

ORIGINAL RESEARCH ARTICLE

A novel gene prognostic signature lymphocyte cytosolic protein 2 regulates melanoma progression by activating tumor-infiltrating CD8⁺T-cells through the interferon regulatory factor 5 signaling pathway

Supplementary File

Table S1. Characteristics of the study patients

Characteristics	TCGA	GSE65904	GSE15605	GSE31879	GSE3189
Platform	Illumina HiSeq 2000 RNA Sequencing platform	Illumina HumanHT-12 V4.0 expression beadchip	Affymetrix Human Genome U133 Plus 2.0 Array	Affymetrix Human Genome U133 Plus 2.0 Array	Affymetrix Human Genome U133A Array
No. of patients (Tumor/Control)	471 (471/0)	214 (214/0)	74 (58/16)	14 (10/4)	70 (45/25)
Age (years; mean±SD)	58±16	62±14	58±17	-	-
Sex, No. (%)					
Male	291 (61.78)	124 (57.94)	51 (68.92)	-	-
Female	179 (38)	89 (41.59)	23 (31.08)	-	-
NA	1 (0.21)	1 (0.47)	0	-	-
Sample type, No. (%)					
Primary tumor	103 (21.87)	-	-	-	-
Metastatic tumor	368 (78.13)	-	-	-	-
Breslow thickness (mean±SD)	5.61±8.45	-	-	-	-
Ulceration, No. (%)					
Yes	167 (35.46)	-	-	-	-
No	147 (31.21)	-	-	-	-
NA	157 (33.33)	-	-	-	-
Tumor stage, No. (%)					
I	77 (16.35)	-	-	-	-
II	139 (29.51)	-	-	-	-
III	171 (36.31)	-	-	-	-
IV	24 (5.1)	-	-	-	-
NA	60 (12.74)	-	-	-	-

NA: Missing value (unknown); TCGA: The Cancer Genome Atlas

Table S2. Univariate and multivariate analysis for the association between PIS risk groups and OS

Variable	Univariate analysis			Multivariate analysis		
	HR	95% CI	P-value	HR	95% CI	P-value
PIS						
Low-risk	Ref					
High-risk	2.343	1.785 – 3.076	8.52e-10	1.864	1.318 – 2.638	0.0004
Age	1.024	1.015 – 1.034	2.81e-07	1.019	1.007 – 1.031	0.002
Sex						
Female	Ref					
Male	1.159	0.875 – 1.536	0.304			
Sample type						
Primary	Ref					
Metastatic	0.371	0.240 – 0.574	8.41e-06	0.509	0.289 – 0.895	0.019
Tumor stage						
I	Ref					
II	1.581	1.051 – 2.378	0.0277	0.656	0.382 – 1.127	0.127
III	2.027	1.375 – 2.987	0.0004	1.721	1.046 – 2.831	0.032
IV	3.510	1.778 – 6.931	0.0003	2.56	1.042 – 6.287	0.04
Breslow thickness	1.027	1.014 – 1.041	3.94e-05	1.013	0.994 – 1.032	0.186
Ulceration						
No	Ref					
Yes	2.079	1.495 – 2.891	1.38e-05	1.582	1.048 – 2.388	0.029

PIS: Prognostic immune score; OS: Overall survival; CI: Confidence interval; HR: Hazard ratios

Table S3. Univariate and multivariate analysis for the association between PIS risk groups and DFS

Variable	Univariate analysis			Multivariate analysis		
	HR	95% CI	P-value	HR	95% CI	P-value
PIS						
Low-risk	Ref					
High-risk	2.895	1.867 – 4.489	2.06e-06	2.241	1.298 – 3.867	0.0038
Age	1.016	1.002 – 1.031	0.0208	1.011	0.993 – 1.029	0.2407
Sex						
Female	Ref					
Male	1.494	0.93 – 2.40	0.0971			
Sample type						
Primary	Ref					
Metastatic	0.29	0.157 – 0.536	7.64e-05	0.294	0.126 – 0.684	0.0045
Tumor stage						
I	Ref					
II	1.8	0.923 – 3.511	0.0846	1.323	0.575 – 3.044	0.5099
III	2.046	1.068 – 3.916	0.0308	2.541	1.076 – 5.998	0.0334
IV	3.754	1.4 – 10.068	0.0086	5.838	1.889 – 18.043	0.0022
Breslow thickness	1.03	1.011 – 1.049	0.0021	1.008	0.983 – 1.033	0.559
Ulceration						
No	Ref					
Yes	1.926	1.158 – 3.203	0.0115	1.0516	0.5605 – 1.973	0.8754

PIS: Prognostic immune score; DFS: Disease-free survival