

Supplemental Figure 11. Associations of demographics with Flow and TCR in Tumor samples

	Age		BMI		Positive Nodal Status	Negative Nodal Status		Advanced Stage	Early Stage		Squamous	Other ¹	
	Estimate	P	Estimate	P	Median (IQR)	Median (IQR)	P	Median (IQR)	Median (IQR)	P	Median (IQR)	Median (IQR)	P
CD8+ (% Live Lymphocytes)													
CD8+	0.2	0.01*	-0.2	0.06	1.8(4.4)	2.3(13)	0.29	2(3.5)	1.6(8.8)	0.89	1.8(6)	3.1(9.3)	0.81
CD8+CD69+	0.1	0.09	-0.2	0.03*	0.7(2.4)	0.8(4.8)	0.64	0.9(2.1)	0.7(3.3)	0.70	0.8(2.6)	0.4(3.3)	0.64
CD8+CTLA4+	0	0.75	0	0.78	0.2(0.6)	0.1(0.6)	0.80	0.4(0.8)	0.1(0.3)	0.10	0.2(0.6)	0.2(0.5)	0.95
CD8+GrnzB+	0	0.23	-0.2	0.04*	0.3(1.2)	0.2(3.4)	0.59	0.3(1.1)	0.2(2.4)	0.94	0.3(1.3)	0.1(2.5)	0.67
CD8+IFNg+ (Peptide)	0	0.12	0	0.24	0(0)	0(0)	0.03	0(0.1)	0(0)	0.26	0(0)	0(0)	0.64
CD8+IFNg+	0	0.99	0	0.92	0(0)	0(0)	0.97	0(0)	0(0)	0.41	0(0)	0(0)	0.91
CD8+Ki-67+	0	0.07	0	0.11	0.1(0.3)	0.1(0.3)	0.34	0.1(0.4)	0.1(0.2)	0.83	0.1(0.4)	0.2(0.2)	0.96
CD8+PD1+	0.1	<0.01*	-0.1	0.14	0.2(0.8)	0.2(0.8)	0.34	0.5(0.8)	0.1(0.7)	0.33	0.2(0.8)	0.7(0.9)	0.61
CD4+ (% Live Lymphocytes)													
CD4+	0.3	0.01*	-0.2	0.31	3(7.6)	3.1(12.2)	0.68	1.7(6.5)	3.2(10.3)	0.65	2.7(7.8)	4(13.3)	0.98
CD4+CD69+	0.1	<0.01*	-0.1	0.18	0.3(1.8)	0.4(1)	0.97	0.2(1.1)	0.4(1.9)	0.99	0.4(1.6)	0.1(0.6)	0.25
CD4+CTLA4+	0	0.16	0	0.25	0.3(1.2)	0.2(0.4)	0.92	0.2(1.2)	0.3(0.8)	0.92	0.3(1)	0.2(0.9)	0.95
CD4+Foxp3+	0	0.14	0	0.37	0.3(0.9)	0.2(0.8)	0.41	0.5(1.2)	0.2(0.6)	0.51	0.2(0.8)	0.2(1.7)	0.95
CD4+GrzB+	-0.1	0.36	0	0.94	0.6(1.6)	0.7(0.3)	1.00	0.1(0.1)	0.9(0.5)	0.08	0.7(1.2)	0.1(0)	0.87
CD4+IFNg+	-0.1	0.29	0	0.72	0(0.1)	0(0.1)	0.26	0(0.1)	0(0.1)	0.74	0(0.1)	0(0.1)	0.77
CD4+Ki-67+	0	0.57	0	0.79	0.1(0.6)	0.2(0.4)	0.75	0.3(0.6)	0.1(0.4)	0.94	0.2(0.6)	0.1(0.3)	0.49
CD4+PD1+	0.1	0.16	-0.1	0.47	0.3(0.9)	0.4(1.1)	0.69	0.3(0.8)	0.4(1.2)	0.43	0.3(0.9)	0.5(1.2)	0.66
DC's (% Live Lymphocytes)													
CD11b+CD11c-CD86+	0	0.50	0	0.36	0.3(0.5)	0(0)	0.26	0.3(0.3)	0(0.3)	0.78	0.2(0.4)	0(0)	0.43
CD11b+CD40+	-0.1	0.44	-0.2	0.38	4.6(8.7)	0(0.2)	0.05	7.8(10.9)	0.4(1)	0.17	1.2(8.4)	0.5(0)	0.87
CD11b+CD86+	-0.1	0.33	0	0.90	0.1(1)	0.1(0)	0.61	0(0.1)	0.1(1)	0.23	0.1(0.6)	0(0)	0.63
CD11c+CD11b+	-0.2	0.25	-0.3	0.26	1.1(5.9)	0.9(0.4)	0.61	0.5(1.3)	0.9(6.8)	0.65	0.9(3.9)	0(0)	0.27
CD11c+CD11b-	0.3	0.24	-0.2	0.58	2.1(4.2)	1.1(0.5)	0.05	1.9(1)	1.3(3.4)	0.65	1.7(3.6)	0(0)	0.15
T-Cell Repertoire													
Clonality ²	0	0.55	0	0.81	0.1(0.1)	0.1(0.1)	0.83	0(0.1)	0.1(0.1)	0.89	0.1(0.1)	0(0.1)	0.67
Entropy ²	0	0.46	0	0.59	10.5(2.6)	10.9(1.8)	0.72	10.5(2.7)	10.5(2)	0.83	10.5(2.2)	10(2.3)	0.69
Rearrangements ²	58.1	0.20	-28.1	0.72	2855(5200.5)	2599.5(5493.3)	0.92	2911(4928.5)	2281(5587.5)	0.97	2995.5(5147)	1254.5(9540)	0.56
Templates ²	41.3	0.65	-130.6	0.40	5052(8197)	2883(9552.5)	0.96	5257(8023.5)	3277(10592.5)	0.95	5450.5(8197)	2374.5(15516)	0.69
Sample Entropy	0	0.56	0	0.56	10.8(2.5)	11.3(1.9)	0.72	10.8(2.7)	10.9(2)	0.85	10.8(2.2)	10.3(2.2)	0.68
Total Rearrangements	70.2	0.21	-30.3	0.75	3463.5(6224.8)	3224(7043.3)	0.94	3532(5954)	2878(7093.5)	0.97	3749.5(6140.3)	1598.5(11325)	0.55
Total Templates	54.3	0.62	-144.6	0.44	6215.5(10126.8)	3586(11951)	0.97	6280(9793)	4114(13236.5)	0.93	6461.5(10126)	2981(18800)	0.68
Max Frequency	0	0.15	0	0.71	0(0)	0(0)	0.55	0(0)	0(0)	0.75	0(0)	0(0)	0.42
Max Productive Frequency	0	0.06	0.0	0.86	0(0)	0(0)	0.60	0(0)	0(0)	0.80	0(0)	0(0.1)	0.46
OOF Rearrangements	11.2	0.25	-2.3	0.89	573(1115.3)	566.5(1413.5)	0.95	574(880.5)	538(1370)	0.99	688.5(1093)	323(1638.8)	0.50
OOF Templates	0.2	0.47	-13.4	0.63	1070.5(1910.5)	646.5(2174.3)	1.00	954(1811.5)	708(2265.5)	0.85	1209(1910.5)	563.5(2953.8)	0.65

¹Adenocarcinoma and Adenosquamous

² Productive

* Statistically significant at $\alpha=0.05$; Simple linear regression

† Statistically significant at $\alpha=0.05$; Wilcoxon signed rank test