

**Supplementary Table S1.** Clinical characteristics of the 184 early-stage CRC patients from the TCGA database.

Characteristics	No. of cases (%)
Total patients	184
Age, median (range) — yr	64 (31–90)
Gender	
Male	94 (51)
Female	90 (49)
Race	
White	140 (76)
Black or African American	31 (16.8)
Asian	12 (6.5)
American Indian or Alaska Native	1 (0.5)
Primary tumor location	
Colon	143 (77.7)
Rectum	41 (22.3)
TMN stage	
II	99 (53.8)
III	85 (46.2)

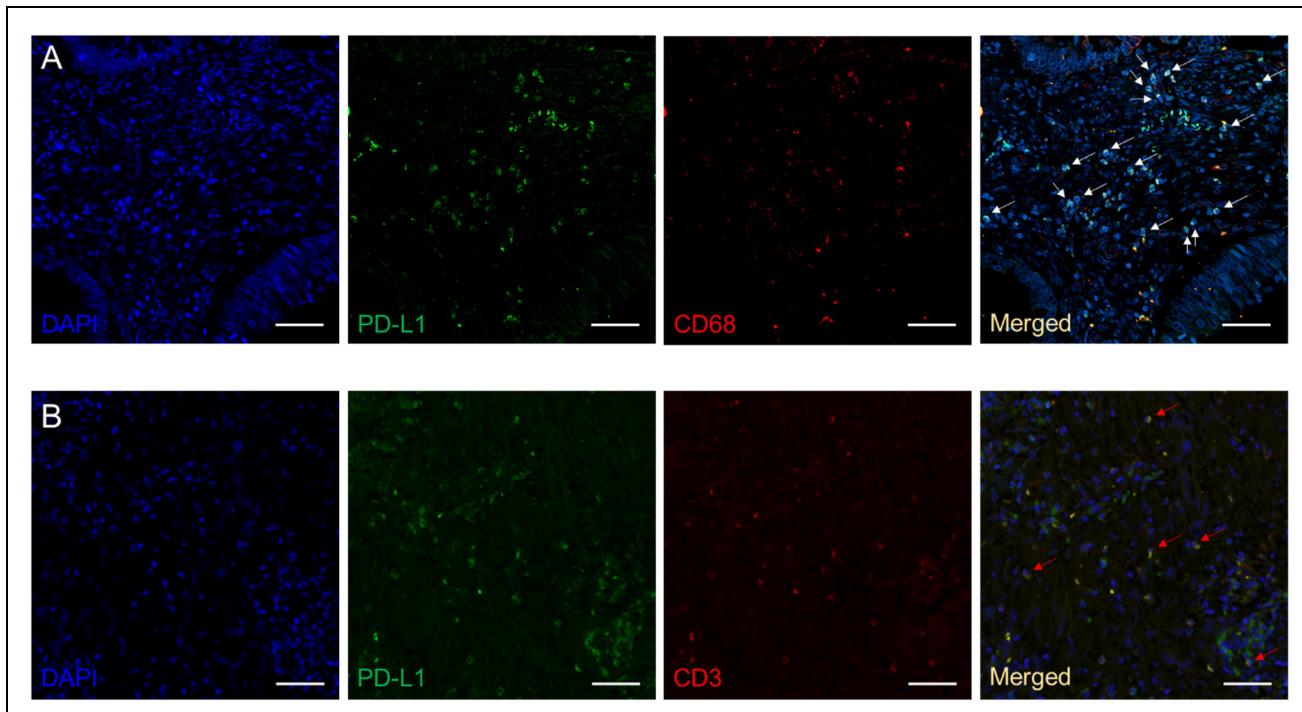
**Supplementary Table S2.** List of statistically significant enriched pathways in the high CD274 cluster, analyzed by GSEA.

	Gene Sets	Size	ES	NES	p-value	FDR q-value
1	<u>ALLOGRAFT REJECTION</u>	183	0.71	2.34	0.000	0.000
2	<u>IL6 JAK STAT3 SIGNALING</u>	84	0.74	2.31	0.000	0.000
3	<u>INFLAMMATORY RESPONSE</u>	193	0.71	2.25	0.000	0.000
4	<u>INTERFERON GAMMA RESPONSE</u>	191	0.72	2.23	0.000	0.000
5	<u>IL2_STAT5_SIGNALING</u>	189	0.55	2.22	0.000	0.000
6	<u>TNFA SIGNALING VIA NFKB</u>	194	0.66	2.15	0.000	0.001
7	<u>COMPLEMENT</u>	189	0.59	2.15	0.000	0.001
8	<u>KRAS SIGNALING UP</u>	182	0.55	2.10	0.000	0.001
9	<u>INTERFERON ALPHA RESPONSE</u>	91	0.7	2.01	0.004	0.004
10	<u>ANGIOGENESIS</u>	35	0.62	1.97	0.000	0.005
11	<u>APOPTOSIS</u>	150	0.44	1.84	0.000	0.021
12	<u>HYPOXIA</u>	182	0.43	1.72	0.021	0.048
13	<u>UV_RESPONSE_DN</u>	135	0.48	1.68	0.020	0.062
14	<u>COAGULATION</u>	122	0.42	1.61	0.031	0.091
15	<u>HEME METABOLISM</u>	179	0.32	1.43	0.031	0.189

**Supplementary Table S3.** Correlation of CD274 with CD3G and CD68 in early-stage CRCs from TCGA database

Correlation between	r*	P value
<i>CD274</i> and <i>CD3G</i>	0.720	<0.001
<i>CD274</i> and <i>CD68</i>	0.555	<0.001

\*Spearman correlation



**Supplementary Figure S1.** PD-L1, CD68 and CD3 expression of immune cells in the representative case with high CPS. Representative immunofluorescent images of PD-L1 expression co-stained with anti CD68 antibodies (A) and anti CD3 antibodies (B) are shown. The white and red arrows indicate the colocalized foci of PD-L1 and CD68 (for macrophages) and PD-L1 and CD3 (for T lymphocytes), respectively. Scale car, 50  $\mu$ m.