03	0.85-4.90	0.113
STAT1 rs12693591 (AA vs. CC)	0.83	0.13-5.41	0.841
STAT1 rs10173099 (TC vs. TT)	1.93	0.76-4.85	0.165
STAT1 rs10173099 (CC vs. TT)	2.93	0.83-10.32	0.094
STAT1 rs2066802 (AG vs. AA)	1.11	0.45-2.77	0.816
STAT1 rs2066802 (GG vs. AA)	1.73	0.37-8.03	0.482
STAT1 rs10208033 (TC vs. CC)	2.56	1.03-6.37	0.044
STAT1 rs10208033 (TT vs. CC)	1.84	0.48-7.12	0.377
STAT1 rs1467199 (GC vs. CC)	0.88	0.32-2.42	0.803
STAT1 rs1467199 (GG vs. CC)	0.58	0.18-1.91	0.367
CTNNB1 rs3864004 (GA vs. GG)	0.64	0.26-1.55	0.321
CTNNB1 rs3864004 (AA vs. GG)	0.81	0.15-4.42	0.806
CTNNB1 rs75288535 (GA vs. AA)	0.40	0.15-1.05	0.062
CTNNB1 rs75288535 (GG vs. AA)	2.27	0.22-23.17	0.488
CTNNB1 rs1798802 (GA vs. GG)	0.74	0.30-1.81	0.507
CTNNB1 rs1798802 (AA vs. GG)	0.66	0.16-2.81	0.575
CTNNB1 rs11564465 (TC vs. CC)	0.64	0.26-1.56	0.324

SNP (genotype)	OR	95%CI	P value
SLC2A1 rs841858 (GT vs. GG)	1.54	0.58-4.09	0.386
SLC2A1 rs841858 (TT vs. GG)	2261664779.99	NA	1.000
SLC2A1 rs3754219 (CA vs. AA)	0.93	0.36-2.39	0.883
SLC2A1 rs3754219 (CC vs. AA)	0.54	0.17-1.72	0.293
SLC2A1 rs841853 (CA vs. CC)	1.42	0.55-3.66	0.464
SLC2A1 rs841853 (AA vs. CC)	1.42	0.27-7.61	0.680
SLC2A1 rs841847 (TC vs. CC)	3.94	1.26-12.38	0.019
SLC2A1 rs841847 (TT vs. CC)	3.29	0.29-37.92	0.340
SLC2A1 rs7512565 (CT vs. CC)	1.10	0.45-2.67	0.833
SLC2A1 rs7512565 (TT vs. CC)	0.00	NA	0.999
SLC2A1 rs2297977 (GT vs. GG)	1.58	0.61-4.09	0.350
SLC2A1 rs2297977 (TT vs. GG)	1.44	0.19-10.89	0.721
STAT1 rs3771300 (GT vs. TT)	1.23	0.51-2.97	0.649
STAT1 rs3771300 (GG vs. TT)	0.81	0.23-2.87	0.747
STAT1 rs1914408 (CT vs. CC)	2.18	0.90-5.24	0.083
STAT1 rs1914408 (TT vs. CC)	2.44	0.49-12.15	0.275
STAT1 rs2066804 (AG vs. GG)	0.96	0.38-2.44	0.939
STAT1 rs2066804 (AA vs. GG)	1.29	0.42-3.94	0.660
STAT1 rs1547550 (CG vs. GG)	1.17	0.38-3.54	0.786
STAT1 rs1547550 (CC vs. GG)	2153966457.14	NA	0.999
STAT1 rs2280232 (CA vs. AA)	1.02	0.39-2.65	0.975
STAT1 rs2280232 (CC vs. AA)	0.00	NA	1.000
STAT1 rs34997637 (GA vs. AA)	1.83	0.66-5.12	0.247
STAT1 rs34997637 (GG vs. AA)	2.00	0.62-6.42	0.244
STAT1 rs12693591 (CA vs. CC)	0.73	0.31-1.71	0.467
STAT1 rs12693591 (AA vs. CC)	0.82	0.16-4.07	0.806
STAT1 rs10173099 (TC vs. TT)	0.95	0.39-2.30	0.901
STAT1 rs10173099 (CC vs. TT)	1.53	0.43-5.45	0.511
STAT1 rs2066802 (AG vs. AA)	1.17	0.51-2.70	0.706
STAT1 rs2066802 (GG vs. AA)	1.35	0.18-10.42	0.773
STAT1 rs10208033 (TC vs. CC)	1.32	0.54-3.24	0.538
STAT1 rs10208033 (TT vs. CC)	1.53	0.45-5.26	0.497
STAT1 rs1467199 (GC vs. CC)	1.06	0.40-2.77	0.914
STAT1 rs1467199 (GG vs. CC)	0.82	0.28-2.43	0.721
CTNNB1 rs3864004 (GA vs. GG)	0.82	0.35-1.93	0.655
CTNNB1 rs3864004 (AA vs. GG)	3.63	0.35-37.14	0.278
CTNNB1 rs75288535 (GA vs. AA)	0.70	0.25-2.00	0.506
CTNNB1 rs75288535 (GG vs. AA)	1.20	0.28-5.21	0.808
CTNNB1 rs1798802 (GA vs. GG)	0.81	0.34-1.89	0.622
CTNNB1 rs1798802 (AA vs. GG)	3.03	0.53-17.39	0.215
CTNNB1 rs11564465 (TC vs. CC)	1.43	0.61-3.39	0.414

CTNNB1 rs11564465 (TT vs. CC)	1.64	0.28-9.79	0.586
CTNNB1 rs4135385 (AG vs. GG)	1.32	0.48-3.66	0.591
CTNNB1 rs4135385 (AA vs. GG)	0.37	0.11-1.23	0.104
CTNNB1 rs2293303 (CT vs. CC)	0.84	0.29-2.43	0.747
CTNNB1 rs2293303 (TT vs. CC)	1525726240.47	NA	0.999
SERPINE1 rs2227631 (GA vs. GG)	0.78	0.31-2.00	0.611
SERPINE1 rs2227631 (AA vs. GG)	0.93	0.28-3.03	0.900
SERPINE1 rs6092 (GA vs. GG)	0.43	0.12-1.54	0.193
SERPINE1 rs6092 (AA vs. GG)	1379063890.24	NA	1.000
SERPINE1 rs6090 (AG vs. GG)	4.10	0.44-38.23	0.216
SERPINE1 rs2227667 (GA vs. AA)	0.81	0.32-2.04	0.658
SERPINE1 rs2227667 (GG vs. AA)	0.81	0.19-3.43	0.777
SERPINE1 rs2227692 (TC vs. CC)	0.82	0.35-1.96	0.659
SERPINE1 rs2227692 (TT vs. CC)	1.81	0.30-11.03	0.520
SERPINE1 rs7242 (GT vs. TT)	0.71	0.23-2.24	0.562
SERPINE1 rs7242 (GG vs. TT)	0.91	0.26-3.18	0.879
DKK1 rs11001553 (CT vs. CC)	1.25	0.42-3.72	0.687
DKK1 rs2241529 (GA vs. AA)	1.23	0.51-2.97	0.642
DKK1 rs2241529 (GG vs. AA)	1.05	0.23-4.74	0.952
DKK1 rs1569198 (GA vs. AA)	1.30	0.54-3.11	0.561
DKK1 rs1569198 (GG vs. AA)	2.16	0.18-25.32	0.540
IFNG rs1861494 (TC vs. TT)	1.14	0.47-2.81	0.770
IFNG rs1861494 (CC vs. TT)	0.45	0.11-1.76	0.249
IFNG rs2430561 (TA vs. TT)	0.59	0.23-1.53	0.275
IFNG rs2430561 (AA vs. TT)	0.00	NA	1.000
IFNG rs2069705 (AG vs. GG)	0.58	0.23-1.46	0.247
IFNG rs2069705 (AA vs. GG)	1363056898.66	NA	0.999
HIF1A rs2301104 (GC vs. GG)	0.76	0.19-3.04	0.698
HIF1A rs72714570 (GC vs. CC)	0.71	0.27-1.89	0.497
HIF1A rs72714570 (GG vs. CC)	0.86	0.05-14.30	0.915
HIF1A rs2301113 (CA vs. AA)	1.29	0.51-3.27	0.590
HIF1A rs2301113 (CC vs. AA)	0.93	0.27-3.21	0.913
HIF1A rs11549465 (TC vs. CC)	0.97	0.29-3.29	0.966
HIF1A rs2057482 (CT vs. CC)	1.39	0.58-3.30	0.459
HIF1A rs2057482 (TT vs. CC)	0.52	0.04-6.10	0.603

CTNNB1 rs11564465 (TT vs. CC)	2458331282.60	NA	0.999
CTNNB1 rs4135385 (AG vs. GG)	0.51	0.19-1.38	0.183
CTNNB1 rs4135385 (AA vs. GG)	0.92	0.29-2.91	0.891
CTNNB1 rs2293303 (CT vs. CC)	0.93	0.34-2.59	0.892
CTNNB1 rs2293303 (TT vs. CC)	2069827142.40	NA	1.000
SERPINE1 rs2227631 (GA vs. GG)	0.98	0.40-2.42	0.961
SERPINE1 rs2227631 (AA vs. GG)	0.86	0.27-2.70	0.790
SERPINE1 rs6092 (GA vs. GG)	2.97	0.93-9.53	0.068
SERPINE1 rs6092 (AA vs. GG)	0.00	NA	1.000
SERPINE1 rs6090 (AG vs. GG)	0.40	0.04-3.98	0.433
SERPINE1 rs2227667 (GA vs. AA)	0.52	0.19-1.40	0.195
SERPINE1 rs2227667 (GG vs. AA)	1.68	0.54-5.17	0.370
SERPINE1 rs2227692 (TC vs. CC)	0.54	0.22-1.33	0.181
SERPINE1 rs2227692 (TT vs. CC)	1.64	0.40-6.76	0.493
SERPINE1 rs7242 (GT vs. TT)	1.05	0.41-2.66	0.924
SERPINE1 rs7242 (GG vs. TT)	1.18	0.37-3.73	0.782
DKK1 rs11001553 (CT vs. CC)	0.82	0.27-2.52	0.728
DKK1 rs2241529 (GA vs. AA)	0.92	0.39-2.17	0.843
DKK1 rs2241529 (GG vs. AA)	0.77	0.19-3.15	0.718
DKK1 rs1569198 (GA vs. AA)	0.92	0.39-2.17	0.842
DKK1 rs1569198 (GG vs. AA)	0.58	0.10-3.44	0.549
IFNG rs1861494 (TC vs. TT)	0.96	0.39-2.36	0.934
IFNG rs1861494 (CC vs. TT)	0.71	0.21-2.35	0.570
IFNG rs2430561 (TA vs. TT)	1.54	0.56-4.24	0.402
IFNG rs2430561 (AA vs. TT)	-	-	-
IFNG rs2069705 (AG vs. GG)	1.13	0.47-2.72	0.778
IFNG rs2069705 (AA vs. GG)	0.00	NA	1.000
HIF1A rs2301104 (GC vs. GG)	1.62	0.41-6.47	0.493
HIF1A rs72714570 (GC vs. CC)	0.97	0.38-2.44	0.947
HIF1A rs72714570 (GG vs. CC)	0.00	NA	1.000
HIF1A rs2301113 (CA vs. AA)	0.96	0.40-2.30	0.921
HIF1A rs2301113 (CC vs. AA)	1.05	0.30-3.68	0.942
HIF1A rs11549465 (TC vs. CC)	5.88	1.18-29.42	0.031
HIF1A rs2057482 (CT vs. CC)	1.50	0.62-3.63	0.368
HIF1A rs2057482 (TT vs. CC)	3.00	0.26-34.95	0.381

Supplementary Table 3E The association between each SNP and capsule formation stratified by tumor diameter

≤ 5 cm

> 5 cm

SNP (genotype)	OR	95%CI	P value
SLC2A1 rs841858 (GT vs. GG)	2.30	0.92-5.74	0.075
SLC2A1 rs841858 (TT vs. GG)	3.06	0.27-35.19	0.369
SLC2A1 rs3754219 (CA vs. AA)	0.50	0.22-1.16	0.106
SLC2A1 rs3754219 (CC vs. AA)	0.54	0.16-1.82	0.320
SLC2A1 rs841853 (CA vs. CC)	1.30	0.56-3.01	0.541
SLC2A1 rs841853 (AA vs. CC)	0.78	0.17-3.53	0.747
SLC2A1 rs841847 (TC vs. CC)	1.22	0.47-3.19	0.684
SLC2A1 rs841847 (TT vs. CC)	2.69	0.47-15.50	0.269
SLC2A1 rs7512565 (CT vs. CC)	1.02	0.45-2.27	0.972
SLC2A1 rs7512565 (TT vs. CC)	0.40	0.04-4.02	0.435
SLC2A1 rs2297977 (GT vs. GG)	1.93	0.78-4.80	0.157
SLC2A1 rs2297977 (TT vs. GG)	3.03	0.52-17.57	0.216
STAT1 rs3771300 (GT vs. TT)	1.22	0.51-2.93	0.652
STAT1 rs3771300 (GG vs. TT)	1.12	0.34-3.70	0.849
STAT1 rs1914408 (CT vs. CC)	1.77	0.76-4.10	0.186
STAT1 rs1914408 (TT vs. CC)	1.05	0.35-3.17	0.931
STAT1 rs2066804 (AG vs. GG)	1.36	0.54-3.40	0.514
STAT1 rs2066804 (AA vs. GG)	0.95	0.36-2.51	0.918
STAT1 rs1547550 (CG vs. GG)	1.99	0.70-5.71	0.199
STAT1 rs1547550 (CC vs. GG)	2253162280.82	NA	1.000
STAT1 rs2280232 (CA vs. AA)	1.12	0.48-2.64	0.795
STAT1 rs2280232 (CC vs. AA)	0.00	NA	0.999
STAT1 rs34997637 (GA vs. AA)	2.00	0.79-5.05	0.142
STAT1 rs34997637 (GG vs. AA)	2.39	0.87-6.60	0.093
STAT1 rs12693591 (CA vs. CC)	1.22	0.56-2.68	0.613
STAT1 rs12693591 (AA vs. CC)	0.51	0.09-2.86	0.446
STAT1 rs10173099 (TC vs. TT)	1.39	0.61-3.19	0.432
STAT1 rs10173099 (CC vs. TT)	2.75	0.85-8.92	0.093
STAT1 rs2066802 (AG vs. AA)	0.87	0.39-1.93	0.725
STAT1 rs2066802 (GG vs. AA)	1.17	0.22-6.26	0.852
STAT1 rs10208033 (TC vs. CC)	2.19	0.96-5.00	0.064
STAT1 rs10208033 (TT vs. CC)	1.18	0.36-3.88	0.789
STAT1 rs1467199 (GC vs. CC)	1.57	0.63-3.88	0.333
STAT1 rs1467199 (GG vs. CC)	0.73	0.26-2.08	0.553
CTNNB1 rs3864004 (GA vs. GG)	0.86	0.38-1.95	0.713
CTNNB1 rs3864004 (AA vs. GG)	1.20	0.23-6.39	0.831
CTNNB1 rs75288535 (GA vs. AA)	0.51	0.21-1.29	0.155
CTNNB1 rs75288535 (GG vs. AA)	1.45	0.30-6.93	0.643
CTNNB1 rs1798802 (GA vs. GG)	0.88	0.40-1.95	0.752
CTNNB1 rs1798802 (AA vs. GG)	2.08	0.45-9.61	0.347
CTNNB1 rs11564465 (TC vs. CC)	1.02	0.45-2.32	0.965

SNP (genotype)	OR	95%CI	P value
SLC2A1 rs841858 (GT vs. GG)	1.92	0.65-5.64	0.235
SLC2A1 rs841858 (TT vs. GG)	1809331823.99	NA	1.000
SLC2A1 rs3754219 (CA vs. AA)	3.06	0.94-9.97	0.064
SLC2A1 rs3754219 (CC vs. AA)	1.43	0.35-5.79	0.620
SLC2A1 rs841853 (CA vs. CC)	0.77	0.28-2.15	0.624
SLC2A1 rs841853 (AA vs. CC)	0.85	0.05-14.39	0.911
SLC2A1 rs841847 (TC vs. CC)	1.73	0.55-5.38	0.347
SLC2A1 rs841847 (TT vs. CC)	-	-	-
SLC2A1 rs7512565 (CT vs. CC)	0.40	0.15-1.08	0.070
SLC2A1 rs7512565 (TT vs. CC)	0.00	NA	1.000
SLC2A1 rs2297977 (GT vs. GG)	2.50	0.89-7.02	0.082
SLC2A1 rs2297977 (TT vs. GG)	1.25	0.16-9.67	0.831
STAT1 rs3771300 (GT vs. TT)	1.47	0.54-4.00	0.456
STAT1 rs3771300 (GG vs. TT)	0.65	0.13-3.33	0.605
STAT1 rs1914408 (CT vs. CC)	2.80	1.05-7.47	0.040
STAT1 rs1914408 (TT vs. CC)	1.47	0.19-11.59	0.716
STAT1 rs2066804 (AG vs. GG)	1.09	0.39-3.00	0.874
STAT1 rs2066804 (AA vs. GG)	0.77	0.19-3.19	0.718
STAT1 rs1547550 (CG vs. GG)	1.55	0.49-4.94	0.455
STAT1 rs1547550 (CC vs. GG)	1673170372.95	NA	1.000
STAT1 rs2280232 (CA vs. AA)	2.68	0.83-8.62	0.099
STAT1 rs2280232 (CC vs. AA)	0.00	NA	1.000
STAT1 rs34997637 (GA vs. AA)	1.43	0.45-4.59	0.549
STAT1 rs34997637 (GG vs. AA)	2.65	0.70-10.06	0.151
STAT1 rs12693591 (CA vs. CC)	1.13	0.44-2.94	0.797
STAT1 rs12693591 (AA vs. CC)	1.50	0.22-10.08	0.677
STAT1 rs10173099 (TC vs. TT)	1.21	0.44-3.32	0.705
STAT1 rs10173099 (CC vs. TT)	1.50	0.39-5.84	0.559
STAT1 rs2066802 (AG vs. AA)	1.53	0.58-4.01	0.390
STAT1 rs2066802 (GG vs. AA)	2.38	0.38-14.70	0.352
STAT1 rs10208033 (TC vs. CC)	1.39	0.51-3.74	0.521
STAT1 rs10208033 (TT vs. CC)	2.87	0.62-13.37	0.179
STAT1 rs1467199 (GC vs. CC)	0.52	0.17-1.56	0.243
STAT1 rs1467199 (GG vs. CC)	0.69	0.19-2.53	0.578
CTNNB1 rs3864004 (GA vs. GG)	0.53	0.20-1.37	0.187
CTNNB1 rs3864004 (AA vs. GG)	2.10	0.20-22.33	0.538
CTNNB1 rs75288535 (GA vs. AA)	0.58	0.19-1.75	0.329
CTNNB1 rs75288535 (GG vs. AA)	1.23	0.19-8.01	0.827
CTNNB1 rs1798802 (GA vs. GG)	0.56	0.21-1.51	0.252
CTNNB1 rs1798802 (AA vs. GG)	0.67	0.14-3.19	0.612
CTNNB1 rs11564465 (TC vs. CC)	0.84	0.33-2.18	0.726

CTNNB1 rs11564465 (TT vs. CC)	3.87	0.38-39.05	0.251
CTNNB1 rs4135385 (AG vs. GG)	0.90	0.37-2.18	0.813
CTNNB1 rs4135385 (AA vs. GG)	0.81	0.28-2.36	0.698
CTNNB1 rs2293303 (CT vs. CC)	1.75	0.60-5.10	0.307
CTNNB1 rs2293303 (TT vs. CC)	2195388889.00	NA	1.000
SERPINE1 rs2227631 (GA vs. GG)	0.79	0.34-1.84	0.588
SERPINE1 rs2227631 (AA vs. GG)	0.58	0.19-1.80	0.349
SERPINE1 rs6092 (GA vs. GG)	1.11	0.37-3.31	0.852
SERPINE1 rs6092 (AA vs. GG)	2048894922.64	NA	1.000
SERPINE1 rs6090 (AG vs. GG)	1.89	0.30-11.80	0.495
SERPINE1 rs2227667 (GA vs. AA)	1.21	0.51-2.83	0.668
SERPINE1 rs2227667 (GG vs. AA)	1.43	0.43-4.72	0.558
SERPINE1 rs2227692 (TC vs. CC)	1.20	0.54-2.67	0.658
SERPINE1 rs2227692 (TT vs. CC)	1.88	0.37-9.52	0.444
SERPINE1 rs7242 (GT vs. TT)	0.92	0.36-2.34	0.866
SERPINE1 rs7242 (GG vs. TT)	0.72	0.25-2.05	0.536
DKK1 rs11001553 (CT vs. CC)	1.03	0.40-2.63	0.958
DKK1 rs2241529 (GA vs. AA)	0.87	0.40-1.92	0.732
DKK1 rs2241529 (GG vs. AA)	0.91	0.22-3.82	0.896
DKK1 rs1569198 (GA vs. AA)	1.01	0.47-2.20	0.976
DKK1 rs1569198 (GG vs. AA)	0.61	0.05-7.05	0.690
IFNG rs1861494 (TC vs. TT)	1.49	0.66-3.37	0.342
IFNG rs1861494 (CC vs. TT)	0.44	0.12-1.58	0.207
IFNG rs2430561 (TA vs. TT)	1.50	0.62-3.61	0.364
IFNG rs2430561 (AA vs. TT)	0.00	NA	1.000
IFNG rs2069705 (AG vs. GG)	1.15	0.51-2.60	0.735
IFNG rs2069705 (AA vs. GG)	2207815618.56	NA	0.999
HIF1A rs2301104 (GC vs. GG)	1.27	0.30-5.38	0.743
HIF1A rs72714570 (GC vs. CC)	0.83	0.33-2.08	0.686
HIF1A rs72714570 (GG vs. CC)	0.58	0.05-6.64	0.661
HIF1A rs2301113 (CA vs. AA)	1.19	0.52-2.75	0.684
HIF1A rs2301113 (CC vs. AA)	1.62	0.51-5.09	0.411
HIF1A rs11549465 (TC vs. CC)	1.80	0.58-5.60	0.310
HIF1A rs2057482 (CT vs. CC)	2.41	1.07-5.41	0.033
HIF1A rs2057482 (TT vs. CC)	2.67	0.42-17.19	0.300

CTNNB1 rs11564465 (TT vs. CC)	2.70	0.26-28.34	0.408
CTNNB1 rs4135385 (AG vs. GG)	0.61	0.19-2.04	0.426
CTNNB1 rs4135385 (AA vs. GG)	0.34	0.09-1.27	0.107
CTNNB1 rs2293303 (CT vs. CC)	0.41	0.14-1.19	0.102
CTNNB1 rs2293303 (TT vs. CC)	1225532639.40	NA	0.999
SERPINE1 rs2227631 (GA vs. GG)	1.15	0.41-3.26	0.791
SERPINE1 rs2227631 (AA vs. GG)	1.59	0.46-5.50	0.461
SERPINE1 rs6092 (GA vs. GG)	1.31	0.37-4.59	0.673
SERPINE1 rs6092 (AA vs. GG)	0.00	NA	1.000
SERPINE1 rs6090 (AG vs. GG)	0.92	0.12-6.88	0.933
SERPINE1 rs2227667 (GA vs. AA)	0.26	0.08-0.80	0.019
SERPINE1 rs2227667 (GG vs. AA)	0.86	0.22-3.27	0.819
SERPINE1 rs2227692 (TC vs. CC)	0.25	0.09-0.71	0.010
SERPINE1 rs2227692 (TT vs. CC)	1.17	0.25-5.50	0.846
SERPINE1 rs7242 (GT vs. TT)	0.95	0.32-2.86	0.931
SERPINE1 rs7242 (GG vs. TT)	3.06	0.71-13.11	0.133
DKK1 rs11001553 (CT vs. CC)	1.17	0.29-4.78	0.822
DKK1 rs2241529 (GA vs. AA)	1.54	0.56-4.18	0.402
DKK1 rs2241529 (GG vs. AA)	0.84	0.20-3.65	0.821
DKK1 rs1569198 (GA vs. AA)	1.30	0.47-3.59	0.612
DKK1 rs1569198 (GG vs. AA)	1.00	0.18-5.51	1.000
IFNG rs1861494 (TC vs. TT)	0.62	0.23-1.72	0.360
IFNG rs1861494 (CC vs. TT)	0.71	0.18-2.73	0.613
IFNG rs2430561 (TA vs. TT)	0.47	0.15-1.47	0.192
IFNG rs2430561 (AA vs. TT)	-	-	-
IFNG rs2069705 (AG vs. GG)	0.50	0.18-1.39	0.184
IFNG rs2069705 (AA vs. GG)	0.00	NA	1.000
HIF1A rs2301104 (GC vs. GG)	0.91	0.24-3.45	0.889
HIF1A rs72714570 (GC vs. CC)	0.78	0.29-2.10	0.624
HIF1A rs72714570 (GG vs. CC)	-	-	-
HIF1A rs2301113 (CA vs. AA)	1.15	0.42-3.14	0.779
HIF1A rs2301113 (CC vs. AA)	0.50	0.12-2.07	0.342
HIF1A rs11549465 (TC vs. CC)	3.09	0.58-16.48	0.186
HIF1A rs2057482 (CT vs. CC)	0.75	0.28-1.97	0.554
HIF1A rs2057482 (TT vs. CC)	0.00	NA	1.000

Supplementary Table 3F The association between each SNP and capsule formation stratified by tumor location

Single lobe

SNP (genotype)	OR	95%CI	P value
SLC2A1 rs841858 (GT vs. GG)	3.12	1.29-7.51	0.011
SLC2A1 rs841858 (TT vs. GG)	4.45	0.44-44.78	0.205
SLC2A1 rs3754219 (CA vs. AA)	1.16	0.50-2.69	0.725
SLC2A1 rs3754219 (CC vs. AA)	1.00	0.31-3.21	1.000
SLC2A1 rs841853 (CA vs. CC)	0.77	0.33-1.82	0.553
SLC2A1 rs841853 (AA vs. CC)	0.71	0.15-3.40	0.670
SLC2A1 rs841847 (TC vs. CC)	0.62	0.22-1.75	0.369
SLC2A1 rs841847 (TT vs. CC)	1.47	0.23-9.21	0.683
SLC2A1 rs7512565 (CT vs. CC)	0.54	0.25-1.20	0.131
SLC2A1 rs7512565 (TT vs. CC)	0.41	0.04-4.71	0.473
SLC2A1 rs2297977 (GT vs. GG)	2.87	1.18-6.99	0.021
SLC2A1 rs2297977 (TT vs. GG)	1.79	0.44-7.23	0.413
STAT1 rs3771300 (GT vs. TT)	1.66	0.73-3.77	0.228
STAT1 rs3771300 (GG vs. TT)	1.28	0.42-3.89	0.663
STAT1 rs1914408 (CT vs. CC)	2.40	1.05-5.47	0.037
STAT1 rs1914408 (TT vs. CC)	0.53	0.15-1.91	0.334
STAT1 rs2066804 (AG vs. GG)	1.84	0.77-4.43	0.173
STAT1 rs2066804 (AA vs. GG)	0.76	0.28-2.07	0.597
STAT1 rs1547550 (CG vs. GG)	1.52	0.58-3.97	0.389
STAT1 rs1547550 (CC vs. GG)	1846256963.26	NA	1.000
STAT1 rs2280232 (CA vs. AA)	1.47	0.59-3.68	0.412
STAT1 rs2280232 (CC vs. AA)	0.00	NA	0.999
STAT1 rs34997637 (GA vs. AA)	2.29	0.90-5.80	0.082
STAT1 rs34997637 (GG vs. AA)	2.86	1.06-7.73	0.039
STAT1 rs12693591 (CA vs. CC)	1.59	0.73-3.44	0.244
STAT1 rs12693591 (AA vs. CC)	1.29	0.29-5.70	0.735
STAT1 rs10173099 (TC vs. TT)	1.31	0.58-2.97	0.512
STAT1 rs10173099 (CC vs. TT)	2.74	0.87-8.60	0.085
STAT1 rs2066802 (AG vs. AA)	1.24	0.57-2.73	0.590
STAT1 rs2066802 (GG vs. AA)	1.78	0.45-6.96	0.409
STAT1 rs10208033 (TC vs. CC)	2.50	1.09-5.73	0.030
STAT1 rs10208033 (TT vs. CC)	1.97	0.63-6.12	0.241
STAT1 rs1467199 (GC vs. CC)	0.98	0.42-2.30	0.964
STAT1 rs1467199 (GG vs. CC)	0.68	0.24-1.92	0.462
CTNNB1 rs3864004 (GA vs. GG)	0.58	0.26-1.26	0.165
CTNNB1 rs3864004 (AA vs. GG)	0.61	0.12-2.96	0.535
CTNNB1 rs75288535 (GA vs. AA)	0.54	0.23-1.26	0.153
CTNNB1 rs75288535 (GG vs. AA)	1.80	0.31-10.41	0.514
CTNNB1 rs1798802 (GA vs. GG)	0.76	0.35-1.66	0.486
CTNNB1 rs1798802 (AA vs. GG)	0.59	0.15-2.35	0.457
CTNNB1 rs11564465 (TC vs. CC)	0.68	0.31-1.49	0.330

Double lobes

SNP (genotype)	OR	95%CI	P value
SLC2A1 rs841858 (GT vs. GG)	1.02	0.31-3.42	0.972
SLC2A1 rs841858 (TT vs. GG)	-	-	-
SLC2A1 rs3754219 (CA vs. AA)	0.72	0.24-2.14	0.551
SLC2A1 rs3754219 (CC vs. AA)	0.51	0.13-2.03	0.335
SLC2A1 rs841853 (CA vs. CC)	1.64	0.60-4.49	0.334
SLC2A1 rs841853 (AA vs. CC)	0.69	0.06-8.26	0.773
SLC2A1 rs841847 (TC vs. CC)	3.85	1.25-11.88	0.019
SLC2A1 rs841847 (TT vs. CC)	2871955276.18	NA	1.000
SLC2A1 rs7512565 (CT vs. CC)	1.05	0.38-2.87	0.928
SLC2A1 rs7512565 (TT vs. CC)	0.00	NA	0.999
SLC2A1 rs2297977 (GT vs. GG)	1.53	0.53-4.44	0.429
SLC2A1 rs2297977 (TT vs. GG)	2230893830.60	NA	1.000
STAT1 rs3771300 (GT vs. TT)	1.19	0.45-3.15	0.730
STAT1 rs3771300 (GG vs. TT)	0.30	0.03-2.93	0.299
STAT1 rs1914408 (CT vs. CC)	1.91	0.69-5.26	0.214
STAT1 rs1914408 (TT vs. CC)	4.42	0.75-26.10	0.101
STAT1 rs2066804 (AG vs. GG)	0.68	0.23-2.04	0.496
STAT1 rs2066804 (AA vs. GG)	1.00	0.28-3.63	1.000
STAT1 rs1547550 (CG vs. GG)	2.48	0.65-9.42	0.183
STAT1 rs1547550 (CC vs. GG)	2288589360.71	NA	1.000
STAT1 rs2280232 (CA vs. AA)	1.68	0.61-4.64	0.317
STAT1 rs2280232 (CC vs. AA)	-	-	-
STAT1 rs34997637 (GA vs. AA)	1.26	0.40-3.98	0.697
STAT1 rs34997637 (GG vs. AA)	2.02	0.51-7.94	0.314
STAT1 rs12693591 (CA vs. CC)	0.75	0.28-2.00	0.566
STAT1 rs12693591 (AA vs. CC)	0.33	0.03-3.50	0.360
STAT1 rs10173099 (TC vs. TT)	1.33	0.48-3.69	0.586
STAT1 rs10173099 (CC vs. TT)	1.42	0.34-6.00	0.636
STAT1 rs2066802 (AG vs. AA)	0.95	0.36-2.49	0.914
STAT1 rs2066802 (GG vs. AA)	1.17	0.07-20.02	0.915
STAT1 rs10208033 (TC vs. CC)	1.13	0.41-3.06	0.818
STAT1 rs10208033 (TT vs. CC)	1.29	0.27-6.07	0.751
STAT1 rs1467199 (GC vs. CC)	1.06	0.32-3.45	0.930
STAT1 rs1467199 (GG vs. CC)	0.78	0.22-2.79	0.701
CTNNB1 rs3864004 (GA vs. GG)	1.01	0.37-2.80	0.981
CTNNB1 rs3864004 (AA vs. GG)	2125624793.23	NA	0.999
CTNNB1 rs75288535 (GA vs. AA)	0.48	0.13-1.77	0.271
CTNNB1 rs75288535 (GG vs. AA)	1.08	0.20-5.89	0.926
CTNNB1 rs1798802 (GA vs. GG)	0.76	0.28-2.05	0.585
CTNNB1 rs1798802 (AA vs. GG)	6.00	0.63-57.14	0.119
CTNNB1 rs11564465 (TC vs. CC)	1.76	0.65-4.79	0.268

CTNNB1 rs11564465 (TT vs. CC)	1.37	0.22-8.74	0.738
CTNNB1 rs4135385 (AG vs. GG)	1.10	0.45-2.72	0.831
CTNNB1 rs4135385 (AA vs. GG)	0.44	0.15-1.24	0.121
CTNNB1 rs2293303 (CT vs. CC)	0.73	0.27-1.97	0.532
CTNNB1 rs2293303 (TT vs. CC)	1615474842.85	NA	1.000
SERPINE1 rs2227631 (GA vs. GG)	0.71	0.32-1.61	0.418
SERPINE1 rs2227631 (AA vs. GG)	0.87	0.29-2.62	0.804
SERPINE1 rs6092 (GA vs. GG)	0.70	0.25-2.00	0.504
SERPINE1 rs6092 (AA vs. GG)	1615474842.85	NA	1.000
SERPINE1 rs6090 (AG vs. GG)	1.41	0.30-6.62	0.662
SERPINE1 rs2227667 (GA vs. AA)	0.71	0.31-1.62	0.410
SERPINE1 rs2227667 (GG vs. AA)	1.28	0.40-4.11	0.680
SERPINE1 rs2227692 (TC vs. CC)	0.72	0.33-1.56	0.401
SERPINE1 rs2227692 (TT vs. CC)	1.83	0.41-8.23	0.429
SERPINE1 rs7242 (GT vs. TT)	0.65	0.26-1.62	0.355
SERPINE1 rs7242 (GG vs. TT)	1.16	0.40-3.32	0.788
DKK1 rs11001553 (CT vs. CC)	1.04	0.38-2.86	0.934
DKK1 rs2241529 (GA vs. AA)	1.12	0.52-2.43	0.768
DKK1 rs2241529 (GG vs. AA)	0.52	0.12-2.31	0.390
DKK1 rs1569198 (GA vs. AA)	1.11	0.52-2.39	0.783
DKK1 rs1569198 (GG vs. AA)	0.53	0.05-6.17	0.614
IFNG rs1861494 (TC vs. TT)	1.24	0.56-2.79	0.596
IFNG rs1861494 (CC vs. TT)	1.01	0.31-3.32	0.983
IFNG rs2430561 (TA vs. TT)	0.44	0.18-1.07	0.070
IFNG rs2430561 (AA vs. TT)	0.00	NA	1.000
IFNG rs2069705 (AG vs. GG)	0.36	0.16-0.82	0.015
IFNG rs2069705 (AA vs. GG)	1251993003.21	NA	0.999
HIF1A rs2301104 (GC vs. GG)	0.49	0.14-1.73	0.268
HIF1A rs72714570 (GC vs. CC)	0.54	0.23-1.29	0.164
HIF1A rs72714570 (GG vs. CC)	0.88	0.05-14.62	0.931
HIF1A rs2301113 (CA vs. AA)	0.93	0.41-2.08	0.857
HIF1A rs2301113 (CC vs. AA)	1.00	0.32-3.16	1.000
HIF1A rs11549465 (TC vs. CC)	1.70	0.56-5.15	0.348
HIF1A rs2057482 (CT vs. CC)	1.70	0.78-3.71	0.182
HIF1A rs2057482 (TT vs. CC)	1.28	0.17-9.61	0.813

CTNNB1 rs11564465 (TT vs. CC)	2625146619.63	NA	0.999
CTNNB1 rs4135385 (AG vs. GG)	0.49	0.16-1.54	0.222
CTNNB1 rs4135385 (AA vs. GG)	1.03	0.27-3.99	0.968
CTNNB1 rs2293303 (CT vs. CC)	1.17	0.39-3.53	0.778
CTNNB1 rs2293303 (TT vs. CC)	2129489565.58	NA	0.999
SERPINE1 rs2227631 (GA vs. GG)	1.33	0.46-3.90	0.599
SERPINE1 rs2227631 (AA vs. GG)	1.04	0.30-3.58	0.954
SERPINE1 rs6092 (GA vs. GG)	3.17	0.75-13.50	0.118
SERPINE1 rs6092 (AA vs. GG)	0.00	NA	1.000
SERPINE1 rs6090 (AG vs. GG)	1.19	0.07-19.88	0.902
SERPINE1 rs2227667 (GA vs. AA)	0.62	0.20-1.89	0.400
SERPINE1 rs2227667 (GG vs. AA)	1.29	0.34-4.82	0.709
SERPINE1 rs2227692 (TC vs. CC)	0.56	0.20-1.57	0.272
SERPINE1 rs2227692 (TT vs. CC)	1.54	0.30-7.87	0.605
SERPINE1 rs7242 (GT vs. TT)	1.66	0.52-5.29	0.388
SERPINE1 rs7242 (GG vs. TT)	1.10	0.28-4.26	0.890
DKK1 rs11001553 (CT vs. CC)	1.02	0.31-3.42	0.972
DKK1 rs2241529 (GA vs. AA)	0.90	0.33-2.48	0.839
DKK1 rs2241529 (GG vs. AA)	1.50	0.34-6.61	0.592
DKK1 rs1569198 (GA vs. AA)	1.01	0.36-2.84	0.987
DKK1 rs1569198 (GG vs. AA)	1.21	0.22-6.71	0.827
IFNG rs1861494 (TC vs. TT)	0.81	0.29-2.32	0.701
IFNG rs1861494 (CC vs. TT)	0.27	0.06-1.15	0.075
IFNG rs2430561 (TA vs. TT)	4.05	1.13-14.57	0.032
IFNG rs2430561 (AA vs. TT)	-	-	-
IFNG rs2069705 (AG vs. GG)	3.54	1.15-10.87	0.028
IFNG rs2069705 (AA vs. GG)	0.00	NA	1.000
HIF1A rs2301104 (GC vs. GG)	6.85	0.76-62.06	0.087
HIF1A rs72714570 (GC vs. CC)	1.65	0.56-4.86	0.366
HIF1A rs72714570 (GG vs. CC)	0.00	NA	1.000
HIF1A rs2301113 (CA vs. AA)	1.52	0.54-4.28	0.431
HIF1A rs2301113 (CC vs. AA)	1.01	0.26-3.96	0.986
HIF1A rs11549465 (TC vs. CC)	3.33	0.60-18.51	0.169
HIF1A rs2057482 (CT vs. CC)	1.15	0.42-3.14	0.791
HIF1A rs2057482 (TT vs. CC)	1.25	0.07-21.26	0.877

Supplementary Table 3G The association between each SNP and capsule formation stratified by extrahepatic metastasis

No

Yes

SNP (genotype)	OR	95%CI	P value
SLC2A1 rs841858 (GT vs. GG)	2.16	1.01-4.62	0.048
SLC2A1 rs841858 (TT vs. GG)	4.12	0.42-40.73	0.226
SLC2A1 rs3754219 (CA vs. AA)	0.91	0.45-1.85	0.792
SLC2A1 rs3754219 (CC vs. AA)	0.65	0.25-1.67	0.367
SLC2A1 rs841853 (CA vs. CC)	1.08	0.54-2.14	0.836
SLC2A1 rs841853 (AA vs. CC)	0.75	0.20-2.81	0.667
SLC2A1 rs841847 (TC vs. CC)	1.51	0.70-3.27	0.295
SLC2A1 rs841847 (TT vs. CC)	2.52	0.44-14.27	0.297
SLC2A1 rs7512565 (CT vs. CC)	0.84	0.43-1.64	0.617
SLC2A1 rs7512565 (TT vs. CC)	0.26	0.03-2.36	0.229
SLC2A1 rs2297977 (GT vs. GG)	1.93	0.95-3.95	0.071
SLC2A1 rs2297977 (TT vs. GG)	2.32	0.53-10.19	0.266
STAT1 rs3771300 (GT vs. TT)	1.94	0.99-3.83	0.055
STAT1 rs3771300 (GG vs. TT)	1.32	0.49-3.60	0.583
STAT1 rs1914408 (CT vs. CC)	2.02	1.02-3.98	0.043
STAT1 rs1914408 (TT vs. CC)	1.22	0.45-3.25	0.699
STAT1 rs2066804 (AG vs. GG)	1.08	0.52-2.22	0.841
STAT1 rs2066804 (AA vs. GG)	0.78	0.35-1.74	0.537
STAT1 rs1547550 (CG vs. GG)	2.87	1.16-7.11	0.023
STAT1 rs1547550 (CC vs. GG)	2182308121.05	NA	0.999
STAT1 rs2280232 (CA vs. AA)	1.35	0.66-2.76	0.409
STAT1 rs2280232 (CC vs. AA)	0.00	NA	0.999
STAT1 rs34997637 (GA vs. AA)	1.53	0.71-3.26	0.276
STAT1 rs34997637 (GG vs. AA)	2.65	1.14-6.15	0.024
STAT1 rs12693591 (CA vs. CC)	1.06	0.56-2.03	0.856
STAT1 rs12693591 (AA vs. CC)	0.81	0.24-2.75	0.730
STAT1 rs10173099 (TC vs. TT)	1.30	0.66-2.56	0.445
STAT1 rs10173099 (CC vs. TT)	2.93	1.10-7.77	0.031
STAT1 rs2066802 (AG vs. AA)	1.03	0.54-1.98	0.923
STAT1 rs2066802 (GG vs. AA)	1.65	0.48-5.59	0.425
STAT1 rs10208033 (TC vs. CC)	1.97	1.00-3.90	0.051
STAT1 rs10208033 (TT vs. CC)	1.96	0.76-5.00	0.162
STAT1 rs1467199 (GC vs. CC)	0.91	0.44-1.89	0.794
STAT1 rs1467199 (GG vs. CC)	0.65	0.28-1.51	0.318
CTNNB1 rs3864004 (GA vs. GG)	0.77	0.40-1.49	0.439
CTNNB1 rs3864004 (AA vs. GG)	2.14	0.50-9.09	0.303
CTNNB1 rs75288535 (GA vs. AA)	0.66	0.32-1.38	0.273
CTNNB1 rs75288535 (GG vs. AA)	1.25	0.36-4.33	0.730
CTNNB1 rs1798802 (GA vs. GG)	0.86	0.44-1.65	0.639
CTNNB1 rs1798802 (AA vs. GG)	1.67	0.54-5.14	0.374
CTNNB1 rs11564465 (TC vs. CC)	0.91	0.48-1.76	0.785

SNP (genotype)	OR	95%CI	P value
SLC2A1 rs841858 (GT vs. GG)	1.94	0.32-11.76	0.469
SLC2A1 rs841858 (TT vs. GG)	-	-	-
SLC2A1 rs3754219 (CA vs. AA)	1.60	0.24-10.81	0.630
SLC2A1 rs3754219 (CC vs. AA)	2.67	0.16-45.14	0.497
SLC2A1 rs841853 (CA vs. CC)	0.88	0.13-5.82	0.890
SLC2A1 rs841853 (AA vs. CC)	-	-	-
SLC2A1 rs841847 (TC vs. CC)	0.89	0.10-7.86	0.916
SLC2A1 rs841847 (TT vs. CC)	-	-	-
SLC2A1 rs7512565 (CT vs. CC)	0.16	0.02-1.07	0.059
SLC2A1 rs7512565 (TT vs. CC)	-	-	-
SLC2A1 rs2297977 (GT vs. GG)	8.00	0.71-90.00	0.092
SLC2A1 rs2297977 (TT vs. GG)	1.60	0.08-31.77	0.758
STAT1 rs3771300 (GT vs. TT)	0.08	0.01-0.93	0.043
STAT1 rs3771300 (GG vs. TT)	0.00	NA	0.999
STAT1 rs1914408 (CT vs. CC)	3.50	0.55-22.30	0.185
STAT1 rs1914408 (TT vs. CC)	0.00	NA	1.000
STAT1 rs2066804 (AG vs. GG)	4.50	0.37-54.16	0.236
STAT1 rs2066804 (AA vs. GG)	3.00	0.08-107.45	0.547
STAT1 rs1547550 (CG vs. GG)	0.22	0.03-1.60	0.135
STAT1 rs1547550 (CC vs. GG)	-	-	-
STAT1 rs2280232 (CA vs. AA)	4.57	0.41-51.14	0.217
STAT1 rs2280232 (CC vs. AA)	0.00	NA	1.000
STAT1 rs34997637 (GA vs. AA)	6.00	0.46-77.75	0.170
STAT1 rs34997637 (GG vs. AA)	2.00	0.11-35.81	0.638
STAT1 rs12693591 (CA vs. CC)	2.63	0.45-15.31	0.283
STAT1 rs12693591 (AA vs. CC)	-	-	-
STAT1 rs10173099 (TC vs. TT)	0.93	0.11-7.82	0.949
STAT1 rs10173099 (CC vs. TT)	0.22	0.01-3.98	0.307
STAT1 rs2066802 (AG vs. AA)	1.80	0.32-10.20	0.507
STAT1 rs2066802 (GG vs. AA)	-	-	-
STAT1 rs10208033 (TC vs. CC)	0.88	0.14-5.58	0.888
STAT1 rs10208033 (TT vs. CC)	0.00	NA	1.000
STAT1 rs1467199 (GC vs. CC)	2.10	0.25-17.59	0.494
STAT1 rs1467199 (GG vs. CC)	1.50	0.11-21.31	0.765
CTNNB1 rs3864004 (GA vs. GG)	0.46	0.08-2.76	0.394
CTNNB1 rs3864004 (AA vs. GG)	0.00	NA	1.000
CTNNB1 rs75288535 (GA vs. AA)	0.00	NA	0.999
CTNNB1 rs75288535 (GG vs. AA)	969284905.71	NA	1.000
CTNNB1 rs1798802 (GA vs. GG)	0.24	0.03-1.71	0.153
CTNNB1 rs1798802 (AA vs. GG)	0.00	NA	1.000
CTNNB1 rs11564465 (TC vs. CC)	2.00	0.27-14.70	0.496

CTNNB1 rs11564465 (TT vs. CC)	6.96	0.81-60.01	0.078
CTNNB1 rs4135385 (AG vs. GG)	0.86	0.41-1.82	0.694
CTNNB1 rs4135385 (AA vs. GG)	0.81	0.34-1.95	0.638
CTNNB1 rs2293303 (CT vs. CC)	0.96	0.45-2.08	0.923
CTNNB1 rs2293303 (TT vs. CC)	1866151973.64	NA	0.999
SERPINE1 rs2227631 (GA vs. GG)	0.99	0.49-1.98	0.972
SERPINE1 rs2227631 (AA vs. GG)	0.98	0.41-2.31	0.958
SERPINE1 rs6092 (GA vs. GG)	1.04	0.41-2.59	0.942
SERPINE1 rs6092 (AA vs. GG)	1839155974.94	NA	1.000
SERPINE1 rs6090 (AG vs. GG)	1.52	0.33-7.01	0.593
SERPINE1 rs2227667 (GA vs. AA)	0.71	0.35-1.41	0.325
SERPINE1 rs2227667 (GG vs. AA)	0.93	0.36-2.37	0.877
SERPINE1 rs2227692 (TC vs. CC)	0.53	0.27-1.03	0.061
SERPINE1 rs2227692 (TT vs. CC)	1.24	0.40-3.90	0.710
SERPINE1 rs7242 (GT vs. TT)	1.14	0.52-2.47	0.747
SERPINE1 rs7242 (GG vs. TT)	1.35	0.57-3.20	0.492
DKK1 rs11001553 (CT vs. CC)	0.89	0.40-2.00	0.777
DKK1 rs2241529 (GA vs. AA)	1.12	0.58-2.16	0.733
DKK1 rs2241529 (GG vs. AA)	0.81	0.28-2.36	0.694
DKK1 rs1569198 (GA vs. AA)	1.19	0.62-2.28	0.600
DKK1 rs1569198 (GG vs. AA)	0.95	0.24-3.78	0.945
IFNG rs1861494 (TC vs. TT)	1.06	0.55-2.07	0.859
IFNG rs1861494 (CC vs. TT)	0.57	0.21-1.52	0.258
IFNG rs2430561 (TA vs. TT)	1.03	0.50-2.14	0.940
IFNG rs2430561 (AA vs. TT)	0.00	NA	1.000
IFNG rs2069705 (AG vs. GG)	0.86	0.44-1.70	0.668
IFNG rs2069705 (AA vs. GG)	3.29	0.33-32.68	0.309
HIF1A rs2301104 (GC vs. GG)	0.84	0.28-2.53	0.753
HIF1A rs72714570 (GC vs. CC)	0.75	0.36-1.57	0.448
HIF1A rs72714570 (GG vs. CC)	0.52	0.05-5.85	0.594
HIF1A rs2301113 (CA vs. AA)	1.02	0.52-2.01	0.959
HIF1A rs2301113 (CC vs. AA)	1.06	0.43-2.61	0.905
HIF1A rs11549465 (TC vs. CC)	2.12	0.79-5.71	0.136
HIF1A rs2057482 (CT vs. CC)	1.51	0.79-2.88	0.217
HIF1A rs2057482 (TT vs. CC)	1.32	0.25-6.87	0.744

CTNNB1 rs11564465 (TT vs. CC)	0.00	NA	1.000
CTNNB1 rs4135385 (AG vs. GG)	0.80	0.08-8.47	0.853
CTNNB1 rs4135385 (AA vs. GG)	0.07	0.01-0.97	0.047
CTNNB1 rs2293303 (CT vs. CC)	0.40	0.03-5.25	0.485
CTNNB1 rs2293303 (TT vs. CC)	-	-	-
SERPINE1 rs2227631 (GA vs. GG)	0.54	0.08-3.53	0.517
SERPINE1 rs2227631 (AA vs. GG)	0.71	0.04-14.35	0.826
SERPINE1 rs6092 (GA vs. GG)	2.00	0.27-14.70	0.496
SERPINE1 rs6092 (AA vs. GG)	0.00	NA	1.000
SERPINE1 rs6090 (AG vs. GG)	0.90	0.05-16.59	0.944
SERPINE1 rs2227667 (GA vs. AA)	0.50	0.02-10.25	0.653
SERPINE1 rs2227667 (GG vs. AA)	6.00	0.18-196.28	0.314
SERPINE1 rs2227692 (TC vs. CC)	3.50	0.47-25.90	0.220
SERPINE1 rs2227692 (TT vs. CC)	4038687107.13	NA	0.999
SERPINE1 rs7242 (GT vs. TT)	0.30	0.04-2.11	0.227
SERPINE1 rs7242 (GG vs. TT)	-	-	-
DKK1 rs11001553 (CT vs. CC)	1794972047.61	NA	0.999
DKK1 rs2241529 (GA vs. AA)	0.64	0.10-4.10	0.640
DKK1 rs2241529 (GG vs. AA)	1384692722.44	NA	1.000
DKK1 rs1569198 (GA vs. AA)	0.56	0.09-3.52	0.538
DKK1 rs1569198 (GG vs. AA)	-	-	-
IFNG rs1861494 (TC vs. TT)	0.94	0.13-6.88	0.949
IFNG rs1861494 (CC vs. TT)	0.50	0.05-5.15	0.560
IFNG rs2430561 (TA vs. TT)	0.52	0.07-4.00	0.529
IFNG rs2430561 (AA vs. TT)	-	-	-
IFNG rs2069705 (AG vs. GG)	0.56	0.09-3.52	0.538
IFNG rs2069705 (AA vs. GG)	-	-	-
HIF1A rs2301104 (GC vs. GG)	3.38	0.29-39.32	0.332
HIF1A rs72714570 (GC vs. CC)	1.25	0.22-7.08	0.801
HIF1A rs72714570 (GG vs. CC)	-	-	-
HIF1A rs2301113 (CA vs. AA)	2.19	0.36-13.23	0.394
HIF1A rs2301113 (CC vs. AA)	0.00	NA	1.000
HIF1A rs11549465 (TC vs. CC)	2.00	0.15-26.19	0.597
HIF1A rs2057482 (CT vs. CC)	1.50	0.20-11.54	0.697
HIF1A rs2057482 (TT vs. CC)	-	-	-

Supplementary Table 3H The association between each SNP and capsule formation stratified by vascular invasion

No

Yes

SNP (genotype)	OR	95%CI	<i>P</i> value	SNP (genotype)	OR	95%CI	<i>P</i> value
SLC2A1 rs841858 (GT vs. GG)	1.91	0.86-4.25	0.113	SLC2A1 rs841858 (GT vs. GG)	2.89	0.69-12.07	0.147
SLC2A1 rs841858 (TT vs. GG)	2.36	0.21-26.95	0.488	SLC2A1 rs841858 (TT vs. GG)	3106682390.10	NA	1.000
SLC2A1 rs3754219 (CA vs. AA)	0.68	0.31-1.49	0.331	SLC2A1 rs3754219 (CA vs. AA)	2.75	0.69-10.92	0.150
SLC2A1 rs3754219 (CC vs. AA)	0.57	0.20-1.60	0.285	SLC2A1 rs3754219 (CC vs. AA)	1.65	0.26-10.31	0.592
SLC2A1 rs841853 (CA vs. CC)	1.42	0.65-3.12	0.378	SLC2A1 rs841853 (CA vs. CC)	0.58	0.17-1.97	0.381
SLC2A1 rs841853 (AA vs. CC)	1.07	0.25-4.53	0.929	SLC2A1 rs841853 (AA vs. CC)	0.00	NA	0.999
SLC2A1 rs841847 (TC vs. CC)	1.26	0.53-2.99	0.597	SLC2A1 rs841847 (TC vs. CC)	1.97	0.51-7.68	0.328
SLC2A1 rs841847 (TT vs. CC)	4.33	0.47-40.05	0.197	SLC2A1 rs841847 (TT vs. CC)	0.00	NA	1.000
SLC2A1 rs7512565 (CT vs. CC)	0.89	0.44-1.82	0.753	SLC2A1 rs7512565 (CT vs. CC)	0.31	0.08-1.19	0.087
SLC2A1 rs7512565 (TT vs. CC)	0.47	0.04-5.33	0.538	SLC2A1 rs7512565 (TT vs. CC)	0.00	NA	0.999
SLC2A1 rs2297977 (GT vs. GG)	1.65	0.77-3.54	0.200	SLC2A1 rs2297977 (GT vs. GG)	5.83	1.25-27.17	0.025
SLC2A1 rs2297977 (TT vs. GG)	1.53	0.32-7.23	0.593	SLC2A1 rs2297977 (TT vs. GG)	5.00	0.41-61.52	0.209
STAT1 rs3771300 (GT vs. TT)	1.78	0.84-3.76	0.133	STAT1 rs3771300 (GT vs. TT)	0.94	0.28-3.14	0.920
STAT1 rs3771300 (GG vs. TT)	1.43	0.47-4.36	0.531	STAT1 rs3771300 (GG vs. TT)	0.24	0.02-2.49	0.234
STAT1 rs1914408 (CT vs. CC)	1.76	0.84-3.65	0.132	STAT1 rs1914408 (CT vs. CC)	3.75	1.00-14.02	0.049
STAT1 rs1914408 (TT vs. CC)	0.94	0.31-2.83	0.911	STAT1 rs1914408 (TT vs. CC)	1.67	0.23-11.93	0.611
STAT1 rs2066804 (AG vs. GG)	0.92	0.41-2.06	0.832	STAT1 rs2066804 (AG vs. GG)	2.41	0.64-9.03	0.193
STAT1 rs2066804 (AA vs. GG)	0.68	0.27-1.71	0.408	STAT1 rs2066804 (AA vs. GG)	1.24	0.26-5.91	0.789
STAT1 rs1547550 (CG vs. GG)	1.74	0.69-4.36	0.238	STAT1 rs1547550 (CG vs. GG)	2.08	0.48-8.99	0.325
STAT1 rs1547550 (CC vs. GG)	1805530706.72	NA	0.999	STAT1 rs1547550 (CC vs. GG)	-	-	-
STAT1 rs2280232 (CA vs. AA)	1.10	0.49-2.49	0.823	STAT1 rs2280232 (CA vs. AA)	3.67	1.04-12.90	0.043
STAT1 rs2280232 (CC vs. AA)	0.00	NA	0.999	STAT1 rs2280232 (CC vs. AA)	0.00	NA	1.000
STAT1 rs34997637 (GA vs. AA)	2.03	0.90-4.57	0.090	STAT1 rs34997637 (GA vs. AA)	1.88	0.32-11.17	0.490
STAT1 rs34997637 (GG vs. AA)	2.53	1.01-6.33	0.047	STAT1 rs34997637 (GG vs. AA)	3.43	0.52-22.80	0.202
STAT1 rs12693591 (CA vs. CC)	1.19	0.59-2.41	0.633	STAT1 rs12693591 (CA vs. CC)	1.25	0.38-4.13	0.715
STAT1 rs12693591 (AA vs. CC)	0.82	0.20-3.33	0.785	STAT1 rs12693591 (AA vs. CC)	0.83	0.07-10.55	0.888
STAT1 rs10173099 (TC vs. TT)	1.33	0.64-2.75	0.450	STAT1 rs10173099 (TC vs. TT)	1.33	0.35-5.03	0.671
STAT1 rs10173099 (CC vs. TT)	2.48	0.82-7.55	0.110	STAT1 rs10173099 (CC vs. TT)	2.00	0.41-9.71	0.390
STAT1 rs2066802 (AG vs. AA)	1.07	0.53-2.17	0.857	STAT1 rs2066802 (AG vs. AA)	1.29	0.38-4.39	0.681
STAT1 rs2066802 (GG vs. AA)	1.37	0.29-6.56	0.693	STAT1 rs2066802 (GG vs. AA)	2.67	0.37-19.06	0.328
STAT1 rs10208033 (TC vs. CC)	2.15	1.02-4.53	0.043	STAT1 rs10208033 (TC vs. CC)	1.02	0.29-3.65	0.975
STAT1 rs10208033 (TT vs. CC)	1.46	0.50-4.25	0.493	STAT1 rs10208033 (TT vs. CC)	2.33	0.41-13.17	0.337
STAT1 rs1467199 (GC vs. CC)	1.10	0.49-2.49	0.819	STAT1 rs1467199 (GC vs. CC)	0.80	0.21-3.06	0.745
STAT1 rs1467199 (GG vs. CC)	0.64	0.26-1.61	0.346	STAT1 rs1467199 (GG vs. CC)	0.89	0.17-4.63	0.889
CTNNB1 rs3864004 (GA vs. GG)	0.90	0.43-1.85	0.766	CTNNB1 rs3864004 (GA vs. GG)	0.47	0.15-1.55	0.217
CTNNB1 rs3864004 (AA vs. GG)	1.22	0.30-4.89	0.782	CTNNB1 rs3864004 (AA vs. GG)	1750097746.42	NA	1.000
CTNNB1 rs75288535 (GA vs. AA)	0.59	0.25-1.35	0.210	CTNNB1 rs75288535 (GA vs. AA)	0.47	0.12-1.79	0.266
CTNNB1 rs75288535 (GG vs. AA)	0.88	0.24-3.24	0.845	CTNNB1 rs75288535 (GG vs. AA)	2077039083.67	NA	0.999
CTNNB1 rs1798802 (GA vs. GG)	0.88	0.43-1.79	0.715	CTNNB1 rs1798802 (GA vs. GG)	0.50	0.15-1.68	0.261
CTNNB1 rs1798802 (AA vs. GG)	2.00	0.54-7.36	0.297	CTNNB1 rs1798802 (AA vs. GG)	0.33	0.03-3.68	0.370
CTNNB1 rs11564465 (TC vs. CC)	1.07	0.52-2.20	0.855	CTNNB1 rs11564465 (TC vs. CC)	0.77	0.22-2.67	0.683

CTNNB1 rs11564465 (TT vs. CC)	2.05	0.36-11.83	0.422
CTNNB1 rs4135385 (AG vs. GG)	0.87	0.38-1.98	0.732
CTNNB1 rs4135385 (AA vs. GG)	0.85	0.33-2.15	0.723
CTNNB1 rs2293303 (CT vs. CC)	1.10	0.46-2.64	0.824
CTNNB1 rs2293303 (TT vs. CC)	1645955500.26	NA	0.999
SERPINE1 rs2227631 (GA vs. GG)	0.79	0.37-1.69	0.540
SERPINE1 rs2227631 (AA vs. GG)	0.84	0.32-2.20	0.723
SERPINE1 rs6092 (GA vs. GG)	1.13	0.41-3.12	0.821
SERPINE1 rs6092 (AA vs. GG)	1615474842.85	NA	1.000
SERPINE1 rs6090 (AG vs. GG)	1.33	0.29-6.20	0.714
SERPINE1 rs2227667 (GA vs. AA)	0.66	0.30-1.42	0.284
SERPINE1 rs2227667 (GG vs. AA)	1.45	0.50-4.17	0.496
SERPINE1 rs2227692 (TC vs. CC)	0.52	0.25-1.09	0.082
SERPINE1 rs2227692 (TT vs. CC)	3.41	0.67-17.41	0.140
SERPINE1 rs7242 (GT vs. TT)	0.65	0.28-1.51	0.314
SERPINE1 rs7242 (GG vs. TT)	1.17	0.45-3.03	0.751
DKK1 rs11001553 (CT vs. CC)	0.88	0.38-2.04	0.763
DKK1 rs2241529 (GA vs. AA)	0.73	0.36-1.51	0.400
DKK1 rs2241529 (GG vs. AA)	0.61	0.19-1.97	0.405
DKK1 rs1569198 (GA vs. AA)	0.81	0.40-1.65	0.560
DKK1 rs1569198 (GG vs. AA)	0.44	0.08-2.54	0.356
IFNG rs1861494 (TC vs. TT)	1.46	0.70-3.05	0.313
IFNG rs1861494 (CC vs. TT)	0.63	0.22-1.83	0.392
IFNG rs2430561 (TA vs. TT)	1.09	0.49-2.44	0.837
IFNG rs2430561 (AA vs. TT)	0.00	NA	1.000
IFNG rs2069705 (AG vs. GG)	0.71	0.34-1.47	0.352
IFNG rs2069705 (AA vs. GG)	2.67	0.27-26.72	0.402
HIF1A rs2301104 (GC vs. GG)	1.55	0.42-5.77	0.513
HIF1A rs72714570 (GC vs. CC)	0.74	0.33-1.63	0.450
HIF1A rs72714570 (GG vs. CC)	0.44	0.04-5.04	0.511
HIF1A rs2301113 (CA vs. AA)	1.03	0.49-2.17	0.933
HIF1A rs2301113 (CC vs. AA)	1.00	0.35-2.82	1.000
HIF1A rs11549465 (TC vs. CC)	2.45	0.87-6.91	0.089
HIF1A rs2057482 (CT vs. CC)	2.01	0.98-4.12	0.058
HIF1A rs2057482 (TT vs. CC)	1.94	0.31-12.28	0.481

CTNNB1 rs11564465 (TT vs. CC)	2496642938.95	NA	0.999
CTNNB1 rs4135385 (AG vs. GG)	0.67	0.18-2.59	0.565
CTNNB1 rs4135385 (AA vs. GG)	0.10	0.01-0.99	0.049
CTNNB1 rs2293303 (CT vs. CC)	0.53	0.12-2.31	0.394
CTNNB1 rs2293303 (TT vs. CC)	2261664779.99	NA	1.000
SERPINE1 rs2227631 (GA vs. GG)	1.00	0.27-3.69	1.000
SERPINE1 rs2227631 (AA vs. GG)	0.90	0.18-4.64	0.900
SERPINE1 rs6092 (GA vs. GG)	1.64	0.40-6.71	0.489
SERPINE1 rs6092 (AA vs. GG)	0.00	NA	1.000
SERPINE1 rs6090 (AG vs. GG)	1.47	0.09-25.03	0.788
SERPINE1 rs2227667 (GA vs. AA)	0.71	0.18-2.78	0.624
SERPINE1 rs2227667 (GG vs. AA)	1.11	0.23-5.45	0.897
SERPINE1 rs2227692 (TC vs. CC)	1.15	0.34-3.90	0.818
SERPINE1 rs2227692 (TT vs. CC)	0.75	0.11-5.11	0.769
SERPINE1 rs7242 (GT vs. TT)	2.42	0.60-9.82	0.215
SERPINE1 rs7242 (GG vs. TT)	0.64	0.09-4.58	0.659
DKK1 rs11001553 (CT vs. CC)	1.59	0.20-12.36	0.659
DKK1 rs2241529 (GA vs. AA)	2.38	0.69-8.20	0.171
DKK1 rs2241529 (GG vs. AA)	2.11	0.26-17.49	0.489
DKK1 rs1569198 (GA vs. AA)	2.40	0.68-8.49	0.174
DKK1 rs1569198 (GG vs. AA)	4.20	0.34-51.98	0.264
IFNG rs1861494 (TC vs. TT)	0.42	0.11-1.54	0.187
IFNG rs1861494 (CC vs. TT)	0.44	0.08-2.39	0.345
IFNG rs2430561 (TA vs. TT)	0.66	0.17-2.57	0.545
IFNG rs2430561 (AA vs. TT)	-	-	-
IFNG rs2069705 (AG vs. GG)	1.21	0.34-4.29	0.766
IFNG rs2069705 (AA vs. GG)	-	-	-
HIF1A rs2301104 (GC vs. GG)	0.85	0.18-4.03	0.835
HIF1A rs72714570 (GC vs. CC)	1.21	0.34-4.29	0.766
HIF1A rs72714570 (GG vs. CC)	-	-	-
HIF1A rs2301113 (CA vs. AA)	1.33	0.38-4.62	0.654
HIF1A rs2301113 (CC vs. AA)	0.98	0.18-5.24	0.976
HIF1A rs11549465 (TC vs. CC)	0.71	0.06-8.41	0.786
HIF1A rs2057482 (CT vs. CC)	0.48	0.13-1.85	0.285
HIF1A rs2057482 (TT vs. CC)	0.00	NA	1.000

Supplementary Table 3I The association between each SNP and capsule formation stratified by BCLC stage

BCLC 0

SNP (genotype)	OR	95%CI	P value
SLC2A1 rs841858 (GT vs. GG)	7.50	0.72-78.37	0.092
SLC2A1 rs841858 (TT vs. GG)	5.00	0.21-117.89	0.318
SLC2A1 rs3754219 (CA vs. AA)	0.44	0.05-4.37	0.487
SLC2A1 rs3754219 (CC vs. AA)	0.00	NA	0.999
SLC2A1 rs841853 (CA vs. CC)	0.00	NA	0.999
SLC2A1 rs841853 (AA vs. CC)	3230949685.70	NA	1.000
SLC2A1 rs841847 (TC vs. CC)	0.00	NA	0.999
SLC2A1 rs841847 (TT vs. CC)	3230949685.70	NA	1.000
SLC2A1 rs7512565 (CT vs. CC)	0.23	0.02-2.59	0.236
SLC2A1 rs7512565 (TT vs. CC)	-	-	-
SLC2A1 rs2297977 (GT vs. GG)	3.67	0.17-77.55	0.404
SLC2A1 rs2297977 (TT vs. GG)	7.33	0.48-111.19	0.151
STAT1 rs3771300 (GT vs. TT)	2.50	0.12-50.44	0.550
STAT1 rs3771300 (GG vs. TT)	1.25	0.09-17.98	0.870
STAT1 rs1914408 (CT vs. CC)	0.17	0.01-1.94	0.152
STAT1 rs1914408 (TT vs. CC)	0.00	NA	0.999
STAT1 rs2066804 (AG vs. GG)	0.27	0.02-3.02	0.286
STAT1 rs2066804 (AA vs. GG)	0.11	0.01-1.78	0.120
STAT1 rs1547550 (CG vs. GG)	5.50	0.61-49.54	0.128
STAT1 rs1547550 (CC vs. GG)	-	-	-
STAT1 rs2280232 (CA vs. AA)	1.50	0.18-12.78	0.711
STAT1 rs2280232 (CC vs. AA)	0.00	NA	1.000
STAT1 rs34997637 (GA vs. AA)	1615474808.61	NA	0.999
STAT1 rs34997637 (GG vs. AA)	1615474808.61	NA	0.999
STAT1 rs12693591 (CA vs. CC)	6.75	0.64-71.17	0.112
STAT1 rs12693591 (AA vs. CC)	2.25	0.13-38.81	0.577
STAT1 rs10173099 (TC vs. TT)	1.67	0.12-24.26	0.708
STAT1 rs10173099 (CC vs. TT)	7.50	0.46-122.70	0.158
STAT1 rs2066802 (AG vs. AA)	1.17	0.13-10.22	0.889
STAT1 rs2066802 (GG vs. AA)	1.17	0.07-18.35	0.913
STAT1 rs10208033 (TC vs. CC)	1346229059.24	NA	0.999
STAT1 rs10208033 (TT vs. CC)	1615474871.09	NA	0.999
STAT1 rs1467199 (GC vs. CC)	0.43	0.05-3.48	0.428
STAT1 rs1467199 (GG vs. CC)	0.00	NA	0.999
CTNNB1 rs3864004 (GA vs. GG)	1.17	0.17-8.09	0.876
CTNNB1 rs3864004 (AA vs. GG)	-	-	-
CTNNB1 rs75288535 (GA vs. AA)	0.00	NA	0.999
CTNNB1 rs75288535 (GG vs. AA)	0.00	NA	1.000
CTNNB1 rs1798802 (GA vs. GG)	0.86	0.12-5.94	0.876
CTNNB1 rs1798802 (AA vs. GG)	-	-	-
CTNNB1 rs11564465 (TC vs. CC)	1.60	0.23-11.27	0.637

BCLC A

SNP (genotype)	OR	95%CI	P value
SLC2A1 rs841858 (GT vs. GG)	1.31	0.31-5.53	0.711
SLC2A1 rs841858 (TT vs. GG)	-	-	-
SLC2A1 rs3754219 (CA vs. AA)	0.79	0.19-3.29	0.741
SLC2A1 rs3754219 (CC vs. AA)	3.57	0.31-40.75	0.305
SLC2A1 rs841853 (CA vs. CC)	1.50	0.36-6.23	0.577
SLC2A1 rs841853 (AA vs. CC)	0.00	NA	0.999
SLC2A1 rs841847 (TC vs. CC)	0.81	0.18-3.69	0.784
SLC2A1 rs841847 (TT vs. CC)	0.65	0.04-11.45	0.767
SLC2A1 rs7512565 (CT vs. CC)	0.78	0.20-3.01	0.716
SLC2A1 rs7512565 (TT vs. CC)	1076983228.57	NA	1.000
SLC2A1 rs2297977 (GT vs. GG)	1.28	0.35-4.73	0.709
SLC2A1 rs2297977 (TT vs. GG)	1242672956.04	NA	1.000
STAT1 rs3771300 (GT vs. TT)	4.13	0.97-17.63	0.056
STAT1 rs3771300 (GG vs. TT)	4.13	0.36-47.30	0.255
STAT1 rs1914408 (CT vs. CC)	2.89	0.66-12.57	0.157
STAT1 rs1914408 (TT vs. CC)	0.44	0.06-3.11	0.414
STAT1 rs2066804 (AG vs. GG)	1.96	0.38-9.93	0.414
STAT1 rs2066804 (AA vs. GG)	0.51	0.10-2.59	0.416
STAT1 rs1547550 (CG vs. GG)	6.56	0.72-59.85	0.095
STAT1 rs1547550 (CC vs. GG)	-	-	-
STAT1 rs2280232 (CA vs. AA)	1.02	0.20-5.13	0.982
STAT1 rs2280232 (CC vs. AA)	0.00	NA	0.999
STAT1 rs34997637 (GA vs. AA)	0.88	0.19-4.00	0.863
STAT1 rs34997637 (GG vs. AA)	1.50	0.30-7.43	0.619
STAT1 rs12693591 (CA vs. CC)	0.92	0.26-3.30	0.896
STAT1 rs12693591 (AA vs. CC)	-	-	-
STAT1 rs10173099 (TC vs. TT)	1.16	0.30-4.40	0.831
STAT1 rs10173099 (CC vs. TT)	1453927358.57	NA	0.999
STAT1 rs2066802 (AG vs. AA)	0.57	0.15-2.12	0.402
STAT1 rs2066802 (GG vs. AA)	923128481.63	NA	1.000
STAT1 rs10208033 (TC vs. CC)	2.34	0.60-9.20	0.224
STAT1 rs10208033 (TT vs. CC)	0.45	0.04-5.84	0.542
STAT1 rs1467199 (GC vs. CC)	1.83	0.37-8.98	0.455
STAT1 rs1467199 (GG vs. CC)	1.60	0.30-8.49	0.581
CTNNB1 rs3864004 (GA vs. GG)	1.50	0.34-6.58	0.591
CTNNB1 rs3864004 (AA vs. GG)	0.50	0.07-3.65	0.494
CTNNB1 rs75288535 (GA vs. AA)	2.02	0.43-9.46	0.371
CTNNB1 rs75288535 (GG vs. AA)	1400078197.14	NA	1.000
CTNNB1 rs1798802 (GA vs. GG)	1.60	0.38-6.82	0.525
CTNNB1 rs1798802 (AA vs. GG)	1.19	0.20-6.99	0.851
CTNNB1 rs11564465 (TC vs. CC)	0.70	0.18-2.75	0.609

CTNNB1 rs11564465 (TT vs. CC)	-	-	-
CTNNB1 rs4135385 (AG vs. GG)	0.43	0.05-3.48	0.428
CTNNB1 rs4135385 (AA vs. GG)	0.00	NA	0.999
CTNNB1 rs2293303 (CT vs. CC)	6.00	0.42-85.25	0.186
CTNNB1 rs2293303 (TT vs. CC)	-	-	-
SERPINE1 rs2227631 (GA vs. GG)	4.17	0.36-48.44	0.254
SERPINE1 rs2227631 (AA vs. GG)	0.00	NA	0.999
SERPINE1 rs6092 (GA vs. GG)	0.00	NA	0.999
SERPINE1 rs6092 (AA vs. GG)	-	-	-
SERPINE1 rs6090 (AG vs. GG)	0.00	NA	1.000
SERPINE1 rs2227667 (GA vs. AA)	1384692664.66	NA	0.999
SERPINE1 rs2227667 (GG vs. AA)	1.00	NA	1.000
SERPINE1 rs2227692 (TC vs. CC)	3.13	0.28-35.16	0.356
SERPINE1 rs2227692 (TT vs. CC)	-	-	-
SERPINE1 rs7242 (GT vs. TT)	1346228976.87	NA	0.999
SERPINE1 rs7242 (GG vs. TT)	403868693.06	NA	0.999
DKK1 rs11001553 (CT vs. CC)	0.00	NA	0.999
DKK1 rs2241529 (GA vs. AA)	0.21	0.02-2.60	0.223
DKK1 rs2241529 (GG vs. AA)	2692458071.42	NA	0.999
DKK1 rs1569198 (GA vs. AA)	1.07	0.13-8.79	0.952
DKK1 rs1569198 (GG vs. AA)	4307932914.27	NA	1.000
IFNG rs1861494 (TC vs. TT)	0.28	0.03-3.20	0.305
IFNG rs1861494 (CC vs. TT)	0.00	NA	1.000
IFNG rs2430561 (TA vs. TT)	5.00	0.55-45.39	0.153
IFNG rs2430561 (AA vs. TT)	0.00	NA	1.000
IFNG rs2069705 (AG vs. GG)	3.33	0.32-34.83	0.315
IFNG rs2069705 (AA vs. GG)	8077374214.26	NA	0.999
HIF1A rs2301104 (GC vs. GG)	3.00	0.15-59.89	0.472
HIF1A rs72714570 (GC vs. CC)	6.00	0.42-85.25	0.186
HIF1A rs72714570 (GG vs. CC)	-	-	-
HIF1A rs2301113 (CA vs. AA)	2.00	0.16-24.33	0.587
HIF1A rs2301113 (CC vs. AA)	4.00	0.12-136.96	0.442
HIF1A rs11549465 (TC vs. CC)	1.67	0.20-14.05	0.639
HIF1A rs2057482 (CT vs. CC)	2.00	0.26-15.38	0.505
HIF1A rs2057482 (TT vs. CC)	0.00	NA	1.000

CTNNB1 rs11564465 (TT vs. CC)	1.20	0.10-15.20	0.888
CTNNB1 rs4135385 (AG vs. GG)	2.14	0.43-10.74	0.354
CTNNB1 rs4135385 (AA vs. GG)	2.19	0.36-13.23	0.394
CTNNB1 rs2293303 (CT vs. CC)	1.20	0.24-5.96	0.820
CTNNB1 rs2293303 (TT vs. CC)	1166731830.95	NA	1.000
SERPINE1 rs2227631 (GA vs. GG)	0.27	0.05-1.57	0.146
SERPINE1 rs2227631 (AA vs. GG)	0.33	0.04-2.87	0.318
SERPINE1 rs6092 (GA vs. GG)	3.16	0.32-31.29	0.326
SERPINE1 rs6092 (AA vs. GG)	1275374875.94	NA	1.000
SERPINE1 rs6090 (AG vs. GG)	1292379874.28	NA	0.999
SERPINE1 rs2227667 (GA vs. AA)	1.08	0.28-4.21	0.908
SERPINE1 rs2227667 (GG vs. AA)	0.67	0.07-6.11	0.720
SERPINE1 rs2227692 (TC vs. CC)	0.50	0.13-1.92	0.313
SERPINE1 rs2227692 (TT vs. CC)	1.00	0.08-13.37	1.000
SERPINE1 rs7242 (GT vs. TT)	0.44	0.07-2.89	0.396
SERPINE1 rs7242 (GG vs. TT)	0.64	0.09-4.66	0.659
DKK1 rs11001553 (CT vs. CC)	0.73	0.18-2.99	0.665
DKK1 rs2241529 (GA vs. AA)	1.10	0.26-4.65	0.897
DKK1 rs2241529 (GG vs. AA)	0.00	NA	0.999
DKK1 rs1569198 (GA vs. AA)	0.58	0.15-2.32	0.445
DKK1 rs1569198 (GG vs. AA)	0.00	NA	0.999
IFNG rs1861494 (TC vs. TT)	2.31	0.57-9.41	0.242
IFNG rs1861494 (CC vs. TT)	0.59	0.08-4.50	0.613
IFNG rs2430561 (TA vs. TT)	0.38	0.09-1.54	0.174
IFNG rs2430561 (AA vs. TT)	-	-	-
IFNG rs2069705 (AG vs. GG)	0.41	0.11-1.54	0.187
IFNG rs2069705 (AA vs. GG)	-	-	-
HIF1A rs2301104 (GC vs. GG)	1230837975.51	NA	0.999
HIF1A rs72714570 (GC vs. CC)	0.96	0.24-3.83	0.957
HIF1A rs72714570 (GG vs. CC)	1110638954.46	NA	1.000
HIF1A rs2301113 (CA vs. AA)	1.75	0.40-7.66	0.458
HIF1A rs2301113 (CC vs. AA)	1.09	0.21-5.76	0.916
HIF1A rs11549465 (TC vs. CC)	0.70	0.09-5.58	0.736
HIF1A rs2057482 (CT vs. CC)	2.52	0.62-10.29	0.198
HIF1A rs2057482 (TT vs. CC)	0.92	0.05-16.49	0.953

BCLC B

SNP (genotype)	OR	95%CI	P value
SLC2A1 rs841858 (GT vs. GG)	2.11	0.59-7.47	0.249
SLC2A1 rs841858 (TT vs. GG)	2125624793.23	NA	1.000
SLC2A1 rs3754219 (CA vs. AA)	1.05	0.32-3.44	0.936
SLC2A1 rs3754219 (CC vs. AA)	0.30	0.06-1.47	0.137
SLC2A1 rs841853 (CA vs. CC)	1.43	0.41-5.01	0.580
SLC2A1 rs841853 (AA vs. CC)	1.83	0.28-12.19	0.531
SLC2A1 rs841847 (TC vs. CC)	3.32	0.76-14.48	0.111

BCLC C

SNP (genotype)	OR	95%CI	P value
SLC2A1 rs841858 (GT vs. GG)	2.40	0.69-8.40	0.171
SLC2A1 rs841858 (TT vs. GG)	2423212264.28	NA	1.000
SLC2A1 rs3754219 (CA vs. AA)	1.22	0.39-3.79	0.728
SLC2A1 rs3754219 (CC vs. AA)	1.15	0.26-5.12	0.858
SLC2A1 rs841853 (CA vs. CC)	0.75	0.27-2.13	0.593
SLC2A1 rs841853 (AA vs. CC)	0.00	NA	0.999
SLC2A1 rs841847 (TC vs. CC)	1.47	0.46-4.71	0.517

SLC2A1 rs841847 (TT vs. CC)	2295674776.68	NA	0.999
SLC2A1 rs7512565 (CT vs. CC)	1.62	0.53-4.94	0.399
SLC2A1 rs7512565 (TT vs. CC)	0.00	NA	0.999
SLC2A1 rs2297977 (GT vs. GG)	1.50	0.47-4.84	0.497
SLC2A1 rs2297977 (TT vs. GG)	0.58	0.05-6.98	0.670
STAT1 rs3771300 (GT vs. TT)	1.60	0.51-4.99	0.420
STAT1 rs3771300 (GG vs. TT)	1.31	0.27-6.24	0.737
STAT1 rs1914408 (CT vs. CC)	1.80	0.59-5.48	0.300
STAT1 rs1914408 (TT vs. CC)	3.00	0.47-19.04	0.244
STAT1 rs2066804 (AG vs. GG)	0.89	0.27-2.89	0.845
STAT1 rs2066804 (AA vs. GG)	1.56	0.36-6.69	0.553
STAT1 rs1547550 (CG vs. GG)	0.75	0.12-4.88	0.763
STAT1 rs1547550 (CC vs. GG)	1817409198.21	NA	0.999
STAT1 rs2280232 (CA vs. AA)	0.71	0.20-2.58	0.608
STAT1 rs2280232 (CC vs. AA)	-	-	-
STAT1 rs34997637 (GA vs. AA)	1.97	0.57-6.88	0.286
STAT1 rs34997637 (GG vs. AA)	2.44	0.57-10.45	0.228
STAT1 rs12693591 (CA vs. CC)	0.98	0.33-2.94	0.974
STAT1 rs12693591 (AA vs. CC)	1.07	0.19-6.22	0.939
STAT1 rs10173099 (TC vs. TT)	1.61	0.53-4.93	0.403
STAT1 rs10173099 (CC vs. TT)	1.36	0.28-6.68	0.702
STAT1 rs2066802 (AG vs. AA)	1.54	0.52-4.60	0.436
STAT1 rs2066802 (GG vs. AA)	1.29	0.16-10.30	0.813
STAT1 rs10208033 (TC vs. CC)	2.37	0.72-7.78	0.155
STAT1 rs10208033 (TT vs. CC)	2.49	0.61-10.18	0.205
STAT1 rs1467199 (GC vs. CC)	1.17	0.35-3.97	0.801
STAT1 rs1467199 (GG vs. CC)	0.41	0.10-1.64	0.207
CTNNB1 rs3864004 (GA vs. GG)	0.71	0.23-2.15	0.540
CTNNB1 rs3864004 (AA vs. GG)	1710502774.78	NA	0.999
CTNNB1 rs75288535 (GA vs. AA)	0.88	0.23-3.36	0.848
CTNNB1 rs75288535 (GG vs. AA)	0.79	0.16-4.00	0.775
CTNNB1 rs1798802 (GA vs. GG)	0.71	0.24-2.11	0.542
CTNNB1 rs1798802 (AA vs. GG)	1730865903.06	NA	0.999
CTNNB1 rs11564465 (TC vs. CC)	1.46	0.48-4.43	0.506
CTNNB1 rs11564465 (TT vs. CC)	2120310731.24	NA	0.999
CTNNB1 rs4135385 (AG vs. GG)	0.56	0.16-1.92	0.352
CTNNB1 rs4135385 (AA vs. GG)	1.19	0.29-4.92	0.815
CTNNB1 rs2293303 (CT vs. CC)	0.91	0.24-3.40	0.887
CTNNB1 rs2293303 (TT vs. CC)	1762336192.20	NA	1.000
SERPINE1 rs2227631 (GA vs. GG)	0.75	0.23-2.50	0.639
SERPINE1 rs2227631 (AA vs. GG)	1.14	0.31-4.25	0.842
SERPINE1 rs6092 (GA vs. GG)	1.08	0.20-5.85	0.929
SERPINE1 rs6092 (AA vs. GG)	-	-	-
SERPINE1 rs6090 (AG vs. GG)	0.00	NA	1.000

SLC2A1 rs841847 (TT vs. CC)	0.00	NA	1.000
SLC2A1 rs7512565 (CT vs. CC)	0.46	0.16-1.33	0.149
SLC2A1 rs7512565 (TT vs. CC)	0.00	NA	0.999
SLC2A1 rs2297977 (GT vs. GG)	3.07	0.88-10.68	0.078
SLC2A1 rs2297977 (TT vs. GG)	3.41	0.29-40.50	0.331
STAT1 rs3771300 (GT vs. TT)	0.50	0.18-1.42	0.194
STAT1 rs3771300 (GG vs. TT)	0.15	0.02-1.46	0.102
STAT1 rs1914408 (CT vs. CC)	4.36	1.38-13.84	0.012
STAT1 rs1914408 (TT vs. CC)	1.64	0.31-8.59	0.561
STAT1 rs2066804 (AG vs. GG)	1.88	0.60-5.83	0.277
STAT1 rs2066804 (AA vs. GG)	1.50	0.37-6.05	0.569
STAT1 rs1547550 (CG vs. GG)	1.04	0.31-3.54	0.946
STAT1 rs1547550 (CC vs. GG)	-	-	-
STAT1 rs2280232 (CA vs. AA)	3.60	1.19-10.87	0.023
STAT1 rs2280232 (CC vs. AA)	0.00	NA	1.000
STAT1 rs34997637 (GA vs. AA)	2.25	0.51-9.91	0.285
STAT1 rs34997637 (GG vs. AA)	3.33	0.66-16.85	0.145
STAT1 rs12693591 (CA vs. CC)	1.18	0.42-3.27	0.755
STAT1 rs12693591 (AA vs. CC)	0.67	0.05-8.24	0.752
STAT1 rs10173099 (TC vs. TT)	1.64	0.54-5.02	0.386
STAT1 rs10173099 (CC vs. TT)	1.75	0.39-7.95	0.469
STAT1 rs2066802 (AG vs. AA)	1.43	0.51-4.00	0.497
STAT1 rs2066802 (GG vs. AA)	4.62	0.43-49.30	0.206
STAT1 rs10208033 (TC vs. CC)	1.31	0.45-3.84	0.620
STAT1 rs10208033 (TT vs. CC)	1.50	0.30-7.43	0.619
STAT1 rs1467199 (GC vs. CC)	0.94	0.29-3.03	0.914
STAT1 rs1467199 (GG vs. CC)	0.70	0.16-3.05	0.638
CTNNB1 rs3864004 (GA vs. GG)	0.44	0.16-1.23	0.116
CTNNB1 rs3864004 (AA vs. GG)	0.83	0.05-14.48	0.900
CTNNB1 rs75288535 (GA vs. AA)	0.27	0.08-0.96	0.044
CTNNB1 rs75288535 (GG vs. AA)	1542044168.18	NA	0.999
CTNNB1 rs1798802 (GA vs. GG)	0.47	0.17-1.34	0.159
CTNNB1 rs1798802 (AA vs. GG)	0.19	0.02-1.90	0.157
CTNNB1 rs11564465 (TC vs. CC)	0.79	0.28-2.24	0.660
CTNNB1 rs11564465 (TT vs. CC)	2.38	0.20-28.67	0.496
CTNNB1 rs4135385 (AG vs. GG)	0.60	0.17-2.07	0.419
CTNNB1 rs4135385 (AA vs. GG)	0.13	0.03-0.64	0.012
CTNNB1 rs2293303 (CT vs. CC)	0.44	0.12-1.58	0.206
CTNNB1 rs2293303 (TT vs. CC)	1755950916.14	NA	1.000
SERPINE1 rs2227631 (GA vs. GG)	1.17	0.39-3.53	0.782
SERPINE1 rs2227631 (AA vs. GG)	0.86	0.20-3.64	0.834
SERPINE1 rs6092 (GA vs. GG)	1.56	0.46-5.31	0.481
SERPINE1 rs6092 (AA vs. GG)	0.00	NA	1.000
SERPINE1 rs6090 (AG vs. GG)	1.22	0.16-9.26	0.846

SERPINE1 rs2227667 (GA vs. AA)	0.24	0.07-0.83	0.024
SERPINE1 rs2227667 (GG vs. AA)	1.23	0.28-5.45	0.785
SERPINE1 rs2227692 (TC vs. CC)	0.21	0.06-0.68	0.009
SERPINE1 rs2227692 (TT vs. CC)	2.50	0.24-25.72	0.441
SERPINE1 rs7242 (GT vs. TT)	0.47	0.14-1.64	0.237
SERPINE1 rs7242 (GG vs. TT)	2.75	0.63-11.97	0.178
DKK1 rs11001553 (CT vs. CC)	0.83	0.20-3.48	0.803
DKK1 rs2241529 (GA vs. AA)	1.02	0.35-3.01	0.967
DKK1 rs2241529 (GG vs. AA)	1.09	0.13-9.12	0.936
DKK1 rs1569198 (GA vs. AA)	1.24	0.42-3.62	0.698
DKK1 rs1569198 (GG vs. AA)	0.57	0.05-6.90	0.656
IFNG rs1861494 (TC vs. TT)	0.93	0.30-2.92	0.906
IFNG rs1861494 (CC vs. TT)	0.80	0.17-3.89	0.782
IFNG rs2430561 (TA vs. TT)	1.86	0.46-7.45	0.383
IFNG rs2430561 (AA vs. TT)	-	-	-
IFNG rs2069705 (AG vs. GG)	0.57	0.18-1.87	0.354
IFNG rs2069705 (AA vs. GG)	1538547469.38	NA	1.000
HIF1A rs2301104 (GC vs. GG)	0.33	0.03-3.41	0.354
HIF1A rs72714570 (GC vs. CC)	0.20	0.04-1.05	0.058
HIF1A rs72714570 (GG vs. CC)	0.00	NA	1.000
HIF1A rs2301113 (CA vs. AA)	0.79	0.26-2.37	0.668
HIF1A rs2301113 (CC vs. AA)	1.33	0.25-7.17	0.738
HIF1A rs11549465 (TC vs. CC)	2423212264.28	NA	0.999
HIF1A rs2057482 (CT vs. CC)	2.72	0.91-8.16	0.074
HIF1A rs2057482 (TT vs. CC)	2827080974.99	NA	0.999

SERPINE1 rs2227667 (GA vs. AA)	0.77	0.23-2.61	0.677
SERPINE1 rs2227667 (GG vs. AA)	1.93	0.46-8.05	0.368
SERPINE1 rs2227692 (TC vs. CC)	1.60	0.55-4.65	0.388
SERPINE1 rs2227692 (TT vs. CC)	1.60	0.33-7.89	0.564
SERPINE1 rs7242 (GT vs. TT)	1.41	0.45-4.43	0.561
SERPINE1 rs7242 (GG vs. TT)	0.42	0.08-2.07	0.285
DKK1 rs11001553 (CT vs. CC)	1.78	0.36-8.70	0.478
DKK1 rs2241529 (GA vs. AA)	1.43	0.50-4.09	0.506
DKK1 rs2241529 (GG vs. AA)	1.43	0.25-8.14	0.688
DKK1 rs1569198 (GA vs. AA)	1.26	0.45-3.57	0.663
DKK1 rs1569198 (GG vs. AA)	2.75	0.23-33.01	0.425
IFNG rs1861494 (TC vs. TT)	0.95	0.31-2.85	0.921
IFNG rs1861494 (CC vs. TT)	0.55	0.13-2.33	0.413
IFNG rs2430561 (TA vs. TT)	0.65	0.20-2.08	0.470
IFNG rs2430561 (AA vs. TT)	-	-	-
IFNG rs2069705 (AG vs. GG)	1.16	0.40-3.34	0.781
IFNG rs2069705 (AA vs. GG)	0.00	NA	1.000
HIF1A rs2301104 (GC vs. GG)	1.25	0.32-4.83	0.746
HIF1A rs72714570 (GC vs. CC)	1.16	0.40-3.34	0.781
HIF1A rs72714570 (GG vs. CC)	0.00	NA	1.000
HIF1A rs2301113 (CA vs. AA)	1.36	0.47-3.99	0.571
HIF1A rs2301113 (CC vs. AA)	0.55	0.11-2.61	0.448
HIF1A rs11549465 (TC vs. CC)	0.79	0.12-5.08	0.804
HIF1A rs2057482 (CT vs. CC)	0.46	0.14-1.52	0.200
HIF1A rs2057482 (TT vs. CC)	0.00	NA	1.000

Supplementary Table 4 Survival analysis

Capsule group

SNP (genotype)	median OS 1 (months)	median OS 2 (months)	<i>P</i> value
SLC2A1 rs841858 (TT+GT vs. GG)	56.7	73.8	0.716
SLC2A1 rs841858 (TT vs. GT+GG)	NA	NA	0.224
SLC2A1 rs3754219 (CC+CA vs. AA)	56.7	73.8	0.552
SLC2A1 rs3754219 (CC vs. CA+AA)	57.7	36.6	0.307
SLC2A1 rs841853 (AA+CA vs. CC)	56.3	108.6	0.104
SLC2A1 rs841853 (AA vs. CA+CC)	NA	NA	0.135
SLC2A1 rs841847 (TT+TC vs. CC)	56.7	108.6	0.730
SLC2A1 rs841847 (TT vs. TC+CC)	57.7	NA	0.536
SLC2A1 rs7512565 (TT+CT vs. CC)	108.6	54.8	0.644
SLC2A1 rs7512565 (TT vs. CT+CC)	63.1	27.4	0.124
SLC2A1 rs2297977 (TT+GT vs. GG)	56.3	73.8	0.661
SLC2A1 rs2297977 (TT vs. GT+GG)	57.7	NA	0.347
STAT1 rs3771300 (GG+GT vs. TT)	108.6	56.7	0.257
STAT1 rs3771300 (GG vs. GT+TT)	57.7	NA	0.715
STAT1 rs1914408 (TT+CT vs. CC)	56.7	63.1	0.877
STAT1 rs1914408 (TT vs. CT+CC)	57.7	NA	0.250
STAT1 rs2066804 (AA+AG vs. GG)	56.3	63.1	0.913
STAT1 rs2066804 (AA vs. AG+GG)	57.7	NA	0.461
STAT1 rs1547550 (CC+CG vs. GG)	56.7	73.8	0.391
STAT1 rs1547550 (CC vs. CG+GG)	NA	NA	0.287

Non-capsule group

SNP (genotype)	median OS 1 (months)	median OS 2 (months)	<i>P</i> value
SLC2A1 rs841858 (TT+GT vs. GG)	74.4	75.5	0.995
SLC2A1 rs841858 (TT vs. GT+GG)	NA	NA	0.536
SLC2A1 rs3754219 (CC+CA vs. AA)	55.8	96.8	0.072
SLC2A1 rs3754219 (CC vs. CA+AA)	75.5	41.7	0.857
SLC2A1 rs841853 (AA+CA vs. CC)	96.8	73.7	0.238
SLC2A1 rs841853 (AA vs. CA+CC)	NA	NA	0.638
SLC2A1 rs841847 (TT+TC vs. CC)	81.9	75.5	0.944
SLC2A1 rs841847 (TT vs. TC+CC)	75.5	28.8	0.827
SLC2A1 rs7512565 (TT+CT vs. CC)	74.4	96.8	0.794
SLC2A1 rs7512565 (TT vs. CT+CC)	75.5	19.6	0.347
SLC2A1 rs2297977 (TT+GT vs. GG)	74.4	75.5	0.457
SLC2A1 rs2297977 (TT vs. GT+GG)	75.5	NA	0.425
STAT1 rs3771300 (GG+GT vs. TT)	74.4	75.5	0.385
STAT1 rs3771300 (GG vs. GT+TT)	81.9	55.8	0.359
STAT1 rs1914408 (TT+CT vs. CC)	75.5	81.9	0.497
STAT1 rs1914408 (TT vs. CT+CC)	75.5	81.9	0.616
STAT1 rs2066804 (AA+AG vs. GG)	75.5	81.9	0.210
STAT1 rs2066804 (AA vs. AG+GG)	81.9	74.4	0.894
STAT1 rs1547550 (CC+CG vs. GG)	74.4	NA	0.504
STAT1 rs1547550 (CC vs. CG+GG)	NA	NA	NA

STAT1 rs2280232 (CC+CA vs. AA)	56.3	108.6	0.260	STAT1 rs2280232 (CC+CA vs. AA)	81.9	74.4	0.727
STAT1 rs2280232 (CC vs. CA+AA)	57.7	NA	NA	STAT1 rs2280232 (CC vs. CA+AA)	75.5	NA	0.673
STAT1 rs34997637 (GG+GA vs. AA)	73.8	56.7	0.175	STAT1 rs34997637 (GG+GA vs. AA)	NA	73.7	0.140
STAT1 rs34997637 (GG vs. GA+AA)	63.1	56.7	0.604	STAT1 rs34997637 (GG vs. GA+AA)	81.9	73.7	0.602
STAT1 rs12693591 (AA+CA vs. CC)	108.6	44.7	0.001	STAT1 rs12693591 (AA+CA vs. CC)	81.9	73.7	0.620
STAT1 rs12693591 (AA vs. CA+CC)	63.1	25.1	0.069	STAT1 rs12693591 (AA vs. CA+CC)	74.4	75.5	0.499
STAT1 rs10173099 (CC+TC vs. TT)	73.8	56.7	0.480	STAT1 rs10173099 (CC+TC vs. TT)	81.9	74.4	0.618
STAT1 rs10173099 (CC vs. TC+TT)	56.3	NA	0.306	STAT1 rs10173099 (CC vs. TC+TT)	81.9	45.6	0.128
STAT1 rs2066802 (GG+AG vs. AA)	108.6	56.3	0.013	STAT1 rs2066802 (GG+AG vs. AA)	81.9	75.5	0.340
STAT1 rs2066802 (GG vs. AG+AA)	63.1	27.4	0.240	STAT1 rs2066802 (GG vs. AG+AA)	75.5	NA	0.936
STAT1 rs10208033 (TT+TC vs. CC)	108.6	56.3	0.266	STAT1 rs10208033 (TT+TC vs. CC)	81.9	73.7	0.708
STAT1 rs10208033 (TT vs. TC+CC)	63.1	44.7	0.756	STAT1 rs10208033 (TT vs. TC+CC)	81.9	75.5	0.891
STAT1 rs1467199 (GG+GC vs. CC)	56.7	63.1	0.626	STAT1 rs1467199 (GG+GC vs. CC)	73.7	81.9	0.991
STAT1 rs1467199 (GG vs. GC+CC)	56.7	73.8	0.718	STAT1 rs1467199 (GG vs. GC+CC)	74.4	81.9	0.737
CTNNB1 rs3864004 (AA+GA vs. GG)	57.7	73.8	0.642	CTNNB1 rs3864004 (AA+GA vs. GG)	75.5	81.9	0.558
CTNNB1 rs3864004 (AA vs. GA+GG)	57.7	NA	0.171	CTNNB1 rs3864004 (AA vs. GA+GG)	75.5	NA	0.637
CTNNB1 rs75288535 (GG+GA vs. AA)	57.7	NA	0.617	CTNNB1 rs75288535 (GG+GA vs. AA)	96.8	50.3	0.055
CTNNB1 rs75288535 (GG vs. GA+AA)	63.1	44.7	0.103	CTNNB1 rs75288535 (GG vs. GA+AA)	81.9	22.0	0.247
CTNNB1 rs1798802 (AA+GA vs. GG)	57.7	73.8	0.732	CTNNB1 rs1798802 (AA+GA vs. GG)	74.4	81.9	0.684
CTNNB1 rs1798802 (AA vs. GA+GG)	57.7	NA	0.224	CTNNB1 rs1798802 (AA vs. GA+GG)	75.5	29.6	0.172
CTNNB1 rs11564465 (TT+TC vs. CC)	57.7	108.6	0.527	CTNNB1 rs11564465 (TT+TC vs. CC)	75.5	NA	0.994
CTNNB1 rs11564465 (TT vs. TC+CC)	63.1	NA	0.537	CTNNB1 rs11564465 (TT vs. TC+CC)	75.5	19.7	0.734

CTNNB1 rs4135385 (AA+AG vs. GG)	56.3	108.6	0.128
CTNNB1 rs4135385 (AA vs. AG+GG)	57.7	NA	0.945
CTNNB1 rs2293303 (TT+CT vs. CC)	63.1	45.8	0.506
CTNNB1 rs2293303 (TT vs. CT+CC)	63.1	NA	0.783
SERPINE1 rs2227631 (AA+GA vs. GG)	56.7	108.6	0.496
SERPINE1 rs2227631 (AA vs. GA+GG)	57.7	108.6	0.494
SERPINE1 rs6092 (AA+GA vs. GG)	73.8	56.7	0.171
SERPINE1 rs6092 (AA vs. GA+GG)	63.1	37.4	0.176
SERPINE1 rs6090 (AG vs. GG)	57.7	NA	0.284
SERPINE1 rs2227667 (GG+GA vs. AA)	108.6	63.1	0.537
SERPINE1 rs2227667 (GG vs. GA+AA)	73.8	50.8	0.077
SERPINE1 rs2227692 (TT+TC vs. CC)	108.6	56.7	0.263
SERPINE1 rs2227692 (TT vs. TC+CC)	73.8	37.5	0.171
SERPINE1 rs7242 (GG+GT vs. TT)	63.1	57.7	0.876
SERPINE1 rs7242 (GG vs. GT+TT)	63.1	56.3	0.547
DKK1 rs11001553 (CT vs. CC)	63.1	50.8	0.446
DKK1 rs2241529 (GG+GA vs. AA)	56.7	108.6	0.447
DKK1 rs2241529 (GG vs. GA+AA)	63.1	37.5	0.224
DKK1 rs1569198 (GG+GA vs. AA)	56.7	108.6	0.710
DKK1 rs1569198 (GG vs. GA+AA)	63.1	27.7	0.198
IFNG rs1861494 (CC+TC vs. TT)	73.8	56.7	0.157
IFNG rs1861494 (CC vs. TC+TT)	63.1	56.7	0.573
IFNG rs2430561 (AA+TA vs. TT)	56.7	63.1	0.403

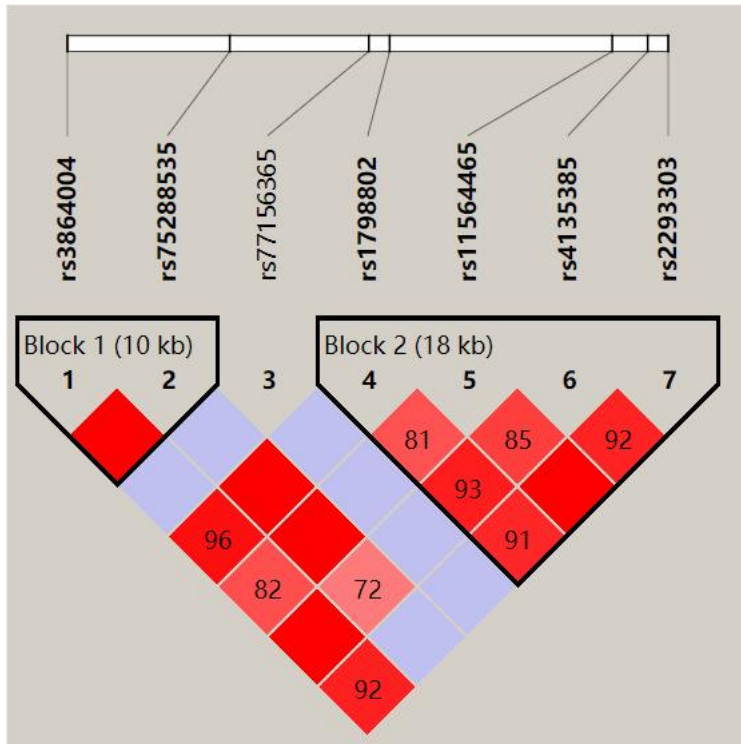
CTNNB1 rs4135385 (AA+AG vs. GG)	74.4	75.5	0.663
CTNNB1 rs4135385 (AA vs. AG+GG)	96.8	50.3	0.012
CTNNB1 rs2293303 (TT+CT vs. CC)	75.5	NA	0.708
CTNNB1 rs2293303 (TT vs. CT+CC)	75.5	NA	NA
SERPINE1 rs2227631 (AA+GA vs. GG)	50.3	96.8	0.019
SERPINE1 rs2227631 (AA vs. GA+GG)	74.4	NA	0.075
SERPINE1 rs6092 (AA+GA vs. GG)	75.5	50.3	0.283
SERPINE1 rs6092 (AA vs. GA+GG)	75.5	28.6	0.222
SERPINE1 rs6090 (AG vs. GG)	74.4	75.5	0.469
SERPINE1 rs2227667 (GG+GA vs. AA)	NA	74.4	0.173
SERPINE1 rs2227667 (GG vs. GA+AA)	75.5	31.0	0.528
SERPINE1 rs2227692 (TT+TC vs. CC)	74.4	75.5	0.847
SERPINE1 rs2227692 (TT vs. TC+CC)	75.5	20.2	0.126
SERPINE1 rs7242 (GG+GT vs. TT)	75.5	74.4	0.853
SERPINE1 rs7242 (GG vs. GT+TT)	75.5	NA	0.240
DKK1 rs11001553 (CT vs. CC)	73.7	101.3	0.244
DKK1 rs2241529 (GG+GA vs. AA)	73.7	96.8	0.289
DKK1 rs2241529 (GG vs. GA+AA)	74.4	101.3	0.450
DKK1 rs1569198 (GG+GA vs. AA)	74.4	96.8	0.540
DKK1 rs1569198 (GG vs. GA+AA)	75.5	NA	0.475
IFNG rs1861494 (CC+TC vs. TT)	75.5	74.4	0.725
IFNG rs1861494 (CC vs. TC+TT)	96.8	45.6	0.022
IFNG rs2430561 (AA+TA vs. TT)	75.5	74.4	0.571

IFNG rs2430561 (AA vs. TA+TT)	NA	NA	NA
IFNG rs2069705 (AA+AG vs. GG)	56.7	63.1	0.665
IFNG rs2069705 (AA vs. AG+GG)	NA	NA	0.322
HIF1A rs2301104 (GC vs. GG)	63.1	43.5	0.181
HIF1A rs72714570 (GG+GC vs. CC)	63.1	56.7	0.955
HIF1A rs72714570 (GG vs. GC+CC)	NA	NA	0.496
HIF1A rs2301113 (CC+CA vs. AA)	56.3	73.8	0.155
HIF1A rs2301113 (CC vs. CA+AA)	57.7	NA	0.553
HIF1A rs11549465 (TC vs. CC)	57.7	56.7	0.095
HIF1A rs2057482 (TT+CT vs. CC)	45.8	108.6	0.004
HIF1A rs2057482 (TT vs. CT+CC)	NA	NA	0.207

IFNG rs2430561 (AA vs. TA+TT)	NA	NA	0.536
IFNG rs2069705 (AA+AG vs. GG)	73.7	81.9	0.691
IFNG rs2069705 (AA vs. AG+GG)	NA	NA	0.536
HIF1A rs2301104 (GC vs. GG)	75.5	22.3	0.062
HIF1A rs72714570 (GG+GC vs. CC)	81.9	45.6	0.138
HIF1A rs72714570 (GG vs. GC+CC)	NA	NA	0.921
HIF1A rs2301113 (CC+CA vs. AA)	73.7	81.9	0.910
HIF1A rs2301113 (CC vs. CA+AA)	75.5	41.7	0.452
HIF1A rs11549465 (TC vs. CC)	74.4	81.9	0.944
HIF1A rs2057482 (TT+CT vs. CC)	75.5	41.7	0.117
HIF1A rs2057482 (TT vs. CT+CC)	NA	NA	0.115

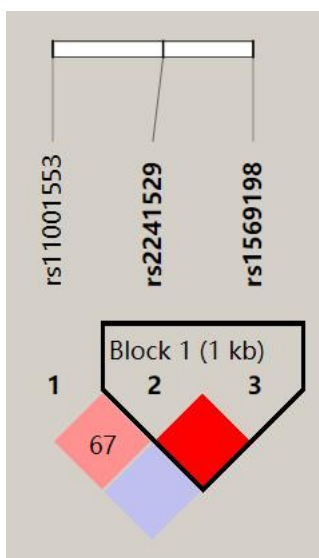
Supplementary Figure 1 Haplotype block structure and linkage disequilibrium (LD) Analysis

of CTNNB1.



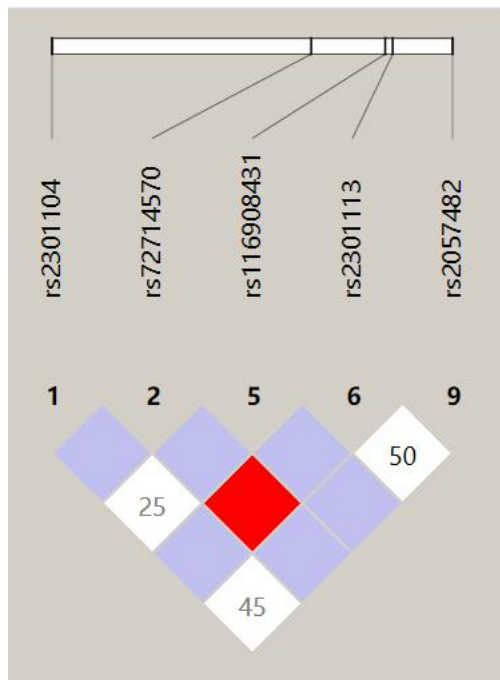
Supplementary Figure 2 Haplotype block structure and linkage disequilibrium (LD) Analysis

of DKK1.



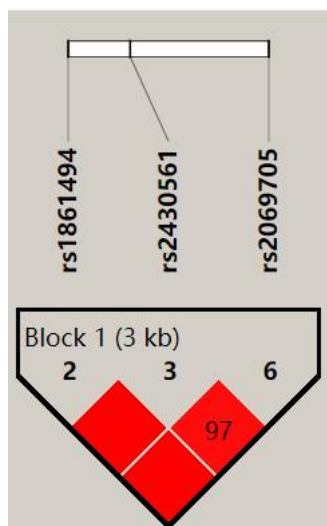
Supplementary Figure 3 Haplotype block structure and linkage disequilibrium (LD) Analysis

of HIF1A.



Supplementary Figure 4 Haplotype block structure and linkage disequilibrium (LD) Analysis

of IFNG.



Supplementary Figure 5 Haplotype block structure and linkage disequilibrium (LD) Analysis

of SERPINE1.

