

Supplementary Table 1: Characteristics of the population

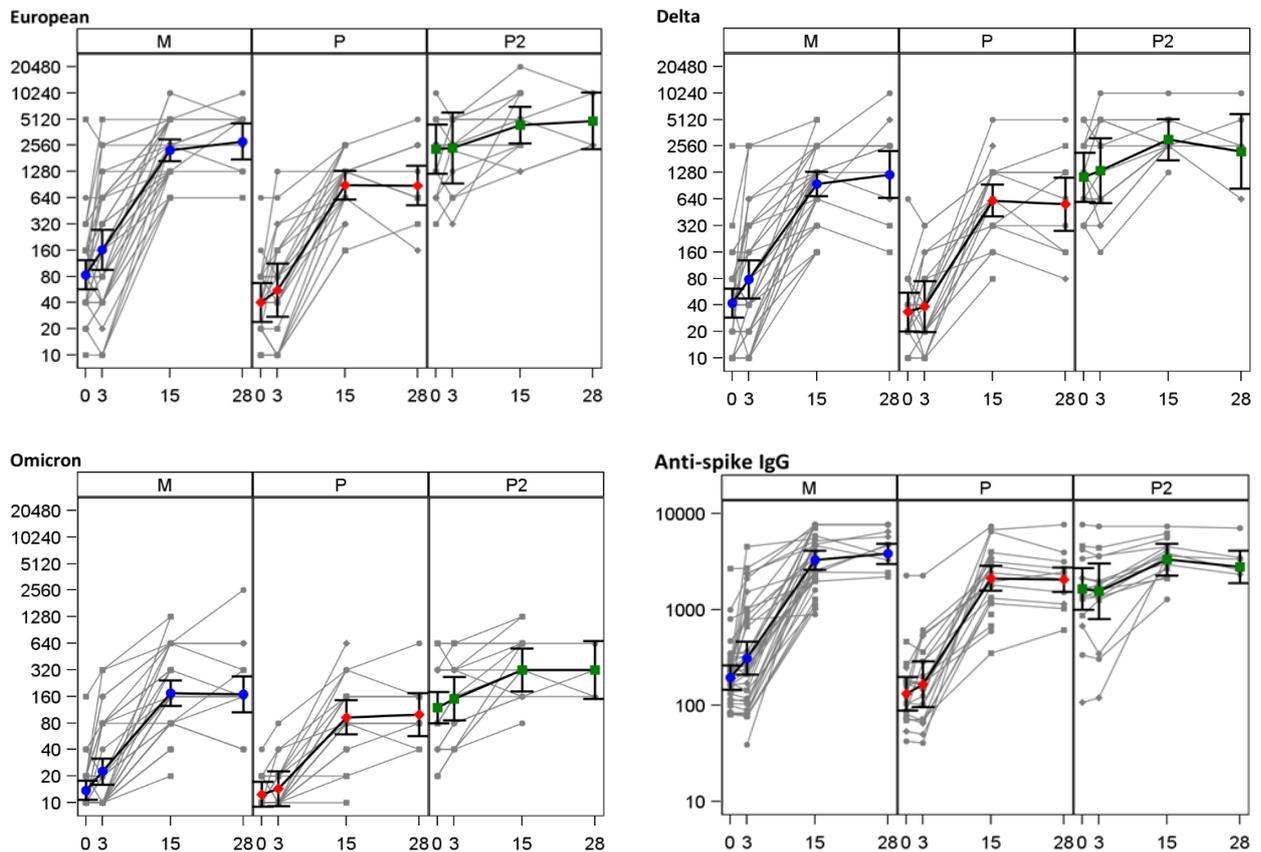
	SARS-CoV-2 naïve		p-value	SARS-CoV-2 infected before the primary vaccination
	CoviCompareM (M) mRNA-1273 N = 34	CoviCompareP (P) BNT162b2 N = 19		CoviCompareP (P2) BNT162b2 N = 12
Age (years)	71.5 [68.2, 76.0] (66 to 84)	72.0 [66.5, 75.5] (65 to 84)	0.56 ¹	70.0 [67.0, 75.0] (65 to 81)
Male sex	20 (59%)	8 (42%)	0.24 ²	8 (67%)
Body Mass Index (BMI)	25.3 [22.6, 27.6]	24.7 [22.3, 26.6]	0.48 ¹	24.0 [20.7, 25.0]
BMI > 30	5 (15%)	0 (0%)	0.15 ³	0 (0%)
Months between primary vaccination and boost	7.4 [7.0, 7.5]	6.8 [6.4, 7.0]	<0.001 ¹	7.8 [7.5, 7.9]
3 days after boost, <i>days</i>	4 (2 to 6)	3 (2 to 5)	0.12 ¹	3 (2 to 4)
15 days after boost, <i>days</i>	15 (12 to 17)	14 (13 to 20)	0.25 ¹	14 (14 to 17)
28 days after boost, n <i>days</i>	12 28 (26 to 29)	11 28 (25 to 28)	0.26 ¹	5 28 (27 to 28)

n (%); Median [IQR] (min to max)

¹Wilcoxon rank sum test ²Pearson's Chi-squared test ³Fisher's exact test

Supplementary Table 2: **Geometric means (MMRM model estimates)**

Individual profiles are connected with grey lines and model-based geometric means estimates with 95% confidence intervals are connected with black lines at Day 0=before boost, 3, 15, 28 days after boost



European strain (neutralization titer)

Timepoint	CoviCompare-M mRNA-1273 SARS-CoV-2 naïve (M) N=34	CoviCompare-P BNT162b2 SARS-CoV-2 naïve (P) N=19	CoviCompare-P BNT162b2 previously SARS CoV-2 infected (P2) N=12
Before boost (Day 0), n	33	18	12
Geometric mean	83.63	40.08	2317.65
95%CI	56.79, 123.17	23.99, 66.96	1212.41, 4430.42
Day 3, n	34	18	12
Geometric mean	162.30	55.66	2392.06
95%CI	95.68, 275.32	27.46, 112.81	937.77, 6101.66
Day 15, n	34	19	12
Geometric mean	2251.43	890.57	4375.14
95%CI	1692.60, 2994.74	608.61, 1303.14	2701.65, 7085.25
Day 28, n	12	11	5
Geometric mean	2828.78	883.94	4878.70
95%CI	1753.91, 4562.38	523.47, 1492.62	2302.26, 10338.41

Delta variant (neutralization titer)

Timepoint	CoviCompare-M mRNA-1273 SARS-CoV-2 naïve (M) N=34	CoviCompare-P BNT162b2 SARS-CoV-2 naïve (P) N=19	CoviCompare-P BNT162b2 previously SARS CoV-2 infected (P2) N=12
Before boost (Day 0), n	33	19	12
Geometric mean	42.06	33.31	1135.41
95%CI	28.68, 61.70	20.06, 55.32	598.24, 2154.94
Day 3, n	34	19	12
Geometric mean	78.52	38.55	1350.24
95%CI	47.59, 129.56	19.74, 75.27	580.60, 3140.14
Day 15, n	34	19	12
Geometric mean	944.41	616.76	3031.19
95%CI	688.45, 1295.52	404.55, 940.31	1777.21, 5169.96
Day 28, n	12	12	5
Geometric mean	1217.55	558.93	2228.93
95%CI	659.30, 2248.47	277.66, 1125.13	838.54, 5924.74

Omicron BA.1 variant (neutralization titer)

Timepoint	CoviCompare-M mRNA-1273 SARS-CoV-2 naïve (M) N=34	CoviCompare-P BNT162b2 SARS-CoV-2 naïve (P) N=19	CoviCompare-P BNT162b2 previously SARS CoV-2 infected (P2) N=12
Before boost (Day 0), n	33	19	12
Geometric mean	13.82	12.45	119.95
95%CI	10.80, 17.69	8.99, 17.24	79.40, 181.23
Day 3, n	34	19	12
Geometric mean	22.60	14.40	151.13
95%CI	16.10, 31.70	9.16, 22.64	85.38, 267.51
Day 15, n	34	19	12
Geometric mean	173.54	92.58	320.23
95%CI	124.35, 242.20	59.31, 144.51	182.53, 561.82
Day 28, n	12	12	5
Geometric mean	169.49	99.78	319.78
95%CI	105.79, 271.56	57.40, 173.44	149.93, 682.03

Anti-spike IgG (BAU/mL)

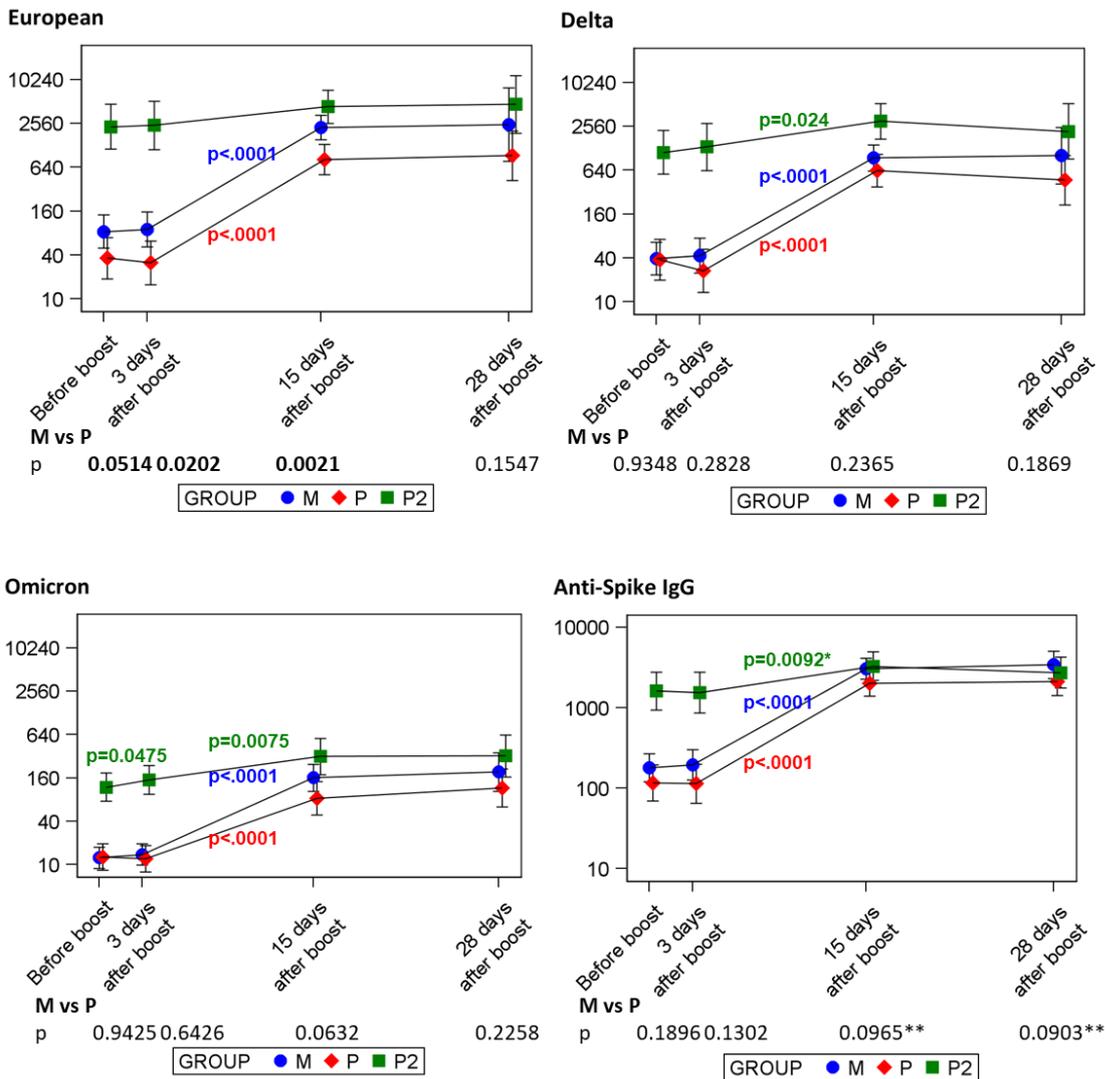
Timepoint	CoviCompare-M mRNA-1273 SARS-CoV-2 naïve (M) N=34	CoviCompare-P BNT162b2 SARS-CoV-2 naïve (P) N=19	CoviCompare-P BNT162b2 previously SARS CoV-2 infected (P2) N=12
Before boost (Day 0), n	33	18	12
Geometric mean	195.77	132.24	1637.59
95%CI	145.60, 263.21	88.46, 197.67	997.00, 2689.76
Day 3, n	34	18	12
Geometric mean, n	311.72	166.85	1553.70
95%CI	209.35, 464.13	96.75, 287.74	794.51, 3038.32
Day 15, n	34	19	12
Geometric mean	3272.47	2121.77	3319.86
95%CI	2604.99, 4110.96	1565.07, 2876.50	2258.85, 4879.25
Day 28, n	12	11	5
Geometric mean	3813.58	2057.77	2793.87
95%CI	3003.65, 4841.90	1532.71, 2762.69	1890.07, 4129.84

Supplementary Figure 1: **Geometric means and 95% Confidence Intervals (MMRM model estimates) for participants with 2-4 days post boost only (n=48)**

Neutralizing antibody titers for European strain, Delta, Omicron (BA.1) variants and anti-spike IgG (BAU/mL) in SARS-CoV-2 naïve mRNA-1273 recipients (M in blue), BNT162b2 recipients (P in red) and previously SARS-CoV-2 infected BNT162b2 recipients (P2 in green) before booster dose (day 0) and at 3, 15 and 28 days after boost.

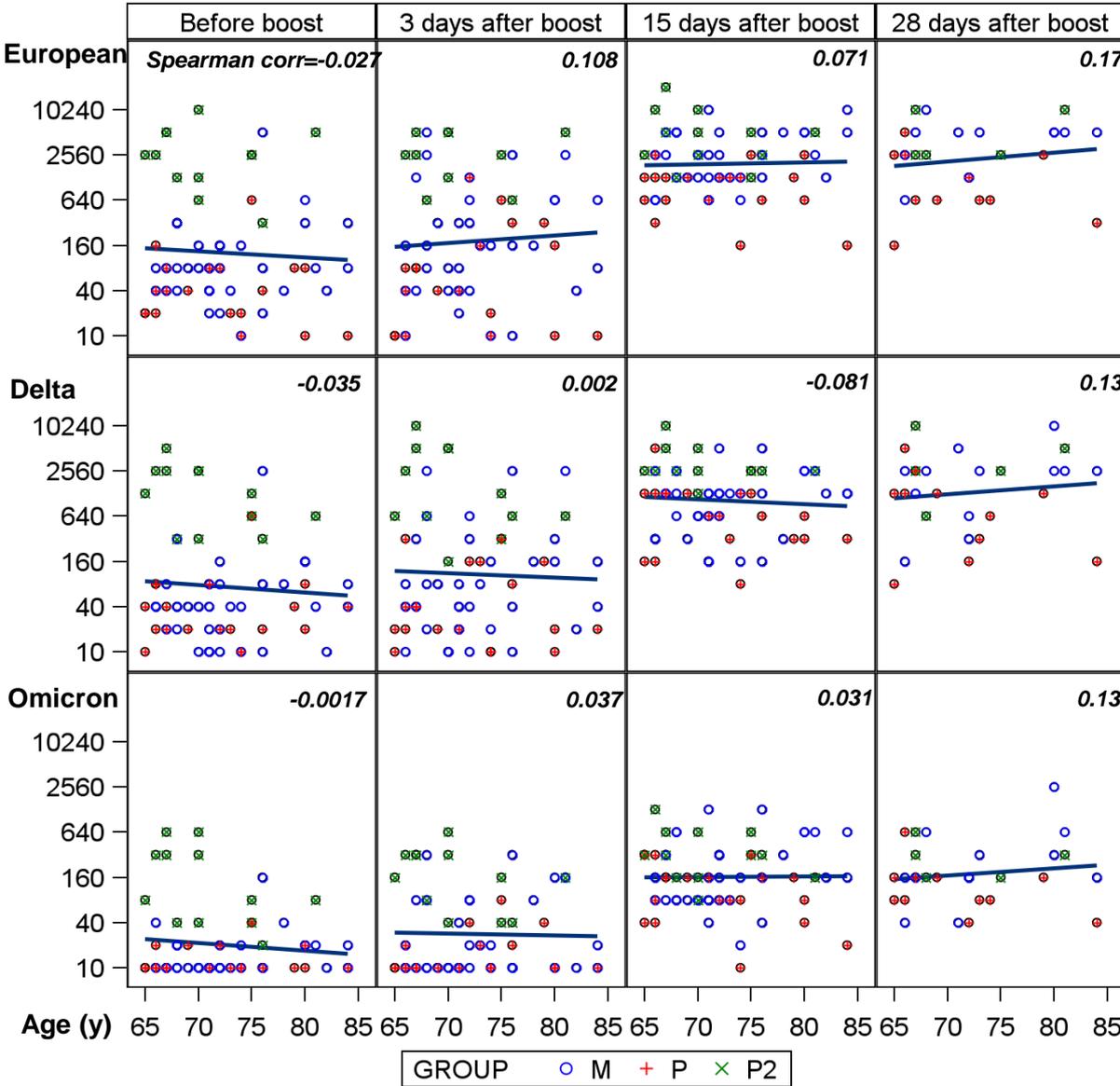
Timepoints comparisons: significant p-values within each group are shown (<.05)

M vs P comparisons: p-values at each timepoint below the figures



* no time effect slice (in P2)
 ** no group effect slice (at D15 and D28)

Supplementary Figure 2: **Neutralizing antibody titers for European strain, Delta, Omicron (BA.1) variants against the age at the first dose of vaccine (years) in SARS-CoV-2 naïve mRNA-1273 recipients (M in blue), BNT162b2 recipients (P in red) and previously SARS-CoV-2 infected BNT162b2 recipients (P2 in green) before booster dose and days 3, 15 and 28 after boost. Regression slopes and Spearman correlations are not statistically significant.**



Supplementary Figure 3: Neutralizing antibody titers for European strain, Delta, Omicron (BA.1) variants at D1 (1st dose) ; D29 (28 days after 1st dose and 2nd dose in SARS-CoV-2 naïve); D57 (28 days after 2nd dose). SARS-CoV-2 naïve mRNA-1273 recipients (M in blue), BNT162b2 recipients (P in red) and previously SARS-CoV-2 infected BNT162b2 recipients (P2 in green). Sample sizes (N) and medians are indicated at the bottom and p-values are for paired signed rank tests between D15 post-boost and D28 post primary-vaccination when n>5. Black triangles show administration of vaccine.

