

Table S1 TIS gene

CD3D

IDO1

CIITA

CD3E

CCL5

GZMK

CD2

HLA-DRA

CXCL13

IL2RG

NKG7

HLA-E

CXCR6

LAG3

TAGAP

CXCL10

STAT1

GZMB

Table S2 Results of univariate Cox regression analysis on DEIRGs

ID	HR	HR.95L	HR.95H	P value
<i>CD79A</i>	0.86080059	0.78353518	0.94568525	0.00178532
<i>CD19</i>	0.75625156	0.62924666	0.90889067	0.00289778
<i>IL11</i>	1.34825552	1.10071145	1.65147092	0.00388824
<i>TNFRSF17</i>	0.85799594	0.7693303	0.95688033	0.00592412
<i>IRF4</i>	0.79991728	0.68712038	0.93123079	0.00399343
<i>TLR10</i>	0.71322207	0.57526038	0.88427038	0.00206076
<i>S100P</i>	1.08079561	1.02304847	1.14180234	0.00554888
<i>FURIN</i>	1.27236439	1.10812385	1.46094785	0.00063566
<i>F2RL1</i>	1.23470183	1.07596442	1.41685782	0.0026753
<i>BTK</i>	0.72577271	0.60398157	0.87212267	0.00062654
<i>GMFG</i>	0.78440727	0.65644303	0.93731631	0.00753136
<i>INHA</i>	1.12609837	1.04189681	1.21710472	0.00274401
<i>LGR4</i>	1.34353181	1.11667157	1.6164804	0.00175162
<i>ITGAL</i>	0.77803916	0.65892153	0.91869048	0.00307409
<i>NLRC4</i>	0.72140479	0.56355554	0.92346687	0.00954405
<i>CD300LF</i>	0.79265715	0.67268372	0.93402788	0.0055196
<i>FCN1</i>	0.82231418	0.7087974	0.95401113	0.00984793
<i>SIGLEC6</i>	0.60300308	0.41148325	0.88366346	0.00947893
<i>SFTPD</i>	0.8925475	0.83509523	0.95395232	0.00081202
<i>PTGDS</i>	0.83810208	0.75227509	0.93372108	0.00135504
<i>S100A16</i>	1.34389688	1.14094771	1.58294619	0.00040231
<i>WFDC2</i>	0.8454004	0.7657211	0.93337096	0.00088366
<i>CTSG</i>	0.79900571	0.68493351	0.93207605	0.00430469
<i>ARRB1</i>	0.68598782	0.5584277	0.84268614	0.00032998
<i>BIRC5</i>	1.29086621	1.11877098	1.48943403	0.00046997
<i>AGER</i>	0.87709062	0.80460025	0.95611199	0.0028857
<i>MIF</i>	1.35591389	1.11082045	1.65508519	0.00276129
<i>SEMA4B</i>	1.33613511	1.12132384	1.59209763	0.00119334
<i>CX3CR1</i>	0.78857846	0.68484074	0.90803008	0.00096473
<i>ROBO2</i>	0.73498584	0.59159186	0.9131366	0.00542621
<i>ANGPTL5</i>	0.39634401	0.1976015	0.79497663	0.00915916
<i>CAT</i>	0.6945837	0.55994416	0.86159757	0.00091654
<i>GDF10</i>	0.78185635	0.67472786	0.90599393	0.00106408
<i>GPI</i>	1.56739547	1.22526599	2.00505734	0.00034769
<i>IL33</i>	0.84690107	0.75097485	0.95508048	0.00674248
<i>KL</i>	0.72919565	0.58858162	0.90340282	0.00385998
<i>ADRB2</i>	0.75041564	0.63201746	0.89099379	0.00104773
<i>ANGPTL4</i>	1.20400759	1.09833543	1.31984659	7.46E-05
<i>IL5RA</i>	0.51697987	0.31921832	0.83725829	0.00731745
<i>LIFR</i>	0.73568889	0.62497202	0.86601978	0.00022552
<i>RXFP1</i>	0.63021557	0.44959134	0.88340595	0.00737493
<i>VIPR1</i>	0.73808514	0.6229668	0.87447626	0.00044754
<i>SHC3</i>	0.71303584	0.56461184	0.90047725	0.00450715
<i>OAS3</i>	1.2625065	1.06094954	1.50235482	0.00862299
<i>CCNA2</i>	1.31663816	1.15690776	1.49842201	3.06E-05
<i>TRIM6</i>	1.3916876	1.17342874	1.65054282	0.00014617
<i>CFTR</i>	0.82948539	0.74459823	0.92405001	0.00068888
<i>P2RY14</i>	0.74043078	0.59887535	0.91544551	0.0055027
<i>HSPD1</i>	1.51961371	1.18790012	1.94395621	0.00086741
<i>CASP12</i>	0.32021171	0.14538294	0.70527899	0.00470378
<i>PLK1</i>	1.44304709	1.23761283	1.68258186	2.86E-06
<i>C7</i>	0.873539	0.79657181	0.957943	0.00406602
<i>C6</i>	0.78769405	0.67370242	0.92097325	0.0027702
<i>PRKCE</i>	0.64213367	0.48912356	0.84300917	0.00142409

DEIRGs, differentially expressed immune-related genes.

Table S3 Univariate cox analysis on clinical features

ID	HR	HR.95L	HR.95H	P value
Age	1.00788965	0.99265116	1.02336207	0.31200078
Gender	0.90731131	0.67565578	1.21839231	0.51783346
Stage	1.63188632	1.41986259	1.87557091	5.32E-12
Risk score	1.66217011	1.51994871	1.81769914	8.57E-29

Table S4 Results of multivariate cox regression analysis

ID	HR	HR.95L	HR.95H	P value
Stage	1.49310342	1.28863008	1.73002156	9.58E-08
Risk score	1.59204609	1.44954654	1.74855424	2.48E-22

Table S5 Pearson correlation coefficients and p-values between IRGPI risk scores and ARGs

Angiogenesis	R	P value
<i>EMCN</i>	-0.36	2.20E-16
<i>SPHK1</i>	0.35	1.20E-15
<i>COL4A3</i>	-0.33	1.60E-14
<i>HTATIP2</i>	0.29	2.10E-11
<i>TNFSF12</i>	-0.26	<0.0000000024
<i>SHH</i>	-0.25	2.20E-08
<i>FOXO4</i>	-0.25	2.40E-08
<i>NCL</i>	0.23	3.60E-07
<i>IL17F</i>	-0.22	4.00E-07
<i>SPINK5</i>	-0.22	9.70E-07
<i>CXCL8</i>	0.21	1.50E-06
<i>NPR1</i>	-0.21	1.70E-06
<i>PLG</i>	-0.21	1.70E-06
<i>ACVRL1</i>	-0.2	4.00E-06
<i>NOTCH4</i>	-0.2	4.10E-06
<i>RNH1</i>	-0.19	1.20E-05
<i>ROBO4</i>	-0.19	1.80E-05
<i>STAB1</i>	-0.19	2.50E-05
<i>BTG1</i>	-0.17	1.00E-04
<i>AMOT</i>	-0.17	0.00012
<i>SERPINF1</i>	-0.13	3.60E-03
<i>PROK2</i>	-0.12	5.50E-03
<i>THY1</i>	0.12	5.50E-03
<i>TNNI3</i>	0.12	6.50E-03
<i>RUNX1</i>	-0.12	6.80E-03
<i>ERAP1</i>	-0.11	0.01
<i>PML</i>	0.11	1.00E-02
<i>ATP5IF1</i>	-0.1	0.021
<i>AGGF1</i>	-0.1	0.024
<i>PF4</i>	0.1	2.50E-02
<i>EGF</i>	0.098	0.027
<i>CDH13</i>	-0.092	0.04
<i>ANG</i>	-0.087	0.05
<i>C1GALT1</i>	0.087	0.051
<i>ANGPTL3</i>	-0.072	0.11
<i>VEGFA</i>	0.071	1.10E-01
<i>IL18</i>	0.063	1.60E-01
<i>COL4A2</i>	0.061	0.17
<i>NF1</i>	-0.056	2.10E-01
<i>SCG2</i>	0.049	2.80E-01
<i>TGFB2</i>	-0.048	2.80E-01
<i>RHOB</i>	-0.048	2.90E-01
<i>MYH9</i>	0.043	3.40E-01
<i>CHRNA7</i>	-0.018	0.69
<i>CANX</i>	0.016	0.72
<i>NPPB</i>	0.012	8.00E-01
<i>EPGN</i>	0.0074	0.87
<i>ANGPTL4</i>	NA	NA