

Supplementary Table 1. Comparison of anti-RBD IgG binding antibody and neutralizing antibody responses after the first and second doses of COVID-19 mRNA vaccines between healthy controls and patients with solid cancers receiving adjuvant or palliative chemotherapy

	Healthy controls	Cancer patients	$P^{*,\dagger}$	Adjuvant group	Palliative group	$P^{*,\ddagger}$
Before vaccination (baseline), n	24	45		23	22	
Anti-RBD IgG antibody, BAU/mL, median (IQR)	0.6 (0.4 – 1.0)	0.5 (0.2 – 1.1)	0.562	0.5 (0.2 – 1.1)	0.6 (0.2 – 1.1)	0.706
Neutralizing antibody, IU/mL, median (IQR)	22.8 (21.2 – 25.3)	15.8 (13.2 – 19.3)	< 0.001	15.7 (12.3 – 20.2)	16.4 (14.0 – 19.3)	0.742
2-4 weeks after first dose, n	24	38		20	18	
Anti-RBD IgG antibody						
Positive, n (%)	24 (100)	22 (57.9)	< 0.001	12 (60.0)	10 (55.6)	1.000
BAU/mL, median (IQR)	156.4 (60.5 – 230.0)	13.3 (2.6 – 78.2)	< 0.001	16.5 (2.6 – 76.6)	12.6 (2.6 – 84.0)	0.804
BNT162b2	50.8 (12.1 – 181.2)	5.2 (1.6 – 26.3)	0.007	4.2 (0.9 – 32.8)	11.8 (2.5 – 48.7)	0.489
mRNA-1273	183.5 (145.3 – 368.1)	59.9 (3.4 – 156.2)	0.002	75.8 (12.5 – 187.4)	46.7 (2.5 – 130.3)	0.362
P^{\S}	0.007	0.019		0.012	0.546	
Neutralizing antibody						
Positive, n (%)	23 (95.8)	18 (47.4)	< 0.001	11 (55.0)	7 (38.9)	0.352
IU/mL, median (IQR)	100.3 (50.4 – 127.9)	28.1 (21.8 – 47.2)	< 0.001	30.5 (18.6 – 43.1)	27.3 (21.8 – 60.1)	0.930
BNT162b2	51.2 (39.2 – 122.7)	23.9 (15.5 – 32.3)	0.002	17.2 (12.7 – 30.5)	24.2 (21.8 – 46.3)	0.258
mRNA-1273	112.0 (88.4 – 202.4)	40.0 (25.7 – 111.9)	0.004	40.8 (28.0 – 85.6)	28.0 (21.8 – 168.7)	0.676
P^{\S}	0.024	0.008		0.005	0.387	
2-4 weeks after second dose, n	24	39		20	19	
Anti-RBD IgG antibody						
Positive, N (%)	24 (100)	39 (100)		20 (100)	19 (100)	
BAU/mL, median (IQR)	2081.0 (853.2 – 3074.0)	1377.0 (397.7 – 2996.0)	0.298	1575.0 (447.2 – 4508.0)	1005.0 (391.1 – 2380.0)	0.384

BNT162b2	767.1 (545.7 – 2072.0)	555.0 (283.6 – 1400.5)	0.134	578.9 (352.3 – 1574.6)	476.4 (91.9 – 1304)	0.500
mRNA-1273	2565.1 (1976.4 – 3376.9)	2697.8 (1886.5 – 4849.6)	0.531	2969.9 (1250.1 – 5680.0)	2379.9 (2098.6 – 3030.6)	0.650
<i>P</i> [§]	0.005	< 0.001		0.027	0.008	
Neutralizing antibody						
Positive, n (%)	24 (100)	39 (100)		20 (100)	19 (100)	
IU/mL, median (IQR)	1244.6 (813.0 – 1858.1)	843.2 (285.6 – 1555.0)	0.091	721.7 (289.6 – 1507.0)	1118.0 (202.4 – 1891.0)	0.811
BNT162b2	1073.0 (583.7 – 1628.0)	351.6 (196.0 – 1073.0)	0.033	322.1 (268.4 – 770.3)	382.0 (75.3 – 1396.0)	0.859
mRNA-1273	1378.4 (1040.0 – 1946.0)	1460.2 (705.7 – 2070.0)	0.894	1365.7 (455.0 – 2047.0)	1891.2 (945.4 – 2142.0)	0.469
<i>P</i> [§]	0.306	0.002		0.040	0.031	

*Comparisons of categorical variables were performed using the Fisher exact test. The Mann-Whitney test was used for comparing continuous variables. A two-sided *P*-value < 0.05 was considered statistically significant; †control vs. cancer group; ‡adjuvant vs. palliative group. §Comparison of antibody levels between the BNT162b2 and mRNA-1273 vaccines was performed using the Mann-Whitney test. Abbreviations: BAU/mL, binding antibody unit per milliliter; IQR, interquartile range; IU/mL, international unit per milliliter; n, number; RBD-IgG, receptor-binding domain-specific immunoglobulin.