

1 **Table S1** Characteristics of 102 SCLC patients

Sample ID	Age, years	Sex	Smoke	Stage	Pathology review	HLA II expression on TILs, %	HLA II expression on tumor cells, %
1	55	male	non-smoker	1	SCLC	40	0
2	52	male	non-smoker	3	SCLC	30	0
3	76	male	non-smoker	1	SCLC	90	0
4	58	male	non-smoker	2	SCLC	20	0
5	55	male	non-smoker	1	SCLC	10	0
6	51	male	non-smoker	3	SCLC	5	0
7	76	male	smoker	3	SCLC	10	10
8	47	female	non-smoker	3	SCLC	0	0
9	65	female	non-smoker	3	SCLC	5	0
10	72	male	non-smoker	3	SCLC	5	0
11	73	male	non-smoker	3	SCLC	2	0
12	56	male	non-smoker	3	SCLC	0	0
13	66	male	smoker	3	SCLC	40	0
14	58	male	smoker	3	SCLC	1	0
15	68	female	non-smoker	3	SCLC	60	20
16	60	male	non-smoker	2	SCLC	15	0
17	67	male	non-smoker	2	SCLC	0	0
18	43	female	non-smoker	2	SCLC	90	0
19	76	male	non-smoker	3	SCLC	20	0
20	53	male	non-smoker	1	SCLC	30	0
21	60	male	smoker	3	SCLC	30	0
22	51	female	non-smoker	3	SCLC	5	0
23	52	male	non-smoker	3	SCLC	10	5
24	78	male	non-smoker	1	SCLC	20	0
25	54	male	non-smoker	3	SCLC	20	0
26	74	male	non-smoker	3	SCLC	5	0
27	60	male	non-smoker	2	SCLC	10	0
28	68	female	non-smoker	3	SCLC	0	0
29	66	female	non-smoker	2	SCLC	1	0
30	73	male	non-smoker	1	SCLC	10	0
31	65	male	non-smoker	2	SCLC	5	0
32	67	male	smoker	1	SCLC	80	0
33	73	female	non-smoker	3	SCLC	10	0
34	75	male	smoker	1	SCLC	80	20
35	59	male	smoker	2	SCLC	60	0
36	75	male	smoker	1	SCLC	20	0
37	65	male	smoker	1	SCLC	20	0
38	63	female	non-smoker	1	SCLC	60	0

39	57	male	smoker	3	SCLC	30	0
40	40	male	non-smoker	1	SCLC	20	0
41	42	male	smoker	2	SCLC	0	0
42	58	male	non-smoker	2	SCLC	1	0
43	54	male	smoker	3	SCLC	30	0
44	72	male	smoker	3	SCLC	5	0
45	56	female	non-smoker	2	SCLC	10	0
46	66	male	smoker	1	SCLC	50	0
47	70	male	smoker	3	SCLC	10	0
48	52	male	smoker	3	SCLC	60	0
49	66	male	smoker	3	SCLC	20	0
50	77	male	smoker	3	SCLC	60	0
51	63	female	non-smoker	3	SCLC	5	0
52	74	male	smoker	3	SCLC	40	0
53	64	male	smoker	2	SCLC	40	0
54	67	male	non-smoker	3	SCLC	30	0
55	81	male	smoker	1	SCLC	30	0
56	38	male	non-smoker	1	SCLC	30	0
57	63	male	smoker	2	SCLC	30	0
58	76	male	non-smoker	3	SCLC	20	0
59	67	male	smoker	3	SCLC	80	0
60	74	male	smoker	3	SCLC	5	0
61	67	female	non-smoker	1	SCLC	1	0
62	63	male	non-smoker	3	SCLC	10	0
63	47	female	non-smoker	2	SCLC	0	90
64	66	male	smoker	2	SCLC	10	10
65	68	male	non-smoker	1	SCLC	30	0
66	61	male	non-smoker	1	SCLC	40	0
67	72	male	smoker	1	SCLC	30	0
68	68	male	smoker	1	SCLC	30	0
69	61	female	non-smoker	1	SCLC	50	80
70	49	male	smoker	3	SCLC	0	0
71	68	male	non-smoker	3	SCLC	40	0
72	54	male	non-smoker	2	SCLC	20	0
73	52	male	non-smoker	1	SCLC	5	0
74	58	male	smoker	3	SCLC	10	0
75	63	male	smoker	3	SCLC	1	0
76	64	male	smoker	2	SCLC	10	0
77	51	male	smoker	2	SCLC	40	0
78	61	male	smoker	1	SCLC	50	0
79	68	male	non-smoker	3	SCLC	70	0
80	62	male	smoker	2	SCLC	20	0

81	63	female	non-smoker	3	SCLC	60	0
82	55	male	non-smoker	3	SCLC	10	0
83	66	male	smoker	1	SCLC	0	5
84	73	male	smoker	2	SCLC	5	0
85	63	male	non-smoker	1	SCLC	70	0
86	65	male	non-smoker	1	SCLC	40	0
87	69	male	smoker	1	SCLC	70	0
88	42	male	non-smoker	3	SCLC	10	0
89	70	female	non-smoker	1	SCLC	5	0
90	51	male	non-smoker	1	SCLC	80	0
91	60	male	non-smoker	2	SCLC	60	0
92	68	male	smoker	3	SCLC	20	0
93	66	male	smoker	1	SCLC	75	0
94	72	male	smoker	1	SCLC	1	0
95	67	male	smoker	1	SCLC	60	0
96	63	female	non-smoker	1	SCLC	25	0
97	63	male	non-smoker	2	SCLC	5	0
98	78	male	smoker	1	SCLC	30	0
99	51	male	smoker	1	SCLC	30	0
100	69	male	smoker	1	SCLC	10	0
101	62	male	non-smoker	1	SCLC	5	0
102	61	female	non-smoker	1	SCLC	80	5

2 HLA II, human leukocyte antigen class II; SCLC, small cell lung cancer; TILs, tumor

3 infiltrating lymphocytes.

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21 **Table S2** Correlation between HLA class II and other immune factors

Biomarkers	HLA class II on tumor cells		HLA class II on TILs	
	Correlation coefficient	P value	Correlation coefficient	P value
HLA class II on tumor cells	NA	NA	0.028	0.780
HLA class II on TILs	0.028	0.780	NA	NA
PD-1 on TILs	0.273	0.006*	0.410	<0.001*
PD-L1 on TILs	0.063	0.527	0.511	<0.001*
PD-L1 on tumor cells	-0.063	0.531	0.106	0.288
CD3	0.140	0.161	0.441	<0.001*
CD4	0.128	0.199	0.582	<0.001*
CD8	0.151	0.130	0.496	<0.001*
FOXP3	0.123	0.219	0.507	<0.001*

22 *, P<0.05 indicates statistical significance; NA, not available; HLA class II, human leukocyte

23 antigen class II; PD-1, programmed death-1; PD-L1, programmed death-ligand 1; TILs, tumor

24 infiltrating lymphocytes

Table S3 Bivariate logistic regression of HLA class II expression on TILs

Variables	Univariate			Multivariate		
	OR	95% CI	P value	OR	95% CI	P value
Age (<70 vs. ≥70)	0.472	0.175-1.273	0.138			
Gender (female vs. male)	0.770	0.272-2.180	0.623			
Smoking status (non-smoker vs. smoker)	0.473	0.213-1.052	0.066			
T (1–2 vs. 3–4)	0.268	0.071-1.016	0.053			
N (0 vs. 1–2)	0.283	0.124-0.645	0.003*	0.294	0.108-0.799	0.016*
M (0 vs. 1)	1.279	0.173-9.453	0.809			
Stage (I vs. II-III)	0.468	0.207-1.059	0.068			
Adjuvant chemotherapy (no vs. yes)	1.140	0.521-2.496	0.742			
PD-1 on TILs (negative vs. positive)	2.689	1.19-6.078	0.017*	0.557	0.160-1.937	0.357
PD-L1 on TILs (negative vs. positive)	7.741	3.114-19.242	<0.001*	3.339	1.071-10.404	0.038*
PD-L1 on tumor cells (negative vs. positive)	4.000	0.402-39.827	0.237			
CD3 (negative vs. positive)	7.000	2.866-17.094	<0.001*	3.309	0.891-12.281	0.074
CD4 (negative vs. positive)	5.132	2.152-12.238	<0.001*	1.031	0.268-3.968	0.965
CD8 (negative vs. positive)	6.095	2.425-15.323	<0.001*	1.157	0.298-4.493	0.833
FOXP3 (negative vs. positive)	9.187	3.531-23.903	<0.001*	3.021	0.668-13.669	0.151

*, P<0.05 indicates statistical significance; OR, Odds ratio; 95% CI, 95% confidence interval;

HLA class II, human leukocyte antigen class II; PD-1, program death-1; PD-L1, program death-ligand 1; TILs, tumor infiltrating lymphocytes.