

mRNA-1273 (µg)	Animal ID	Inflammation (H&E) ¹			IHC ⁵		
		Lc ²	Rmid ³	Rc ⁴	Lc	Rmid	Rc
100 x2	08N012	-	+/-	-	-	-	-
	DG3T	+	+/-	+/-	-	-	-
	15C228	-	-	-	-	-	-
	DGEH	+	+/-	+/-	-	-	-
30 x2	35987	+/-	+/-	+	-	-	-
	DGB3	-	+/-	++	-	-	-
	MB13	-	+/-	+/-	-	-	-
	DH49	-	-	+/-	-	-	-
30 x1	35975	-	+/-	+/-	-	+/-	-
	17C179	-	-	+/-	-	-	-
	DGI2	+/-	+/-	+/-	-	+/-	-
	DGJH	-	+/-	+++	-	-	-
Naïve	G25M	+	+	++	+	+/-	+/-
	15C024	+	++	++	-	+	+
	DFZi	+	++	++	-	+	+
	A6V055	++	++	++	++	+	+

Supplementary Table 1. Assessment of lung inflammation and viral antigen on day 8 following SARS-CoV-2 B.1.351 challenge in mRNA-1273-immunized NHP. Lung tissue was evaluated for the presence of inflammation by (H & E staining and evidence of virus infection by IHC for SARS-CoV-2 viral antigen.

¹ Inflammation scoring: - = minimal to absent, +/- = minimal to mild, + = mild to moderate, ++ = moderate to severe, +++ = severe

² Lc: left caudal lung lobe

³ Rmid: right middle lung lobe

⁴ Rc: right caudal lung lobe

⁵ Immunohistochemistry SARS-CoV-2 antigen (Ag): - = no detection of virus Ag, +/- = rare/occasional Ag+ foci, + = multiple Ag+ foci

Group	Animal ID	WA-1 S-specific IgG ¹ (IU/mL) ²	WA-1 RBD-specific IgG (IU/mL)
100 µg mRNA-1273 x2	08N012	1002.4	2069.5
	1F-8	734.0	1255.8
	DG3T	1161.7	2329.0
	15C228	1254.9	1969.4
	DG94	1203.4	2160.1
	DGMZ	719.7	1268.8
	DGEH	1285.4	3181.5
	DGBAA	1228.0	2206.4
	GMT	1049.0	1972.7
30 µg mRNA-1273 x2	35987	76.6	143.6
	HNM	781.5	1318.5
	DGB3	491.6	879.4
	MI03	2392.3	4460.5
	DH26	777.4	1454.7
	MB13	434.5	621.4
	DH49	542.6	1062.8
	36845	279.7	460.8
	GMT	495.1	870.2
30 µg mRNA-1273 x1	35975	75.4	110.2
	HZF	284.7	451.9
	LV41	97.8	170.9
	17C179	10.1	18.7
	DGF1	21.1	45.5
	DGW2	195.3	283.2
	DGI2	28.3	42.3
	DGJH	54.1	74.0
	GMT	58.3	94.6
Naïve	G25M	1.2	5.9
	07N001	0.3 ³	1.6 ⁴
	15C184	1.4	10.1
	15C024	0.3	1.6
	DGEI	0.3	1.6
	A12V163	0.3	1.6
	DFZi	0.3	1.6
	A6V055	36.1	1.6
	GMT	0.8	2.4

Supplementary Table 2. SARS-CoV-2 WA-1 S- and RBD-specific antibody responses in international units (IU).

¹Sera were collected at week 12 and assessed for SARS-CoV-2 WA-1 S- and RBD-specific IgG by 4-plex MULTI-ARRAY ELISA.

²IgG quantities were extrapolated as IU/mL using WHO standards.

³S-specific IgG lower limit of detection = 0.3076 IU/mL

⁴RBD-specific IgG lower limit of detection = 1.5936 IU/mL.

A

Variant	MUTLI-ARRAY ELISA
WA-1	<i>No mutations</i>
D614G	<i>N/A¹</i>
B.1.1.7	Δ69-70, Δ144, 501Y, 570D, 614G, 681H, 716I, 982A, 1118H
P.1	18F, 20N, 26S, 138Y, 190S, 417T, 484K, 501Y, 614G, 655Y, 1027I, 1176F
B.1.351	18F, 80A, 215G, Δ242-244, 246I, 417N, 484K, 501Y, 614G, 701V

B

Variant	Pseudovirus	
	Lentiviral	VSV
WA-1	N/A	<i>N/A</i>
D614G	614G	614G
B.1.1.7	Δ69-70, Δ144, 501Y, 570D, 614G, 681H, 716I, 982A, 1118H	<i>N/A</i>
P.1	18F, 20N, 26S, 138Y, 190S, 417T, 484K, 501Y, 614G, 655Y, 1027I, 1176F	<i>N/A</i>
B.1.351	18F, 80A, 215G, Δ242-244, 246I, 417N, 484K, 501Y, 614G, 701V	18F, 80A, 215G, Δ242-244, 246I, 417N, 484K, 501Y, 614G, 701V

C

Variant	Live Virus
WA-1	<i>N/A</i>
D614G	614G
B.1.1.7	<i>N/A</i>
P.1	<i>N/A</i>
B.1.351	18F, 80A, 215G, Δ242-244, 417N, 484K, 501Y, 614G, 701V

Supplementary Table 3. Spike mutations included in MULTI-ARRAY ELISA (A), pseudovirus (B) and live virus (C) assay reagents as compared to Wuhan-1 strain (Genbank #: MN908947.3).

¹N/A: not applicable