
Supplementary information

Systemic dysfunction and plasticity of the immune macroenvironment in cancer models

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Supplementary Table 1. Antibody panel used for mass cytometry experiments.

MAIN

Channel	Metal	Protein	Concentration (ug/ml)	Clone	Vendor	Catalogue #	Lot #
113	In	Ter119	3	TER119	Biolegend	116202	B250339
115	In	CD45	6	30-F11	Biolegend	103102	B253429
139	La	Ly6G	1.5	1A8	Biolegend	127602	B265459
140	Ce	IgD	3	11-26c.2a	Biolegend	405702	B165867
141	Pr	CD16/32	3	2.4G2	BD	553142	8130843
142	Nd	CD49b	0.75	HMA2	Biolegend	103501	--
143	Nd	CD11c	0.75	N418	Biolegend	117302	B191075
144	Nd	CD49d	3	R1-2	BioLegend	103610	B254009
145	Nd	CD27	0.75	LG.3A10	Biolegend	124202	B233065
146	Nd	CD138	0.1875	281-2	Biolegend	142502	B233106
147	Sm	PD-L1	3	10F.9G2	Biolegend	124302	B220492
148	Nd	CD103	3	2E7	Biolegend	121402	B249116
149	Sm	SiglecF	1.5	E50-2440	BD	552125	7264727
150	Nd	PDCA-1	0.75	129c1	Biolegend	127102	B188381
151	Eu	Ly6C	0.75	HK1.4	Biolegend	128002	B253176
152	Sm	Ki67	6	SolA15	BD	556003	6280947
153	Eu	CD11b	3	M1/70	Biolegend	101202	B261558
154	Sm	cKit	1.5	2B8	Biolegend	105802	B241900
155	Gd	CD8	3	53-6.7	Biolegend	100702	B237234
156	Gd	CD4	0.75	RM4-5	Biolegend	100506	B251707
157	Gd	CD3	0.75	17A2	Biolegend	100202	B241388
158	Gd	B220	1.5	RA3-6B2	Biolegend	103202	B170375
159	Tb	PD-1	0.75	29F.1A12	Biolegend	135202	B196019
160	Gd	NK1.1	1.5	PK136	Biolegend	108702	B187819
161	Dy	T-bet	6	O4-46	BD	561263	3032551
162	Dy	TCRgd	3	GL3	Biolegend	118101	--
163	Dy	CD62L-FITC	3	MEL-14	Biolegend	104443	B235113
164	Dy	CD86	0.375	GL-1	Biolegend	105002	B244244
165	Ho	CD69	0.75	Polyclonal	R&D	AF2386	UIU011808A
166	Er	FcER1a	1.5	MAR-1	Biolegend	134321	B243579
167	Er	Foxp3	3	NRRF-30	eBioscience	14-4771-80	1972297
168	Er	ROrgt	6	B2D	eBioscience	14-6981-82	--
169	Tm	F4/80	1.5	BM8	Biolegend	123102	B226029
170	Er	CD115	1.5	AF598	Biolegend	135521	--
171	Yb	CD64	6	X54-5/7.1	Biolegend	139302	B270355
172	Yb	GATA3	3	16E10A23	Biolegend	653802	B201420
173	Yb	CD19	0.75	6D5	Biolegend	115502	B166684
174	Yb	IgM	6	RMM-1	Biolegend	406502	B256697
175	Lu	CD44	0.375	IM7	Biolegend	103002	B246298
176	Yb	CD90	0.75	G7	Biolegend	105202	B187334
209	Bi	MHC II	0.1875	M5/114.15.2	Biolegend	107602	B141287

Other Substitutes

Channel	Metal	Protein	Concentration (ug/ml)	Clone	Vendor	Catalogue #	Lot #
89	Y	Ter119	6	TER119	BioLegend	116202	B250339
113	In	CD45.2	3	104	BioLegend	109802	B269632
115	In	CD45.1	3	A20	BioLegend	110702	B237865
140	Ce	H2KB	3	AF6-88.5	BioLegend	116501	--
140	Ce	KLRG1	0.75	2F1	BD	562190	8113778
141	Pr	GranzymeB	3	QA16A02	BioLegend	372202	--
144	Nd	CD43	6	S7	BD	553268	8268962
160	Gd	CD31	6	MEC13.3	BioLegend	102512	B226133
161	Dy	CD80	3	16-10A1	BioLegend	104702	B237237
162	Dy	CD83	3	Michel-19	BioLegend	121502	B253543
163	Dy	CD62L	3	95218	R&D	MAB5761	--
168	Er	CD25	3	PC61	BioLegend	102014	B235231
172	Yb	cCaspase3	1	5A1E	Fluidigm	3172023A	0391807
174	Yb	CD127	4	A7R34	BioLegend	135002	B168578
174	Yb	GranzymeB	1.5	GB11	BioRad	MCA2120	--
176	Lu	CD54	3	YN1/1.7.4	BioLegend	116102	B197852
163	Dy	a-FITC		Polyclonal	Southern Biotech	6400-01	L1217-QE58
FITC	NA	CD62L	3	MEL-14	Biolegend	104406	B233014

Supplementary Table 2. Change in spleen immune cell frequencies with tumor burden.

two-sided Wilcoxon rank-sum tests with Benjamini-Hochberg correction

4T1		
Immune Cell Type	raw pVal	adjusted pVal
ClassicalMonocytes	5.28E-05	0.000686167
Neutrophils	5.28E-05	0.000686167
Bcells	6.55E-05	0.000785893
Tregs	8.11E-05	0.000891661
gdTCells	0.000123	0.001232678
nonClassicalMonocytes	0.000186	0.001670571
CD8TCells	0.00072	0.004320097
NKCells	0.000598	0.004320097
PlasmaCells	0.00072	0.004320097
Eosinophils	0.001481	0.007403936
CD4TCells	0.006514	0.026055191
pDCs	0.011825	0.035476343
cDCs	0.779707	0.779706761
Macrophages	0.460883	0.779706761

Number of Animals
Controls 8
Tumor 17

p < 0.05

P < 0.1

nonsignificant

LLC		
Immune Cell Type	raw pVal	adjusted pVal
ClassicalMonocytes	8.73E-05	0.00122275
Neutrophils	0.000115	0.001489942
Eosinophils	0.000253	0.003031765
nonClassicalMonocytes	0.000419	0.004611308
Macrophages	0.000869	0.008688611
Bcells	0.001384	0.012454788
CD8TCells	0.005073	0.040583301
pDCs	0.007574	0.053018294
cDCs	0.019242	0.096212185
NKCells	0.016096	0.096212185
CD4TCells	0.037797	0.151188336
gdTCells	0.156288	0.468863135
PlasmaCells	0.488718	0.921212055
Tregs	0.921212	0.921212055

Number of Animals
Controls 10
Tumor 12

MMTV-PyMT		
Immune Cell Type	raw pVal	adjusted pVal
ClassicalMonocytes	0.014248	0.170976956
NKCells	0.014248	0.170976956
nonClassicalMonocytes	0.014248	0.170976956
Neutrophils	0.022494	0.247436983
CD8TCells	0.034611	0.311495018
pDCs	0.034611	0.311495018
Eosinophils	0.051913	0.415303719
cDCs	0.075927	0.531488741
Bcells	0.150786	0.799846106
Macrophages	0.271899	0.799846106
CD4TCells	0.446873	0.799846106
PlasmaCells	0.672604	0.799846106
Tregs	0.672604	0.799846106
gdTCells	0.799846	0.799846106

Number of Animals
Controls 3
Tumor 7

Supplementary Table 3. Antibody panel used for flow cytometry experiments.

Fluorophore	Protein	Ratio	Clone	Vendor	Catalogue #	Lot #
PE-Dazzle594	CD3	1:100	17A2	Biolegend	100246	B246894
PacificBlue	CD4	1:100	RM4-5	BD	558107	56828
BV786	CD8	1:100	53-6.7	BD	563332	--
APC-Cy7	CD45	1:100	30-F11	Biolegend	103116	B266564
APC	CD38	1:50	90	Biolegend	102712	B259441
PE	CD101	1:50	Moushi101	eBioscience	12-1011-80	1911703
PE-Cy7	PD-1	1:100	29F.1A12	Biolegend	135215	--
BV421	TCRb	1:100	H57-597	Biolegend	109229	B264324
PE	IFNg	1:100	XMG1.2	Biolegend	505808	B265789
BV711	IL-2	1:100	JES6-5H4	Biolegend	503837	B264812
FITC	TNFa	1:100	MP6-XT22	BD	554418	68325
BV650	CD8	1:100	53-6.7	Biolegend	100741	B253266
BV510	KLRG1	1:100	2F1/KLRG1	Biolegend	138421	--
BV421	CD62L	1:100	MEL-14	Biolegend	104435	--
FITC	CD45.2	1:100	104	Biolegend	109805	--
APC	CD8	1:100	53-6.7	Biolegend	100711	--
PE-Cy7	MHC II	1:200	AF6-120.1	Biolegend	116419	--
PE	CD45.1	1:100	A20	Biolegend	110708	B262097