Table S1. Antibodies used for immunostaining, flow cytometry and CyTOF

Antibody	Supplier	Catalog Number	IHC dilution	IF dilution
α-Amylase	Sigma-Aldrich	A8273	-	1:100
Arginase-1	Cell Signaling	93668	-	1:100
Alpha-smooth muscle actin	Sigma-Aldrich	A2547	-	1:1000
B220	eBioscience	14-0452-81	1:100	-
CCL8	Novus	AF790-SP	1:100	-
CD8	Cell Signaling	98941	-	1:400
CD45	BD Pharmingen	553076	1:200	1:100
CD138	BD Pharmingen	553714	-	1:100
Chi3l3	R&D Systems	AF2446	-	1:200
CK19 (TromaIII)	Iowa Developmental Hybridoma Bank	-	-	1:100
E-cadherin (4A2)	Cell Signaling	14472	-	1:50
E-cadherin (24E10)	Cell Signaling	3195	-	1:100
F4/80	Cell Signaling	70076	-	1:200
PDGFR beta	abcam	ab32570	-	1:200
Opal antibody	**Supplier**	**Catalog Number**	**Dilution**	**TSA fluorophore**
CD3	Dako	A0452	1:400	520
CD8	SpringBio	M5390	1:400	570
CD163	Leica Biosystems	NCL-L-CD163	1:400	650
Foxp3	Cell Signaling	12653	1:400	620
Pancytokeratin	Dako	M3515	1:500	690
Secondary antibody	Opal Polymer HRP Ms Plus Rb	ARH1A01EA	-	
Flow Cytometry Antibody	**Supplier**	**Clone**	**Dilution**	
CD1d	BD Pharmingen	1B1	1:100	
CD3	BD Pharmingen	17A2	1:100	

CD5	BD Pharmingen	53-7.3	1:100	
CD4	BD Pharmingen	RM4-5	1:100	
CD8α	BD Pharmingen	53-6.7	1:100	
CD11b	BD Pharmingen	M1/70	1:100	
CD19	BD Pharmingen	1D3	1:100	
CD45	Invitrogen	30-F11	1:100	
CD274 (PD-L1)	BD Pharmingen	MIH5	1:100	
CD326 (EpCAM)	BioLegend	G8.8	1:100	
F4/80	eBioscience	BM8	1:100	
Foxp3	eBioscience	FJK-16s	1:100	
IFN-γ	BD Pharmingen	XMG1.2	1:100	
IL4	BD Pharmingen	11B11	1:100	
Ly-6C	BD Pharmingen	AL-21	1:100	
Ly-6G	BD Pharmingen	1A8	1:100	
PDGFRa	eBioscience	APA5	1:100	
CyTOF Antibody - mouse	**Supplier**	**Clone**	**Dilution**	**Label**
CD45	Fluidigm	30-F11	1:200	089Y
Ly-6G	Fluidigm	1A8	1:400	141Pr
CD11b (Mac-1)	Fluidigm	M1/70	1:300	143Nd
CD4	Fluidigm	RM4-5	1:100	145Nd
F4/80	Fluidigm	BM8	1:100	146Nd
CD19	Fluidigm	6D5	1:100	149Sm
Ly-6C	Fluidigm	HK1.4	1:100	150Nd
CD3e	Fluidigm	145-2C11	1:100	152Sm
CD191 (CCR1)	custom	S15040E	1:100	160Gd
iNos (NOS2)	Fluidigm	CXNFT	1:100	161Dy
Arginase 1	Fluidigm	Polyclonal	1:100	166Er
CD8a	Fluidigm	53-6.7	1:100	168Er
CD206 (MMR)	Fluidigm	C068C2	1:100	169Tm
CD161 (NK1.1)	Fluidigm	PK136	1:100	170Er

CD326 (EpCAM)	custom	G8.8	1:100	176Yb
CD11c	Fluidigm	N418	1:100	209Bi
CyTOF Antibody - human	**Supplier**	**Clone**	**Dilution**	**Label**
CD45	Fluidigm	HI30	1:200	089Y
CD3	Fluidigm	UCHT1	1:200	141Pr
CD11a	Fluidigm	HI111	1:100	142Nd
CD11b (Mac-1)	Fluidigm	ICRF44	1:100	144Nd
CD11c	Fluidigm	Bu15	1:200	147Sm
CD66a/c/e	Fluidigm	ASL-32	1:300	149Sm
CD163	Fluidigm	GHI/61	1:100	154Sm
CD8a	Fluidigm	RPA-T8	1:50	162Dy
CD33	Fluidigm	WM53	1:100	163Dy
CD19	Fluidigm	HIB19	1:300	165Ho
CD206 (MMR)	Fluidigm	15-2	1:100	168Er
CD25 (IL-2R)	Fluidigm	2A3	1:100	169Tm
HLA-DR	Fluidigm	L243	1:400	174Yb
CD14	Fluidigm	M5E2	1:100	175Lu
CD4	Fluidigm	RPA-T4	1:50	176Yb
CD16	Fluidigm	3G8	1:100	209Bi

Table S2. Complex phenotype design for multispectral imaging analysis

Primary antibody	Opal TSA	Cell compartment	Minimum mean fluorescent intensity score	Primary phenotype using inFom	Secondary phenotype using R
CD3	Opal 520	N/A	N/A	T cell	Treg (CD3+CD8-FoxP3+)
CD8	Opal 570	Cytoplasm	7	N/A	
FoxP3	Opal 620	Nucleus	7	N/A	
CD3	Opal 520	N/A	N/A	T cell	CD8 T cell (CD3+CD8+Foxp3-)
CD8	Opal 570	Cytoplasm	7	N/A	
FoxP3	Opal 620	Nucleus	7	N/A	
CD3	Opal 520	N/A	N/A	T cell	T cell
CD163	Opal 650	N/A	N/A	APC	APC
Pancytokeratin	Opal 690	N/A	N/A	Epithelial	Epithelial cell

Table S3. Primer sequences for quantitative RT-PCR

Gene	Forward Primer	Reverse Primer
Acta2	GCTGGTGATGATGCTCCC A	GCCCATTCCAACCATTACTCC
Arg1	CTCCAAGCCAAAGTCCTTAGAG	AGGAGCTGTCATTAGGGACATC
Ccl3	TTCTCTGTACCATGACACTCTGC	CGTGGAATCTTCCGGCTGTAG
Ccl6	GCTGGCCTCATACAAGAAATGG	GCTTAGGCACCTCTGAACTCTC
Ccl8	TCTACGCAGTGCTTCTTTGCC	AAGGGGGATCTTCAGCTTTAGTA
Cd274	GCTGAAGTCAATGCCCCATA	TCCACGGAAATTCTCTGGTTG
Chi3l3	CAGGTCTGGCAATTCTTCTGAA	GTCTTGCTCATGTGTGTAAGTGA
Col1a	GCTCCTCTTAGGGGCCACT	CCACGTCTCACCATTGGGG
Ctgf	GGGCCTCTTCTGCGATTTC	ATCCAGGCAAGTGCATTGGTA
Cxcr4	GACTGGCATAGTCGGCAATG	AGAAGGGGAGTGTGATGACAAA
Cyclophilin A	TCACAGAATTATTCCAGGATTCATG	TGCCGCCAGTGCCATT
F4/80	CCCAGCTTCTGCCACCTGCA	GGAGCCATTCAAGACAAAGCC
Fn1	ATGTGGACCCCTCCTGATAGT	GCCCAGTGATTTCAGCAAAGG
Gzmb	CCACTCTCGACCCTACATGG	GGCCCCCAAAGTGACATTTATT
Ifnγ	TCAAGTGGCATAGATGTGGAAGAA	TGGCTCTGCAGGATTTTCAGT
Il1b	GCAACTGTTCCTGAACTCAACT	ATCTTTTGGGGTCCGTCAACT
Il2	TGAGCAGGATGGAGAATTACAGG	GTCCAAGTTCATCTTCTAGGCAC
Il4	CCCCAGCTAGTTGTCATCCTG	CGCATCCGTGGATATGGCTC
Il5	GCAATGAGACGATGAGGCTTC	GCCCCTGAAAGATTTCTCCAATG
Il10	GCTATGCTGCCTGCTCTTACT	CCTGCTGATCCTCATGCCA
Il13	AGACCAGACTCCCCTGTGCA	TGGGTCCTGTAGATGGCATTG
Il17	AAGGCAGCAGCGATCATCC	GGAACGGTTGAGGTAGTCTGAG
Il22	ACCTTTCCTGACCAAACTC	AGCTTCTTCTCGCTCAGACG

Pdcd1lg2	TTGTCGGTGTGATTGGCTTC	AAAAGGCAGCACACAGTTGC
Prf-1	AGCACAAGTTCGTGCCAGG	GCGTCTCTCATTAGGGAGTTTTT
Retnla	CCAATCCAGCTAACTATCCCTCC	ACCCAGTAGCAGTCATCCCA
Tgfb1	TGACGTCACTGGAGTTGTACGG	GGTTCATGTCATGGATGGTGC
Tnfa	CATCTTCTCAAAATTCGAGTGACAA	TGGGAGTAGACAAGGTACAACCC