

Supplementary Table S2. Significant features in the univariable analysis for prediction of progression-free survival.

Feature Description	HR (95% CI)	P-value
From the Panel 1 sample, within the tumor stroma region: The median distance of a PanCK+ cell to the nearest CD8+ cell, within a 10 µm search radius	0.34 (0.14, 0.79)	0.013
From the Panel 1 sample, within the tumor stroma region: the standard deviation in distance of a PanCK cell to the nearest CD8+ cell, within a 30 µm search radius	1.30 (1.00, 1.60)	0.045
From the Panel 2 sample, within the epithelial tumor region: The average number of PD1+ cells within 10 µm of a PDL1+ cell	3.1e-6 (1.4e-11, 0.70)	0.044
From the Panel 2 sample, within the epithelial tumor region: The standard deviation in distance of a PD1+ cell to the nearest PDL1+ cell, within a 30 µm search radius	0.70 (0.51, 0.96)	0.025
From the Panel 2 sample, within the tumor region: The average number of CD8+/PD1+ cells within 10 µm of a CD8+/PDL1+ cell	4.3e-6 (2.6e-10, 0.07)	0.013
From the Panel 2 sample, within the tumor region: The average number of CD8+/PD1+ cells within 30 µm of a CD8+/PDL1+ cell	0.29 (0.11, 0.81)	0.018
From the Panel 2 sample, within the tumor region: The median distance of a CD8+/PDL1+ cell to the nearest CD8+/PD1+ cell, within a 30 µm search radius	1.40 (1.10, 1.90)	0.009
From the Panel 2 sample, within the tumor region: The average number of CD8+/PD1+ cells within 10 µm of a PDL1+ cell	6.3e-10 (3.4e-17, 0.01)	0.013
From the Panel 2 sample, within the tumor region: The average number of CD8+/PD1+ cells within 30 µm of a PDL1+ cell	0.19 (0.04, 0.83)	0.027
From the Panel 2 sample, within the tumor region: The median distance of a PDL1+ cell to the nearest CD8+/PD1+ cell, within a 30 µm search radius	1.40 (1.10, 1.80)	0.019
From the Panel 2 sample, within the tumor region: The average number of CD8+/PD1+ cells within 10 µm of a PanCK+/PDL1+ cell	1.5e-9 (2.7e-16, 0.01)	0.01
From the Panel 2 sample, within the tumor region: The average number of CD8+/PD1+ cells within 30 µm of a PanCK+/PDL1+ cell	0.09 (0.01, 0.55)	0.0009
From the Panel 2 sample, within the tumor region: The median distance of a PanCK+/PDL1+ cell to the nearest CD8+/PD1+ cell, within a 30 µm search radius	1.3 (1.1, 1.6)	0.011
From the Panel 2 sample, within the tumor region: The average number of PD1+ cells within 10 µm of a PDL1+ cell	4e-8 (3.1e-13, 0.01)	0.004
From the Panel 2 sample, within the tumor region: The average number of PD1+ cells within 30 µm of a PDL1+ cell	0.26, (0.9, 0.73)	0.01
From the Panel 2 sample, within the tumor region: The median distance of a PDL1+ cell to the nearest PD1+ cell, within a 30 µm search radius	1.4 (1.1, 1.8)	0.009
From the Panel 2 sample, within the tumor stroma region: The average number of CD8+/PD1+ cells within 10 µm of a PDL1+ cell	3.9e-10 (7.1e-18, 0.02)	0.017

From the Panel 2 sample, within the tumor stroma region: The average number of CD8+/PD1+ cells within 30 µm of a PanCK+/PDL1+	0.18 (0.04, 0.77)	0.021
From the Panel 2 sample, within the tumor stroma region: The median distance of a CD8+/PD1+ cell from the nearest CD8+/PDL1+ cell, within a 10 µm search radius	0.13 (0.02, 0.69)	0.016
From the Panel 2 sample, within the tumor stroma region: The average number of PD1+ cells within 10 µm of a PDL1+ cell	1.6e-6 (9e-11, 0.03)	0.007
From the Panel 2 sample, within the tumor stroma region: The average number of PD1+ cells within 30 µm of a PDL1+ cell	0.35 (0.15, 0.82)	0.016
From the Panel 2 sample, within the tumor stroma region: The median distance of a PDL1+ cell to the nearest PD1+ cell, within a 30 µm search radius	1.40 (1.10, 1.70)	0.015