Supplementary Appendix 1: Conversion of relative ratios to the World Health Organization International Standard units (BAU/mL) for plasma or serum for anti-nucleocapsid, anti-RBD, and anti-spike

Anti-nucleocapsid*					
Dilution		1		0.00625	
Relative Ratio (RR)	$\log_2(RR)$	$\log_2(BAU/mL)$	BAU/mL	$\log_2(BAU/mL)$	BAU/mL
2	1.0	1.06	2.08	8.38	333.98
1.13	0.17	-0.09	0.94	7.23	149.96
1	0.0	-0.34	0.79	6.98	126.34
0.5	-1.0	-1.74	0.30	5.58	47.79
0.396	-1.3	-2.21	0.22	5.11	34.46
0.25	-2.0	-3.15	0.11	4.18	18.08
0.125	-3.0	-4.55	0.04	2.77	6.84
0.0625	-4.0	-5.95	0.02	1.37	2.59
0.03125	-5.0	-7.35	0.01	-0.03	0.98
* Formula: $\log_2(BAU/mL$ @ sample dilution d$) = (\log_2(RR,2) - 0.243)/\ 0.713 + \log_2(1/d, 2)$.					
Anti-RBD†					
Dilution		1		0.00625	
Relative Ratio (RR)	$\log_2(RR)$	$\log_2(BAU/mL)$	BAU/mL	$\log_2(BAU/mL)$	BAU/mL
1.25	0.32	1.22	2.33	8.54	372.52
1	0.0	0.80	1.74	8.12	278.37
0.5	-1.0	-0.51	0.70	6.82	112.63
0.25	-2.0	-1.81	0.28	5.51	45.57
0.186	-2.4	-2.37	0.19	4.95	30.97
0.125	-3.0	-3.12	0.12	4.20	18.44
0.0625	-4.0	-4.42	0.05	2.90	7.46
0.03125	-5.0	-5.73	0.02	1.59	3.02
0.01563	-6.0	-7.03	0.01	0.29	1.22
†Formula: $\log_2(BAU/mL$ @ sample dilution d$) = (\log(RR,2) + 0.612)/\ 0.766 + \log(1/d, 2)$.					
Anti-spike‡					
Dilution		1		0.00625	
Relative Ratio (RR)	$\log_2(RR)$	$\log_2(BAU/mL)$	BAU/mL	$\log_2(BAU/mL)$	BAU/mL
1.38	0.46	-0.18	0.88	7.14	141.46
1	0.0	-0.77	0.59	6.55	93.80
0.5	-1.0	-2.05	0.24	5.28	38.75
0.25	-2.0	-3.32	0.10	4.00	16.01
0.19	-2.4	-3.83	0.07	3.50	11.28
0.125	-3.0	-4.60	0.04	2.72	6.61
0.0625	-4.0	-5.87	0.02	1.45	2.73
0.03125	-5.0	-7.15	0.01	0.17	1.13
0.01563	-6.0	-8.42	0.00	-1.10	0.47
‡Formula: $\log_2(BAU/mL$ @ sample dilution d$) = (\log(RR,2) - 0.604)/0.784 + \log(1/d, 2)$.					