

**Online supplemental tables: Table S1-S8****Table S1. Data of clinical characteristics and FOXP3 expression level in SCLC patients enrolled in this study.**

Patient ID	Sex	Age, year	Smoke	Stage	RFS (months)	RFS status	Pathological review		FOXP3 expression on TILs		
							Pathological review 1	Pathological review 2	review 1	review 2	review 1+2
1	Male	55	Non-smoker	I	63	1	SCLC	SCLC	positive	positive	positive
2	Male	52	Non-smoker	III	1.2	1	SCLC	SCLC	negative	negative	negative
3	Male	76	Non-smoker	I	5	1	SCLC	SCLC	positive	positive	positive
4	Male	58	Non-smoker	II	69.4	0	SCLC	SCLC	positive	positive	positive
5	Male	55	Non-smoker	I	66.3	0	SCLC	SCLC	positive	positive	positive
6	Male	51	Non-smoker	III	6	1	SCLC	SCLC	negative	negative	negative
7	Male	76	Smoker	III	6	1	SCLC	SCLC	positive	positive	positive
8	Female	47	Non-smoker	III	65.7	0	SCLC	SCLC	positive	positive	positive
9	Female	65	Non-smoker	III	62.2	0	SCLC	SCLC	positive	positive	positive
10	Male	72	Non-smoker	III	14.5	1	SCLC	SCLC	negative	negative	negative
11	Male	73	Non-smoker	III	45	1	SCLC	SCLC	positive	positive	positive
12	Male	56	Non-smoker	III	15.6	1	SCLC	SCLC	negative	negative	negative
13	Male	66	Smoker	III	32	1	SCLC	SCLC	positive	positive	positive
14	Male	58	Smoker	III	1	1	SCLC	SCLC	positive	negative	positive

15	Female	68	Non-smoker	III	2	1	SCLC	SCLC	positive	positive	positive
16	Male	60	Non-smoker	II	54	0	SCLC	SCLC	positive	positive	positive
17	Male	67	Non-smoker	II	54.1	0	SCLC	SCLC	positive	positive	positive
18	Female	43	Non-smoker	II	49.1	0	SCLC	SCLC	positive	positive	positive
19	Male	76	Non-smoker	III	1.2	1	SCLC	SCLC	negative	negative	negative
20	Male	53	Non-smoker	I	1	1	SCLC	SCLC	positive	positive	positive
21	Male	60	Smoker	III	41.3	1	SCLC	SCLC	positive	positive	positive
22	Female	51	Non-smoker	III	8.2	1	SCLC	SCLC	negative	negative	negative
23	Male	52	Non-smoker	III	15.2	1	SCLC	SCLC	negative	negative	negative
24	Male	78	Non-smoker	I	49	0	SCLC	SCLC	positive	positive	positive
25	Male	54	Non-smoker	III	5.2	1	SCLC	SCLC	positive	positive	positive
26	Male	74	Non-smoker	III	5	1	SCLC	SCLC	positive	positive	positive
27	Male	60	Non-smoker	II	48	0	SCLC	SCLC	positive	positive	positive
28	Female	68	Non-smoker	III	38.1	1	SCLC	SCLC	positive	positive	positive
29	Female	66	Non-smoker	II	48.3	0	SCLC	SCLC	positive	positive	positive
30	Male	73	Non-smoker	I	18	1	SCLC	SCLC	negative	positive	positive
31	Male	65	Non-smoker	II	48	0	SCLC	SCLC	positive	positive	positive
32	Male	67	Smoker	I	1.7	1	SCLC	SCLC	positive	positive	positive
33	Female	73	Non-smoker	III	4.8	1	SCLC	SCLC	positive	positive	positive

34	Male	75	Smoker	I	41.2	1	SCLC	SCLC	positive	positive	positive
35	Male	59	Smoker	II	45.3	0	SCLC	SCLC	positive	positive	positive
36	Male	75	Smoker	I	17	1	SCLC	SCLC	positive	positive	positive
37	Male	65	Smoker	I	8.5	1	SCLC	SCLC	positive	positive	positive
38	Female	63	Non-smoker	I	41	0	SCLC	SCLC	positive	positive	positive
39	Male	57	Smoker	III	1	1	SCLC	SCLC	positive	positive	positive
40	Male	40	Non-smoker	I	6.3	1	SCLC	SCLC	positive	positive	positive
41	Male	42	Smoker	II	1	1	SCLC	SCLC	positive	positive	positive
42	Male	58	Non-smoker	II	15	1	SCLC	SCLC	negative	negative	negative
43	Male	54	Smoker	III	41	0	SCLC	SCLC	positive	positive	positive
44	Male	72	Smoker	III	6	1	SCLC	SCLC	positive	positive	positive
45	Female	56	Non-smoker	II	39.4	0	SCLC	SCLC	negative	negative	negative
46	Male	66	Smoker	I	8.3	1	SCLC	SCLC	positive	positive	positive
47	Male	70	Smoker	III	11	1	SCLC	SCLC	negative	negative	negative
48	Male	52	Smoker	III	37	0	SCLC	SCLC	positive	positive	positive
49	Male	66	Smoker	III	2	1	SCLC	SCLC	positive	positive	positive
50	Male	77	Smoker	III	36	0	SCLC	SCLC	positive	positive	positive
51	Female	63	Non-smoker	III	14	1	SCLC	SCLC	negative	negative	negative
52	Male	74	Smoker	III	18	1	SCLC	SCLC	positive	positive	positive

53	Male	64	Smoker	II	37.1	0	SCLC	SCLC	positive	positive	positive
54	Male	67	Non-smoker	III	36	0	SCLC	SCLC	positive	positive	positive
55	Male	81	Smoker	I	12.2	1	SCLC	SCLC	positive	positive	positive
56	Male	38	Non-smoker	I	35.5	0	SCLC	SCLC	positive	positive	positive
57	Male	63	Smoker	II	35.2	0	SCLC	SCLC	positive	positive	positive
58	Male	76	Non-smoker	III	7	1	SCLC	SCLC	positive	positive	positive
59	Male	67	Smoker	III	20.3	1	SCLC	SCLC	positive	positive	positive
60	Male	74	Smoker	III	14.7	1	SCLC	SCLC	negative	negative	negative
61	Female	67	Non-smoker	I	1.6	1	SCLC	SCLC	positive	positive	positive
62	Male	63	Non-smoker	III	16.2	1	SCLC	SCLC	positive	positive	positive
63	Female	47	Non-smoker	II	1	1	SCLC	SCLC	positive	positive	positive
64	Male	66	Smoker	II	6	1	SCLC	SCLC	positive	positive	positive
65	Male	68	Non-smoker	I	33.4	0	SCLC	SCLC	positive	positive	positive
66	Male	61	Non-smoker	I	33	0	SCLC	SCLC	positive	positive	positive
67	Male	72	Smoker	I	31	0	SCLC	SCLC	positive	positive	positive
68	Male	68	Smoker	I	10	1	SCLC	SCLC	positive	positive	positive
69	Female	61	Non-smoker	I	29.2	0	SCLC	SCLC	positive	positive	positive
70	Male	49	Smoker	III	31.4	0	SCLC	SCLC	positive	positive	positive
71	Male	68	Non-smoker	III	28.5	1	SCLC	SCLC	positive	positive	positive

72	Male	54	Non-smoker	II	31	0	SCLC	SCLC	positive	positive	positive
73	Male	52	Non-smoker	I	31.6	0	SCLC	SCLC	positive	positive	positive
74	Male	58	Smoker	III	31	0	SCLC	SCLC	positive	positive	positive
75	Male	63	Smoker	III	29.3	0	SCLC	SCLC	positive	positive	positive
76	Male	64	Smoker	II	6	1	SCLC	SCLC	positive	positive	positive
77	Male	51	Smoker	II	15	1	SCLC	SCLC	positive	positive	positive
78	Male	61	Smoker	I	28	0	SCLC	SCLC	positive	positive	positive
79	Male	68	Non-smoker	III	28.2	0	SCLC	SCLC	positive	positive	positive
80	Male	62	Smoker	II	1	1	SCLC	SCLC	positive	positive	positive
81	Female	63	Non-smoker	III	25.2	0	SCLC	SCLC	positive	positive	positive
82	Male	55	Non-smoker	III	10	1	SCLC	SCLC	positive	positive	positive
83	Male	66	Smoker	I	10.5	1	SCLC	SCLC	positive	positive	positive
84	Male	73	Smoker	II	1	1	SCLC	SCLC	positive	positive	positive
85	Male	63	Non-smoker	I	21.6	0	SCLC	SCLC	positive	positive	positive
86	Male	65	Non-smoker	I	21	0	SCLC	SCLC	positive	positive	positive
87	Male	69	Smoker	I	20	0	SCLC	SCLC	positive	positive	positive
88	Male	42	Non-smoker	III	9	1	SCLC	SCLC	positive	positive	positive
89	Female	70	Non-smoker	I	19	0	SCLC	SCLC	positive	positive	positive
90	Male	51	Non-smoker	I	19.7	0	SCLC	SCLC	positive	positive	positive

91	Male	60	Non-smoker	II	19	0	SCLC	SCLC	positive	positive	positive
92	Male	68	Smoker	III	12.1	1	SCLC	SCLC	positive	positive	positive
93	Male	66	Smoker	I	19	0	SCLC	SCLC	positive	positive	positive
94	Male	72	Smoker	I	18.3	0	SCLC	SCLC	negative	negative	negative
95	Male	67	Smoker	I	18.2	0	SCLC	SCLC	positive	positive	positive
96	Female	63	Non-smoker	I	18	0	SCLC	SCLC	positive	positive	positive
97	Male	63	Non-smoker	II	11.3	1	SCLC	SCLC	negative	negative	negative
98	Male	78	Smoker	I	17	0	SCLC	SCLC	positive	positive	positive
99	Male	51	Smoker	I	3.2	1	SCLC	SCLC	positive	positive	positive
100	Male	69	Smoker	I	6	1	SCLC	SCLC	positive	positive	positive
101	Male	62	Non-smoker	I	17	0	SCLC	SCLC	positive	positive	positive
102	Female	61	Non-smoker	I	17.9	0	SCLC	SCLC	positive	positive	positive

**Table S2. Characteristics of the 102 patients**

Characteristics	Number, n (%)
Age, years	
<65	53, (52.0)
≥ 65	49, (48.0)
Gender, n (%)	
Male	84, (82.4)
Female	18, (17.6)
Smoking status, n (%)	
Smoker	44, (43.1)
Non-smoker	58, (56.9)
T stage, n (%)	
1	40, (39.2)
2	47, (46.1)
3	13, (12.7)
4	2, (2.0)
N stage	
0	44, (43.1)

1	23, (22.5)
2	34, (33.3)
3	1, (0.1)
M stage	
0	98, (96.1)
1	4, (3.9)
Stage	
I	38, (37.3)
II	22, (21.6)
III	42, (41.2)
IV	0, (0)
Chemotherapy	
Yes	54, (52.9)
No	48, (47.1)

---



**Table S3. Correlation between FOXP3 expression on TILs and clinical data**

	FOXP3 expression on TILs (total: 102)		
	Positive, N (%)	Negative, N (%)	P value
Age, median			
<65	44, (43.1)	9, (8.9)	0.320
≥65	44, (43.1)	5, (4.9)	
Gender			
Male	73, (71.6)	11, (10.8)	0.689
Female	15, (14.7)	3, (2.9)	
Smoking status			
Smoker	41, (40.2)	3, (2.9)	0.077
Non-smoker	47, (46.1)	11, (10.8)	
Stage			
I- II	56, (54.9)	4, (3.9)	<b>0.013</b>
III	32, (31.4)	10, (9.8)	
Metastasis			
Yes	3, (2.9)	1, (1.0)	0.504
No	85, (83.3)	13, (12.7)	

Chemotherapy			
Yes	45, (44.1)	9, (8.8)	0.360
No	43, (42.2)	5, (4.9)	

**Table S4. Relationship between the expression level of FOXP3 and other immune biomarkers**

Biomarkers/parameter	FOXP3 on TILs	
	Correlation coefficient	P value
PD-L1 on tumor cells	0.056	0.573
PD-1 on TILs	0.327	<b>0.001</b>
PD-L1 on TILs	0.307	<b>0.002</b>
LAG-3 on TILs	0.204	<b>0.040</b>
CD3 on TILs	0.366	<b>0.000</b>
CD4 on TILs	0.307	<b>0.002</b>
CD8 on TILs	0.215	<b>0.030</b>

**Table S5. Univariate and multivariate analysis for prediction of FOXP3 expression on TILs in SCLC patients**

Variables	Univariate			Multivariate		
	Odds ratio	95% CI	P value	Odds ratio	95% CI	P value
Age (<65 y vs. ≥65 y)	0.556	0.172-1.791	0.325			
Sex (female vs. male)	0.753	0.187-3.032	0.690			
Smoking status (nonsmoker vs. smoker)	0.313	0.082-1.198	0.090			
Stage (I–II vs. III)	4.375	1.268-15.091	<b>0.019</b>	4.381	1.168- 16.428	<b>0.028</b>
PD-L1 on tumor cells (negative vs. positive)	0.000	Undefined	0.999			
PD-1 on TILs (negative vs. positive)	0.000	Undefined	0.997			

---

PD-L1 on TILs (negative vs. positive)	0.000	Undefined	0.998			
LAG-3 on TILs (negative vs. positive)	0.219	0.046-1.039	0.056			
CD3 on TILs (negative vs. positive)	0.051	0.006-0.406	<b>0.005</b>	0.051	0.006-0.415	<b>0.005</b>
CD4 on TILs (negative vs. positive)	0.000	Undefined	0.998			
CD8 on TILs (negative vs. positive)	0.135	0.017-1.077	0.059			

---

**Table S6. Correlation of clinical factors and RFS in SCLC**

Characteristic	Log-rank (Mantel-Cox)		Median survival	
	Chi square	P-value	value	95% CI
Age, n%	3.432	0.064	32.000	12.106-51.894
<65			63.000	1.985-124.015
≥65			18.000	10.666-25.334
Gender	1.685	0.194	32.000	12.106-51.894
Female			Undefined	Undefined
Male			18.000	2.106-33.894
Smoking status	3.852	0.050	32.000	12.106-51.894
Non-smoker			45.000	18.814-71.186
Smoker			15.000	6.645-23.355
Stage	8.141	<b>0.004</b>	32.000	12.106-51.894
Stage I–II			63.000	26.271-99.729
Stage III			14.700	10.360-19.040
FOXP3 on TILs	7.093	<b>0.008</b>	32.000	12.106-51.894
Negative			14.000	8.133-19.867
Positive			41.200	26.937-55.463
PD-L1 on TILs	8.137	<b>0.004</b>	32.000	12.106-51.894

			Negative	14.700	10.192-19.208
			Positive	41.300	41.076-41.524
LAG-3 on TILs	3.022	0.082		32.000	12.106-51.894
			Negative	15.000	0.000-31.011
			Positive	41.200	25.001-57.399
CD3 on TILs	7.669	<b>0.006</b>		32.000	12.106-51.894
			Negative	14.000	9.150-18.850
			Positive	41.300	28.503-54.097
CD4 on TILs	7.136	<b>0.008</b>		32.000	12.106-51.894
			Negative	15.000	11.082-18.918
			Positive	Undefined	Undefined
CD8 on TILs	7.998	<b>0.005</b>		32.000	12.106-51.894
			Negative	15.000	10.353-19.647
			Positive	Undefined	Undefined

**Table S7. Clinical characteristics of patients as validation set from cBioportal**

<b>Characteristics</b>	<b>Number, n (%)</b>
Age, years	
<65	2, (22.2)
≥65	7, (77.8)
Gender, n (%)	
Male	6, (66.7)
Female	3, (33.3)
Smoking status, n (%)	
Smoker	7, (77.8)
Non-smoker	1, (11.1)
Unknown	1, (11.1)
T stage, n (%)	
1	6, (66.7)
2	2, (22.2)
3	1, (11.1)
N stage	
0	6, (66.7)

---

1	1, (11.1)
2	1, (11.1)
3	1, (11.1)
M stage	
0	8, (88.9)
1	1, (11.1)
Stage	
I	6, (66.7)
II	0, (0.0)
III	2, (22.2)
IV	1, (11.1)
Chemotherapy	
Yes	4, (44.5)
No	2, (22.2)
Unknown	3, (33.3)

---



**Table S8. Relationship between the expression level of FOXP3 and clinicalpathological factors in the cbiportal database**

Biomarkers/parameter	FOXP3 expression in SCLC	
	Correlation coefficient	P value
PD-L1 expression	0.212	0.584
PD-1 expression	0.894	<b>0.001</b>
LAG-3 expression	0.775	<b>0.014</b>
CD3	0.883	<b>0.002</b>
CD4	0.773	<b>0.015</b>
CD8	0.011	0.977
Diagnosis age	0.466	0.206
Gender	0.414	0.379