

**Supplementary Table 2. Immunohistochemistry antibodies.**

No.	Identified cells	Antibody name	Clonality	Species	Company	Product No.	Diluted	IHC scoring method
1	M2-like TAMs	Anti-CD163 antibody	Rabbit		Cell Signaling Techn	93498S	1:400	Cell number (200x)
2	B cells	Anti-CD20 antibody	Rabbit		Invitrogen	PA5-16701	1:800	Cell number (200x)
3	PD-L1+ cells	Anti-CD274 antibody	Rabbit		Sigma	SAB4301882	1:20	Cell percentage (per specimen)
4	T cells	Anti-CD3 antibody	Rabbit		Cell Signaling Techn	85061S	1:600	Cell number (200x)
5	CD4+ T cells	Anti-CD4 antibody	Rabbit		Sigma	HPA004252	1:600	Cell number (200x)
6	NK cells	Anti-CD56 antibody	Mouse		Invitrogen	07-5603	1:800	Cell number (200x)
7	Neutrophils	Anti-CD66b antibody	Mouse		Bio Legend	392902	1:400	Cell number (200x)
8	TAMs	Anti-CD68 antibody	Mouse		Abcam	AB955	1:400	Cell number (200x)
9	CD8+ T cells	Anti-CD8 antibody	Mouse		Cell Signaling Techn	70306S	1:900	Cell number (200x)
10	CTLA-4+ cells	Anti-CTLA-4 antibody	Rabbit		Sigma	SAB1306189	1:1500	Cell number (200x)
11	Tregs	Anti-FOXP3 antibody	Mouse		Bio Legend	320201	1:500	Cell number (200x)
12	Th2 cells	Anti-GATA3 antibody	Rabbit		Abcam	AB199428	1:250	Cell number (200x)
13	GZMB+ cells	Anti-GZMB antibody	Rabbit		Cell Signaling Techn	44153S	1:500	Cell number (200x)
14	IFN- $\gamma$ + cells	Anti-IFN-gamma antibody	Mouse		Abcam	AB218426	1:400	Cell number (200x)
15	IL-10+ cells	Anti-IL-10 antibody	Rabbit		Novus	JES3-12G8	1:10	Cell number (200x)
16	LAG-3+ cells	Anti-LAG-3 antibody	Rabbit		Sigma	HPA013967	1:1200	Cell number (200x)
17	Mast cells	Anti-mast cell tryptase antibody	Mouse		Abcam	AB2378	1:10000	Cell number (200x)
18	PD-1+ cells	Anti-PDCD1 antibody	Rabbit		Sigma	HPA035981	1:100	Cell number (200x)
19	Perforin+ cells	Anti-Perforin antibody	Mouse		Abcam	AB47225	1:200	Cell number (200x)
20	Siglec-9+ cells	Anti-Siglec-9 antibody	Rabbit		Abcam	ab197981	1:50	Cell number (200x)
21	Siglec-9 Ligand+ cells	Anti-Siglec-9 ligand antibody	Mouse		R&D Systems	1139-SL-050	5 ug/mL	IHC score
22	Th1 cells	Anti-T-bet antibody	Rabbit		Abcam	AB150440	1:250	Cell number (200x)
23	TGF- $\beta$ 1+ cells	Anti-TGF- $\beta$ 1 antibody	Rabbit		Sigma	SAB4502954	1:500	Cell number (200x)
24	TIM-3+ cells	Anti-Tim3 antibody	Mouse		Invitrogen	MA5-32839	1:1200	Cell number (200x)
25	TNF- $\alpha$ + cells	Anti-TNF-alpha antibody	Mouse		Abcam	AB1793	1:100	Cell number (200x)
26	VEGFR2+ cells	Anti-VEGFR2 antibody	Rabbit		Sigma	SAB4501645	1:400	Cell number (200x)
27	VEGFA+ cells	Anti-VEGFA antibody	Rabbit		Sigma	HPA069116	1:200	Cell number (200x)
28	CXCL13+ cells	CXCL13	Goat		R&D	AF801	1:400	IHC score