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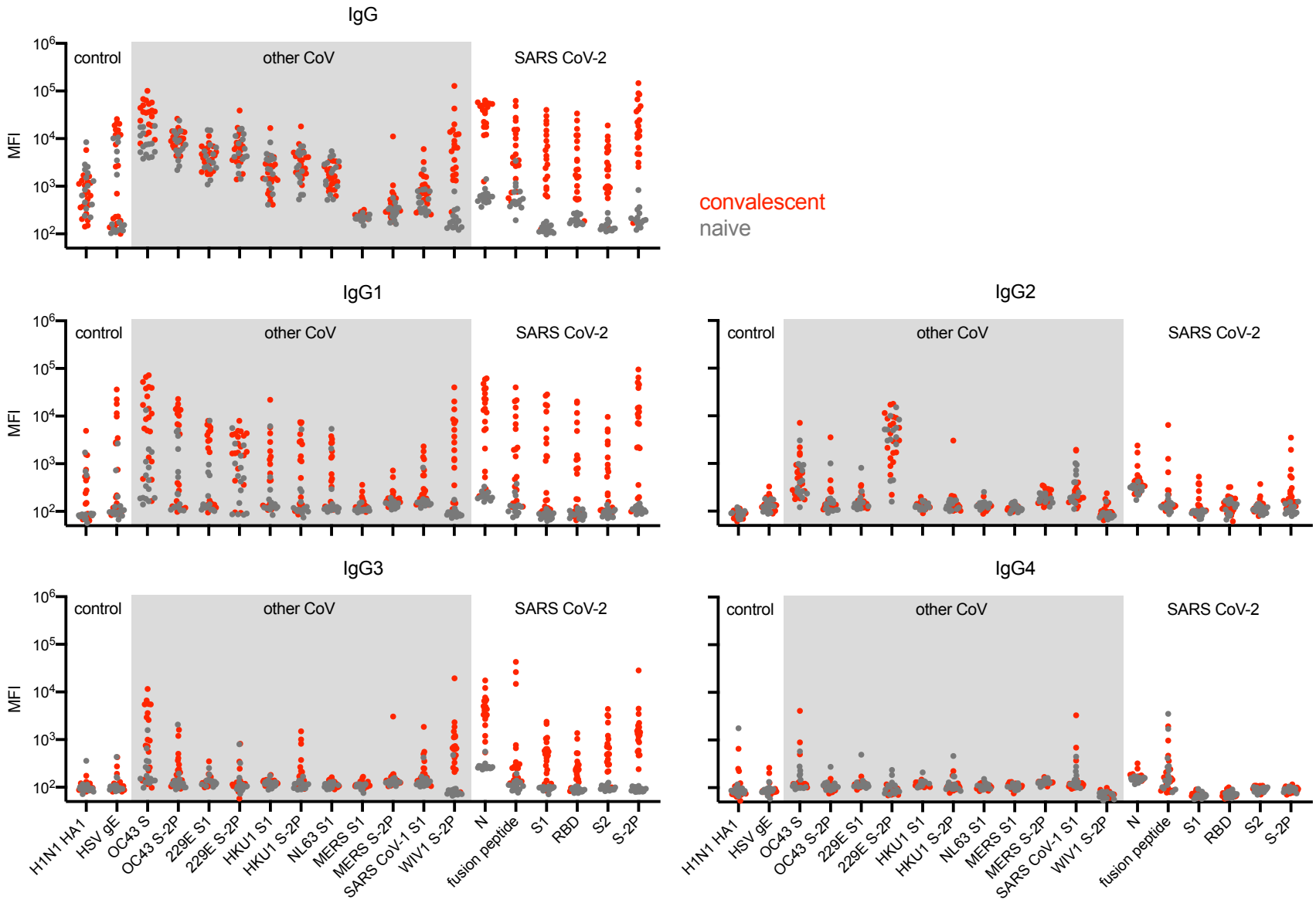
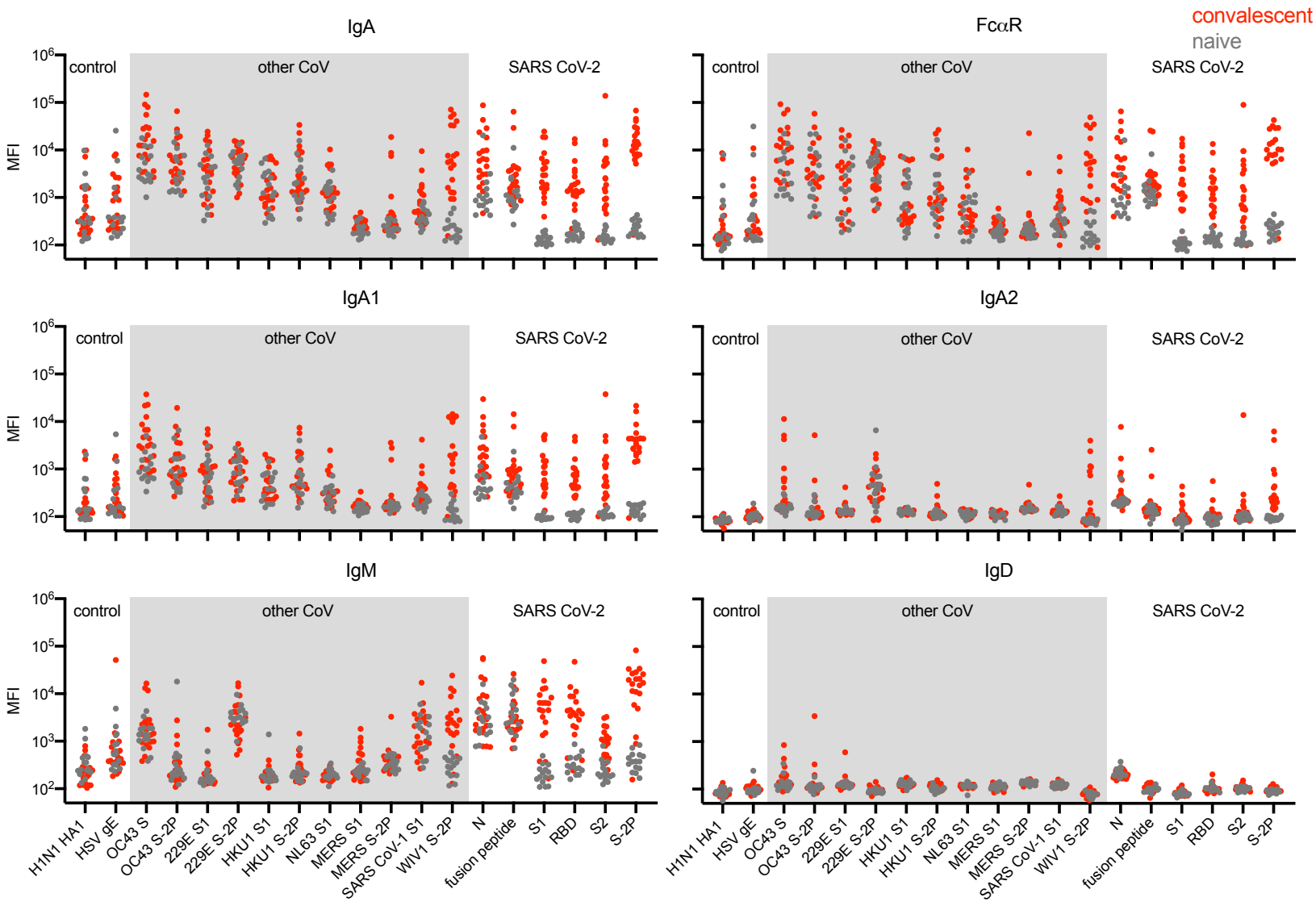
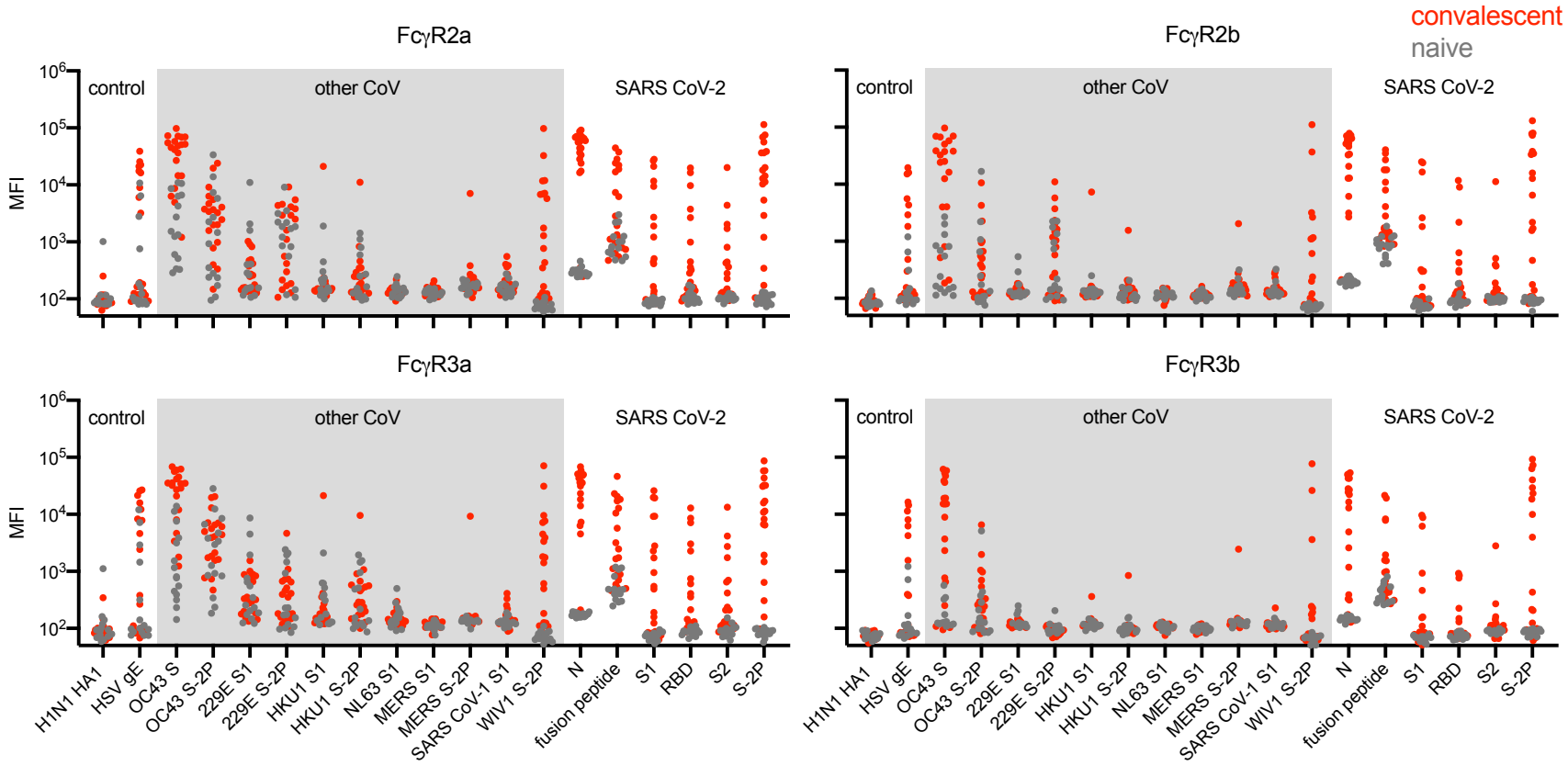


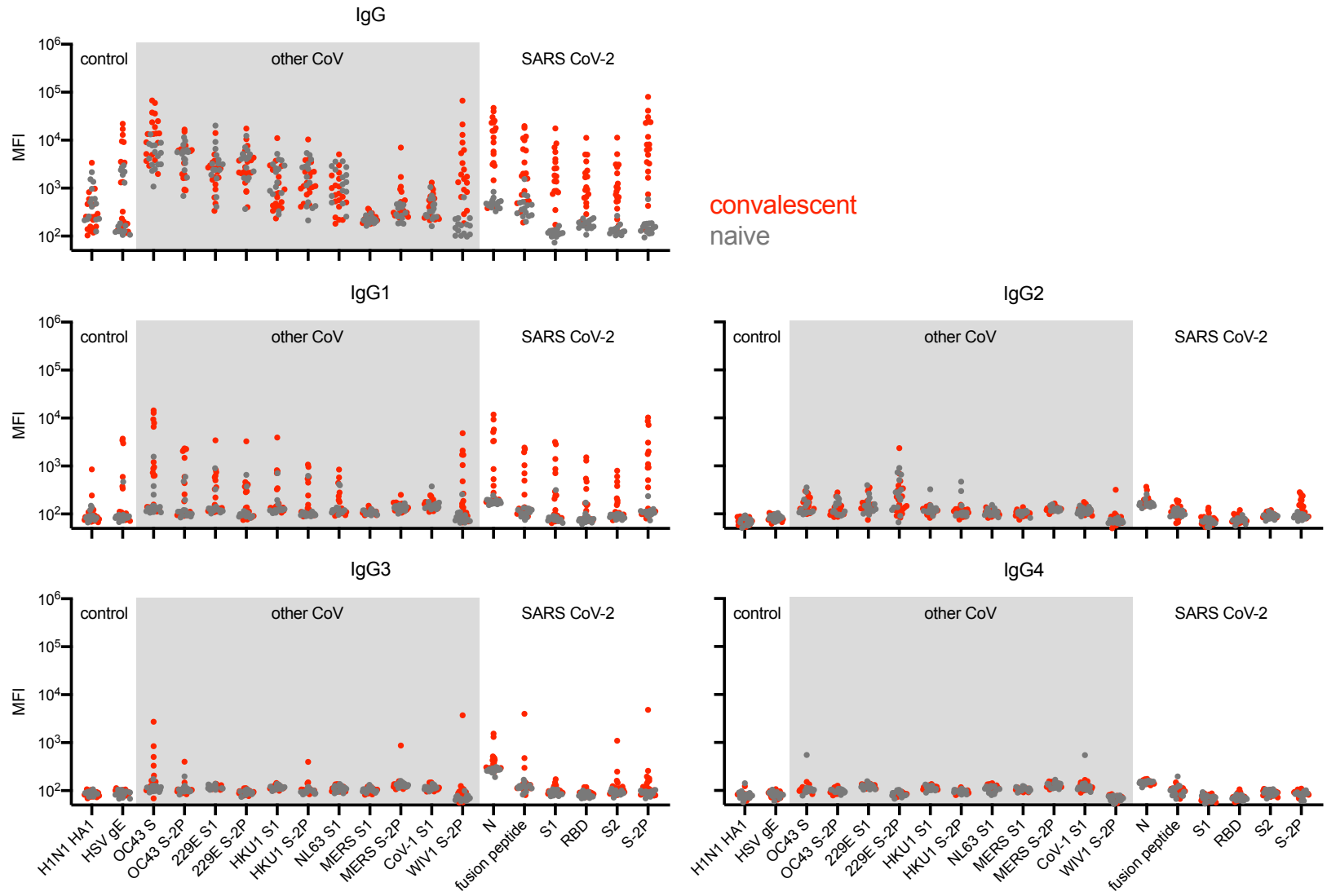
Supplementary Figure 1. Serum IgG isotype and subclass responses across CoV and control antigen types.



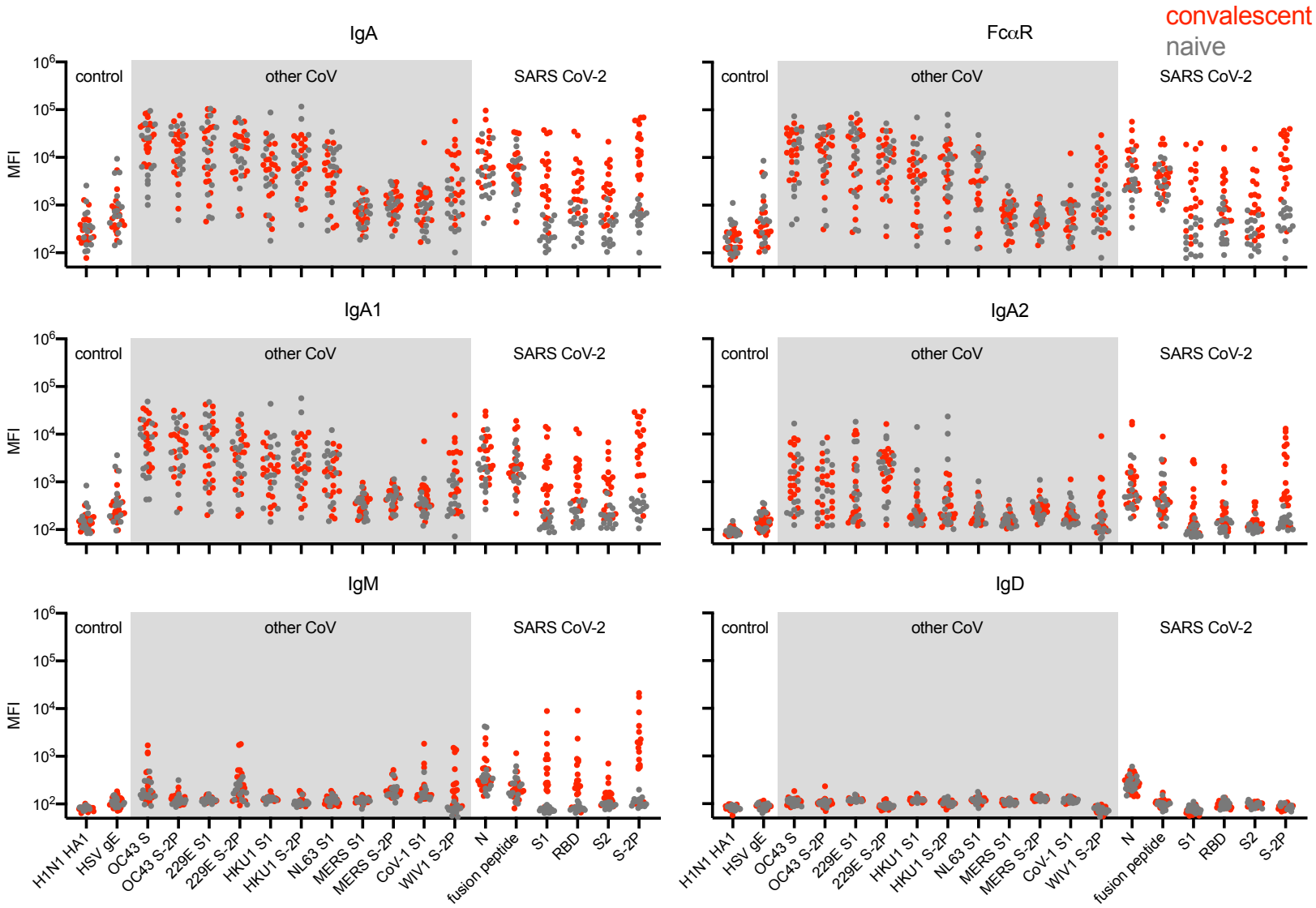
Supplementary Figure 2. Serum IgA, D, and M isotype and subclass responses across CoV and control antigen types.



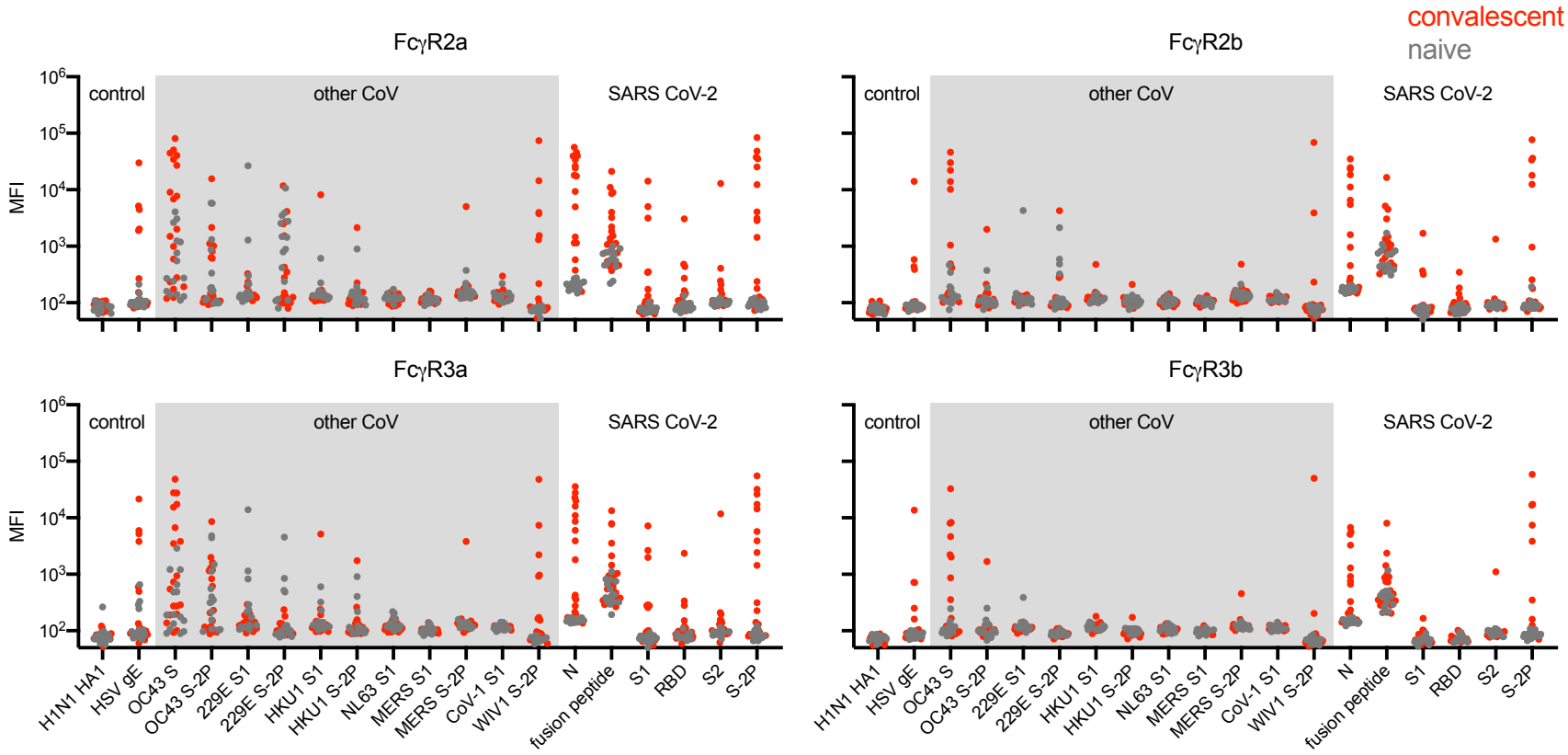
Supplementary Figure 3. Serum FcγR binding responses across antibodies specific to CoV and control antigen types.



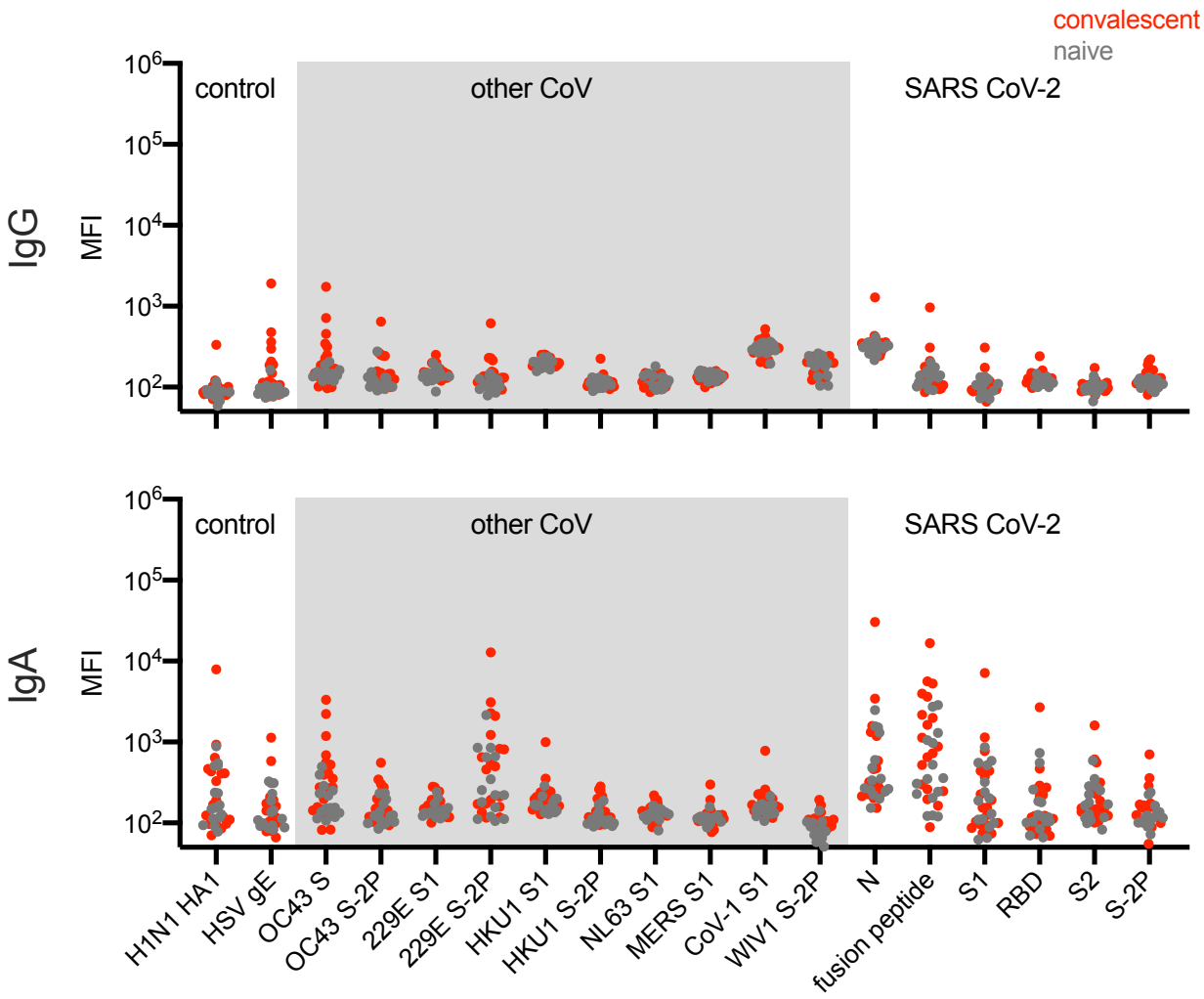
Supplementary Figure 4. Nasal IgG isotype and subclass responses across CoV and control antigen types.



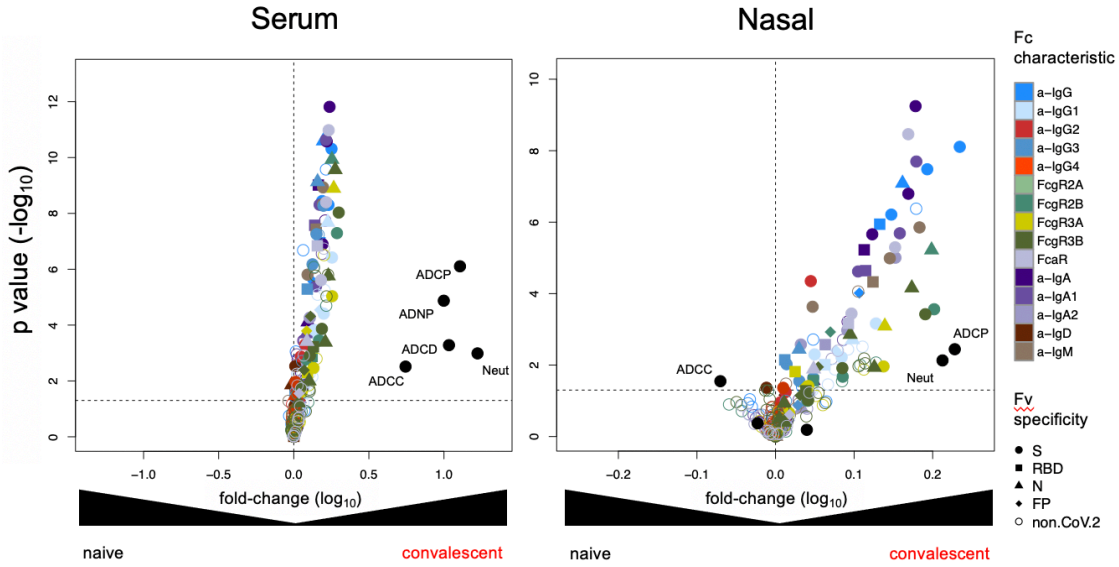
Supplementary Figure 5. Nasal IgA, D, and M isotype and subclass responses across CoV and control antigen types.



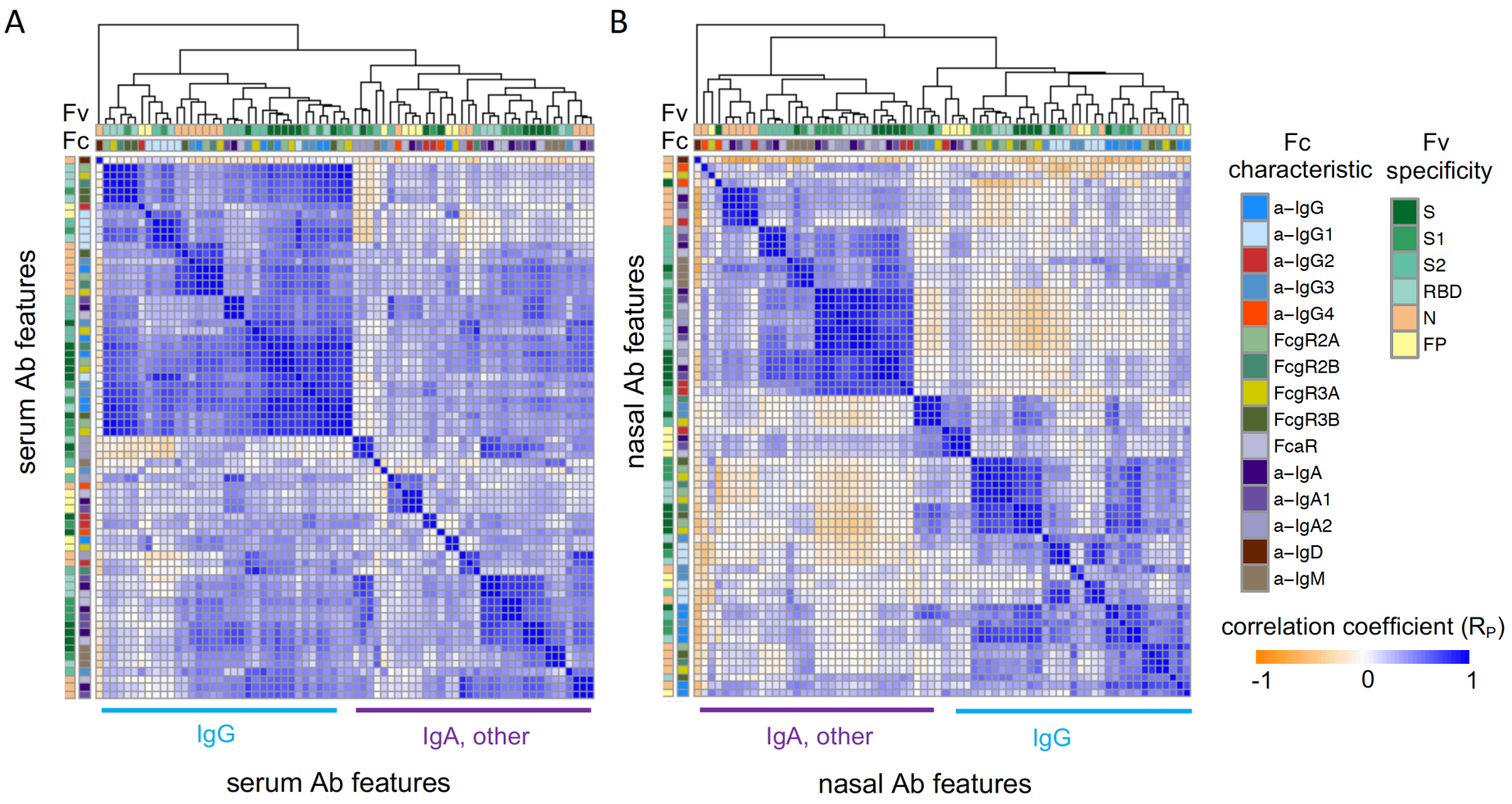
Supplementary Figure 6. Nasal FcγR binding responses across antibodies specific to CoV and control antigen types.



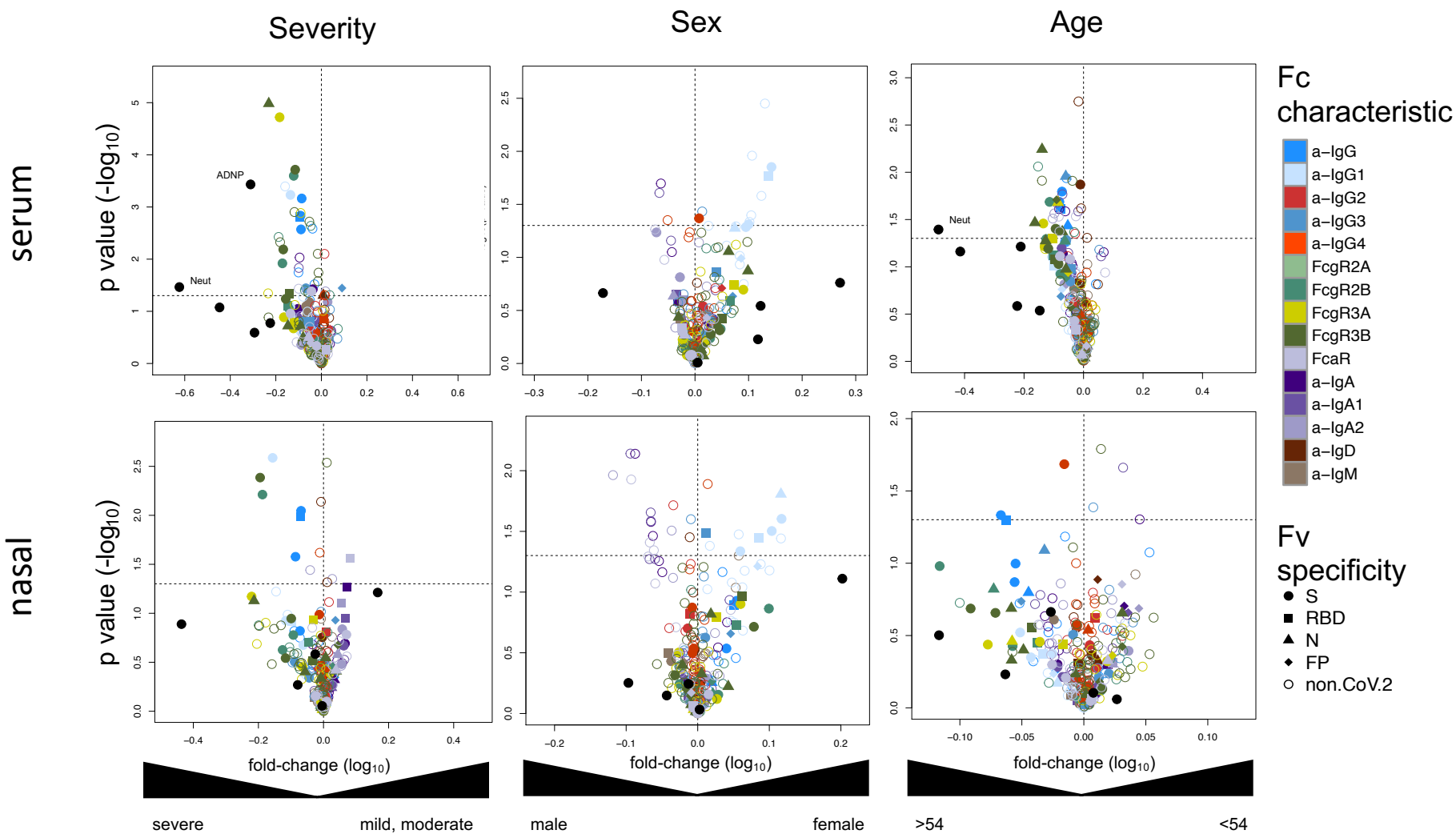
Supplementary Figure 7. Stool IgG and IgA responses across CoV and control antigen types.



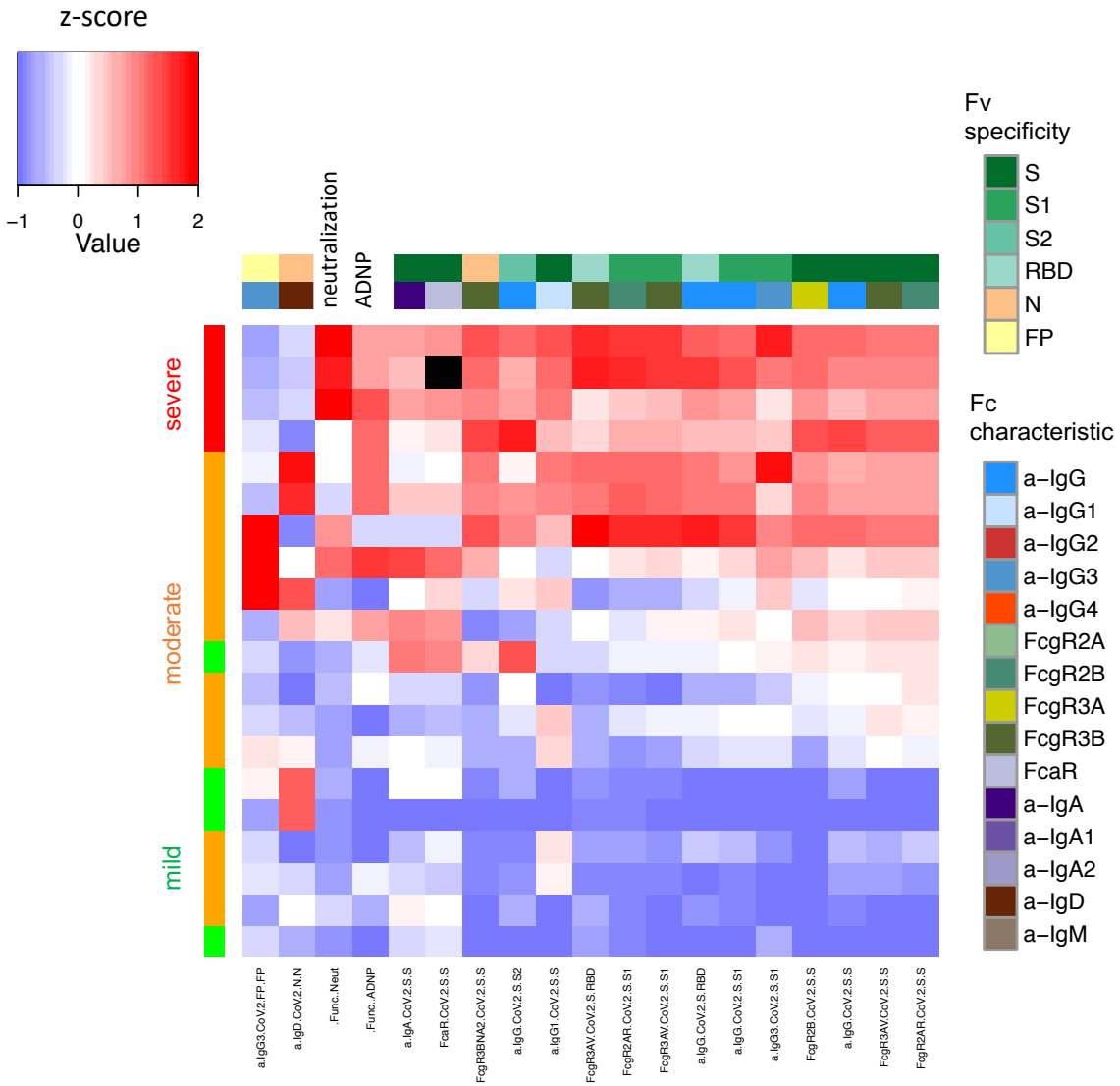
Supplementary Figure 8. Differences in Ab responses observed between naïve and convalescent donors. Volcano plots depicting fold-change and unadjusted statistical significance (unpaired two-tailed t test with Welch's correction) of biophysical and functional response features in serum (left) and nasal wash (right) samples by infection status. Functional assay data is labeled by name and log-transformed Fc array data is depicted with antigen specificity indicated by shape and Fc characteristic indicated by color. Dotted horizontal line indicates p = 0.05.



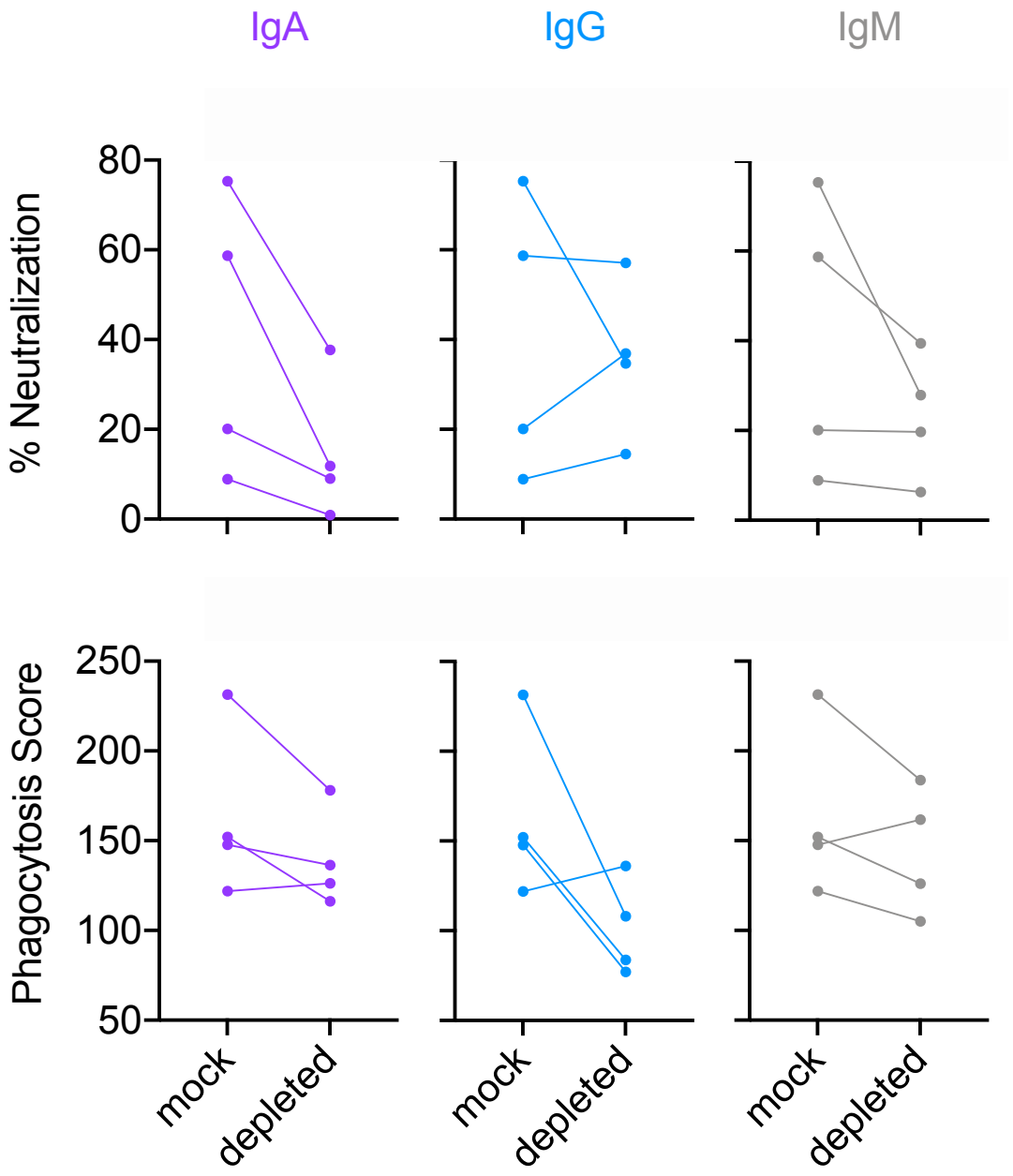
Supplementary Figure 9. Correlations between Ab features within serum and nasal wash samples. A-B. Correlation matrices of relationships between Ab response features measured in serum (**A**) and nasal wash (**B**) samples from convalescent donors. Antigen specificity (Fv) and Fc characteristics (Fc) are indicated in color bars. Filtered CoV-2-specific Ab features are hierarchically clustered. Pearson correlation coefficients (RP) are shown. Dominant isotype(s) of main branches of dendrograms are indicated.



Supplementary Figure 10. Differences in Ab responses among convalescent donors by subject characteristics. Volcano plots depicting fold-change and unadjusted statistical significance (unpaired two-tailed t test with Welch's correction) of biophysical and functional response features in serum (top) and nasal wash (bottom) samples by disease severity (left), sex (center), and age (right). Functional assay data is labeled by a black circle with the assay name added if $p < 0.05$, and Fc array data is depicted with antigen specificity indicated by shape and Fc characteristic indicated by color. Dotted horizontal line indicates $p = 0.05$.



Supplementary Figure 11. **Heatmap of serum Ab features that differ between donors who experienced severe versus non-severe disease**. Features and subjects are hierarchically-clustered with Fv specificity (viral antigen) and Fc characteristic (detection) indicated in x-axis color bar. Subjects are stratified by infection or disease severity status. Responses are centered and scaled per feature and the scale range truncated at +2/-1 SD. Black cell indicates missing data.



Supplementary Figure 12. **Impact of isotype depletion on nasal wash neutralization and phagocytosis**. Neutralization (top) and phagocytosis (bottom) activity observed in select nasal wash samples with (depleted) or without (mock) IgA (left), IgG (center), or IgM (right) depletion.

Supplementary Table 1. Demographic data for convalescent and naive donors

Characteristic	Convalescent			Naïve
	Severe	Moderate	Mild	
	n=4	n=12	n=4	n=15
Median age (IQR), years	66.5 (49-77)	54 (18-74)	26 (26-59)	34 (28-52)
Sex				
Female	2 (50%)	7 (58.33%)	1 (25%)	8 (53.3%)
Male	2 (50%)	5 (41.66%)	3 (75%)	7 (46.7%)
Median days since symptom onset (IQR)	40.5 (29-56)	38 (30-67)	31 (19-42)	Not applicable

Supplementary Table 2. Antigen and Fc Detection Reagents

Antigen	Source	Fc Detection	Source
H1N1 HA1	Immune Technology IT-003-00110p	a- IgG	Southern Biotech 1030-09
HSV gE	Immune Technology IT-005-005p	a-IgG1	Southern Biotech 9054-09
HCoV OC43 S	Sino Biological 40607-V08B	a-IgG2	Southern Biotech 9070-09
OC43 S-2P	Expressed in HEK 293F	a-IgG3	Southern Biotech 9210-09
229E S1	Sino Biological 40605-V08H	a-IgG4	Southern Biotech 9200-09
229E S-2P	Expressed in Expi 293	a-IgA	Southern Biotech 2050-09
HKU1 S1	Sino Biological 40606-V08H	a-IgA1	Southern Biotech 9130-09
HKU S-2P	Expressed in Expi 293	a-IgA2	Southern Biotech 9140-09
NL63 S1	Sino Biological 40604-V08H	a-IgM	Southern Biotech 9020-09
MERS S1	Sino Biological 40069-V08H-50	a-IgD	Southern Biotech 9030-09
MERS S-2P	Expressed in Expi 293	FcαR	Duke Protein Production Facility
SARS CoV-1 S1	Sino Biological 40150-V08B1	FcγR2a	Boesch, et. al, 2014[1]
WIV1 S-2P	Expressed in Expi 293	FcγR2b	Boesch, et. al, 2014[1]
SARS CoV-2 N	Immune Technology IT-002-033Ep	FcγR3a	Boesch, et. al, 2014[1]
SARS CoV-2 fusion peptide	New England Peptide	FcγR3b	Boesch, et. al, 2014[1]
SARS CoV-2 S1 (for Fc Array)	ACROBiosystems S1N-C52H3-100ug		
SARS CoV-2 S1 (for ADCD)	Sino Biological 40150-V08B1-20		
SARS CoV-2 RBD	BEI Resources NR-52366		
SARS CoV-2 S2	Immune Technology IT-002-034p		
SARS CoV-2 S-2P	Expressed in Expi 293		

[1]Boesch AW, Brown EP, Cheng HD, Ofori MO, Normandin E, Nigrovic PA, et al. Highly parallel characterization of IgG Fc binding interactions. MAbs. 2014;6(4):915-27.

Supplementary Table 3. CoV Antigen Sequences

Antigen	Sequence (5' → 3')
SARS-CoV-2 (S-2P)	ATGTTCGTGTTCCTGGTGCTCCTGCCTCTGGTGAGCAGCCAGTGCGTGAACCTG ACCACCCGAACCCAGCTCCCACCAGCCTACACCAACAGCTTTACACGGGGCGTG TACTACCCTGACAAGGTGTTCAGATCTAGCGTCCTGCACAGCACTCAGGACCTCT TCCTGCCGTTCTTCAGCAACGTGACATGGTTCCACGCCATCCACGTGAGCGGCA CAAACGGAACCAAGCGGTTTGATAACCCCGTCCTGCCATTCAATGATGGAGTTTA CTTCGCCAGTACCGAGAAGAGTAACATCATCCGGGGCTGGATCTTCGGCACCAC CCTGGATAGCAAAACACAGAGCCTCCTGATCGTGAACAATGCCACGAACGTCGT GATCAAGGTGTGCGAGTTCCAGTTTTGCAATGATCCTTTCCTGGGTGTGTACTAC CACAAGAACAACAAGAGCTGGATGGAAAGCGAGTTCAGAGTCTACAGCAGCGCC AACAACTGCACATTCGAGTACGTCTCTCAGCCTTTTCTGATGGACCTTGAGGGGA AACAAGGCAACTTCAAGAACCTGAGAGAATTCGTGTTCAAGAACATCGACGGCTA CTTCAAAATCTACTCCAAGCACACACCCATCAACCTGGTCCGGGACCTCCCTCAG GGCTTCAGCGCCCTGGAACCCCTGGTCGACCTGCCCATAGGCATCAACATAACG CGGTTCCAAACCCTGCTGGCCCTGCATAGATCCTACCTGACTCCTGGCGACAGC AGCAGCGGATGGACCGCCGGAGCTGCAGCCTACTATGTGGGCTACCTGCAACC TAGAACCTTCCTGCTGAAGTACAACGAGAACGGCACAATCACAGACGCCGTCGA CTGCGCCCTGGACCCTCTCTCTGAGACAAAGTGCACCCTGAAGTCCTTCACCGT GGAAAAGGGCATCTACCAGACCAGCAACTTCCGGGTGCAGCCTACAGAGAGCAT CGTGCGATTTCCAAACATTACCAACCTCTGCCCCTTCGGCGAGGTGTTTAACGCC ACAAGATTTGCCTCCGTTTACGCCTGGAATAGAAAGAGAATCAGCAATTGTGTGG CCGACTACTCCGTGCTGTATAACAGCGCCTCTTTCAGCACCTTCAAGTGCTACGG CGTTTCCCCAACAAAGCTGAATGACCTGTGCTTCACCAACGTGTACGCCGACTCC TTCGTAATTAGAGGCGATGAGGTGCGGCAGATCGCACCAGGCCAGACCGGTAA GATCGCTGACTACAACTATAAGCTGCCTGATGATTTTACAGGCTGCGTGATCGCC TGGAACTCTAACAACCTGGATAGCAAGGTGGGCGGCAACTACAACTACCTGTAC CGGCTGTTTCGCAAGTCTAACCTGAAACCTTTCGAGAGAGACATCTCCACAGAGA TCTACCAGGCCGGTTCTACACCTTGTAACGGGGTGGAAGGCTTCAACTGTTACTT CCCTCTGCAAAGCTACGGCTTCCAGCCTACCAATGGAGTCGGCTACCAGCCATA CCGGGTGGTCGTGCTGTCCTTCGAGTTACTCCACGCCCCCGCCACCGTCTGCG GTCCTAAGAAGTCCACCAATCTGGTTAAGAACAAATGCGTGAACTTCAACTTCAA CGGCCTGACCGGGACCGGCGTGCTGACCGAAAGCAACAAAAAGTTCCTCCCCTT CCAGCAGTTCGGCCGTGATATCGCTGACACCACAGATGCCGTCAGAGATCCACA GACCCTGGAAATCCTGGATATTACACCCTGCTCCTTCGGAGGAGTTTCTGTGATC ACCCCCGGGACCAATACCAGCAACCAGGTGGCTGTGCTGTACCAAGATGTTAAC TGCACCGAGGTTCCTGTGGCCATCCACGCCGATCAGCTGACACCTACTTGGAGA GTGTACTCCACTGGCTCCAATGTGTTCCAGACCAGGGCCGGATGTCTGATCGGC GCCGAGCACGTGAATAACAGTTACGAGTGCGACATCCCTATCGGCGCCGGCATC TGTGCCAGCTACCAGACCCAGACAAACAGCCCTGGGTCTGCTTCCTCTGTAGCT AGCCAGAGCATCATCGCCTACACCATGAGCCTGGGCGCAGAGAACAGCGTGGC CTATTCCAACAACTCTATCGCCATTCCCACCAACTTTACAATTAGCGTCACAACAG AGATCCTGCCCGTGAGCATGACCAAGACCAGCGTGGACTGTACAATGTACATCT GTGGCGACAGCACTGAATGCAGCAACCTGCTGCTGCAATACGGCTCCTTTTGCA CCCAACTGAACCGGGCGCTGACCGGAATCGCCGTGGAACAGGACAAAAATACC CAGGAGGTGTTCGCCCAAGTGAAGCAGATCTACAAGACCCCACCTATCAAGGAC TTCGGCGGCTTTAACTTTAGCCAGATTCTCCCTGATCCTTCTAAGCCTAGCAAGC GGAGCTTTATCGAGGATCTGCTGTTCAACAAGGTCACCCTGGCCGATGCCGGCT TTATCAAACAGTATGGCGATTGCCTGGGCGACATAGCCGCCAGAGATCTGATCT GCGCCCAGAAATTCAACGGCCTGACAGTTCTCCCACCTCTGCTGACCGACGAGA TGATCGCTCAGTACACCTCTGCCCTGCTGGCTGGCACCATCACATCTGGGTGGA CATTTGGCGCCGGCGCCGCCCTGCAGATCCCCTTTGCCATGCAGATGGCCTATA GATTCAACGGAATCGGCGTGACCCAGAACGTGCTGTATGAAAACCAGAAGCTGA TCGCTAACCAGTTCAATTCTGCCATCGGCAAGATCCAGGACTCCCTCTCCTCTAC

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SARS-CoV-2 RBD-Fc	ATGCGGCCTACTTGGGCCTGGTGGCTGTTCCTGGTGCTGCTGCTAGCTCTGTGG GCACCCGCTAGAGGGCGGGTGCAGCCTACAGAGAGCATCGTGCGATTTCCAAA CATTACCAACCTCTGCCCCTTCGGCGAGGTGTTTAACGCCACAAGATTTGCCTCC GTTTACGCCTGGAATAGAAAGAGAATCAGCAATTGTGTGGCCGACTACTCCGTG CTGTATAACAGCGCCTCTTTCAGCACCTTCAAGTGCTACGGCGTTTCCCCAACAA AGCTGAATGACCTGTGCTTCACCAACGTGTACGCCGACTCCTTCGTAATTAGAGG CGATGAGGTGCGGCAGATCGCACCAGGCCAGACCGGTAAGATCGCTGACTACA ACTATAAGCTGCCTGATGATTTTACAGGCTGCGTGATCGCCTGGAACTCTAACAA CCTGGATAGCAAGGTGGGCGGCAACTACAACTACCTGTACCGGCTGTTTCGCAA GTCTAACCTGAAACCTTTCGAGAGAGACATCTCCACAGAGATCTACCAGGCCGG TTCTACACCTTGTAACGGGGTGGAAGGCTTCAACTGTTACTTCCCTCTGCAAAGC TACGGCTTCCAGCCTACCAATGGAGTCGGCTACCAGCCATACCGGGTGGTCGTG CTGTCCTTCGAGTTACTCCACGCCCCCGCCACCGTCTGCGGTCCTAAGAAGTCC ACCAATCTGGTTAAGAACAAATGCGTGAACTTCAACTTCAACGGCCTGACCGGGA CCGGCGTGCTGACCGAAAGCAACAAAAAGTTCCTCCCCTTCCAGCAGTTCGGCC GTGATATCGCTGACACCACAGATGCCGTCAGAGATCCACAGACCCTGGAAATCC TGGATATTACACCCTGCTCCGGATCCCTGGAGGTGCTGTTCCAGGGCCCAACTC ACACATCCCCACCGAGCCCAGCACCTGAACTCCTGGGGGGACCGTCAGTCTTCC TCTTCCCCCCAAAACCCAAGGACACCCTCATGATCTCCCGGACCCCTGAGGTCA CATGCGTGGTGGTGGACGTGAGCCACGAAGACCCTGAGGTCAAGTTCAACTGGT ACGTGGACGGCGTGGAGGTGCATAATGCCAAGACAAAGCCGCGGGAGGAGCAG TACAACAGCACGTACCGTGTGGTCAGCGTCCTCACCGTCCTGCACCAGGACTGG CTGAATGGCAAGGAGTACAAGTGCAAGGTCTCCAACAAAGCCCTCCCAGCCCCC ATCGAGAAAACCATCTCCAAAGCCAAAGGGCAGCCCCGAGAACCACAGGTGTAC ACCAAACCCCCATCCCGGGATGAGCTGACCAAGAACCAGGTCAGCCTGTCCTGC CTGGTCAAAGGCTTCTATCCCAGCGACATCGCCGTGGAGTGGGAGAGCAATGG GCAGCCGGAGAACAACTACAAGACCACGGTCCCCGTGCTGGACTCCGACGGCT CCTTCAGGCTCGCCAGCTATCTCACCGTGGACAAGAGCAGGTGGCAGCAGGGG AACGTCTTCTCATGCTCCGTGATGCATGAGGCTCTGCACAACCACTACACGCAGA AGAGCCTCTCCCTGTCTCCGGGTAAACATCACCATCATCACCACCATCACTAG
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	CAACAAGAGCCAGAGCGTGATCATCATCAACAACAGCACCAACGTGGTGATCCG GGCCTGCAACTTCGAGCTGTGCGACAACCCCTTCTTCGCCGTGAGCAAGCCCAT GGGCACCCAGACCCACACCATGATCTTCGACAACGCCTTCAACTGCACCTTCGA GTACATCAGCGACGCCTTCAGCCTGGACGTGAGCGAGAAGAGCGGCAACTTCAA GCACCTGCGGGAGTTCGTGTTCAAGAACAAGGACGGCTTCCTGTACGTGTACAA GGGCTACCAGCCCATCGACGTGGTGCGGGACCTGCCCAGCGGCTTCAACACCC TGAAGCCCATCTTCAAGCTGCCCCTGGGCATCAACATCACCAACTTCCGGGCCA TCCTGACCGCCTTCAGCCCCGCCCAGGACATCTGGGGCACCAGCGCCGCCGCC TACTTCGTGGGCTACCTGAAGCCCACCACCTTCATGCTGAAGTACGACGAGAAC GGCACCATCACCGACGCCGTGGACTGCAGCCAGAACCCCCTGGCCGAGCTGAA GTGCAGTGTGAAGAGCTTCGAGATCGACAAGGGCATCTACCAGACCAGCAACTT CCGGGTGGTGCCCAGCGGCGACGTGGTGCGGTTCCCCAACATCACCAACCTGT GCCCCTTCGGCGAGGTGTTCAACGCCACCAAGTTCCCCAGCGTGTACGCCTGG GAGCGGAAGAAGATCAGCAACTGCGTGGCCGACTACAGCGTGCTGTACAACAG CACCTTCTTCAGCACCTTCAAGTGCTACGGCGTGAGCGCCACCAAGCTGAACGA CCTGTGCTTCAGCAACGTGTACGCCGACAGCTTCGTGGTGAAGGGCGACGACGT GCGGCAGATCGCCCCCGGCCAGACCGGCGTGATCGCCGACTACAACTACAAGC TGCCCGACGACTTCATGGGCTGCGTGCTGGCCTGGAACACCCGGAACATCGAC GCCACCAGCACCGGCAACTACAACTACAAGTACCGGTACCTGCGGCACGGCAA GCTGCGGCCCTTCGAGCGGGACATCAGCAACGTGCCCTTCAGCCCCGACGGCA AGCCCTGCACCCCCCCCGCCCTGAACTGCTACTGGCCCCTGAACGACTACGGCT TCTACACCACTACCGGCATCGGCTACCAGCCCTACCGGGTGGTGGTGCTGAGCT TCGAGCTGCTGAACGCCCCCGCCACCGTGTGCGGCCCCAAGCTGAGCACCGAC CTGATCAAGAACCAGTGCGTGAACTTCAACTTCAACGGCCTGACCGGCACCGGC GTGCTGACCCCCAGCAGCAAGCGGTTCCAGCCCTTCCAGCAGTTCGGCCGGGA CGTGAGCGACTTCACCGACAGCGTGCGGGACCCCAAGACCAGCGAGATCCTGG ACATCAGCCCCTGCGCCTTCGGCGGCGTGAGCGTGATCACCCCCGGTACCAAC GCCAGCAGCGAGGTGGCCGTGCTGTACCAGGACGTGAACTGCACCGACGTGAG CACCGCCATCCACGCCGACCAGCTGACCCCCGCCTGGCGGATCTACAGCACCG GCAACAACGTGTTCCAGACCCAGGCCGGCTGCCTGATCGGCGCCGAGCACGTG GACACCAGCTACGAGTGCGACATCCCCATCGGCGCCGGCATCTGCGCCAGCTA CCACACCGTGAGCCTGCTGCGGAGCACCAGCCAGAAGAGCATCGTGGCCTACA CCATGAGCCTGGGCGCCGACAGCAGCATCGCCTACAGCAACAACACCATCGCC ATCCCCACCAACTTCAGCATCAGCATCACCACCGAGGTGATGCCCGTGAGCATG GCCAAGACCAGCGTGGACTGCAACATGTACATCTGCGGCGACAGCACCGAGTG CGCCAACCTGCTGCTGCAGTACGGCAGCTTCTGCACCCAGCTGAACCGGGCCC TGAGCGGCATCGCCGCCGAGCAGGACCGGAACACCCGGGAGGTGTTCGCCCA GGTGAAGCAGATGTACAAGACCCCCACCCTGAAGTACTTCGGCGGCTTCAACTT CAGCCAGATCCTGCCCGACCCCCTGAAGCCCACCAAGCGGAGCTTCATCGAGG ACCTGCTGTTCAACAAGGTGACCCTGGCCGACGCCGGCTTCATGAAGCAGTACG GCGAGTGCCTGGGCGACATCAACGCCCGGGACCTGATCTGCGCCCAGAAGTTC AACGGCCTGACCGTGCTGCCCCCCCTGCTGACCGACGACATGATCGCCGCCTA CACCGCCGCCCTGGTGAGCGGCACCGCCACCGCCGGCTGGACCTTCGGCGCC GGCGCCGCCCTGCAGATCCCCTTCGCCATGCAGATGGCCTACCGGTTCAACGG CATCGGCGTGACCCAGAACGTGCTGTACGAGAACCAGAAGCAGATCGCCAACCA GTTCAACAAGGCCATCAGCCAGATCCAGGAGAGCCTGACCACCACCAGCACCGC CCTGGGCAAGCTGCAGGACGTGGTGAACCAGAACGCCCAGGCCCTGAACACCC TGGTGAAGCAGCTGAGCTCCAACTTCGGCGCCATCAGCAGCGTGCTGAACGACA TCCTGAGCCGGCTGGACCCCCCCGAGGCCGAGGTGCAGATCGACCGGCTGATC ACCGGCCGGCTGCAGAGCCTGCAGACCTACGTGACCCAGCAGCTGATCCGGGC CGCCGAGATCCGGGCCAGCGCCAACCTGGCCGCCACCAAGATGAGCGAGTGCG TGCTGGGCCAGAGCAAGCGGGTGGACTTCTGCGGCAAGGGCTACCACCTGATG AGCTTCCCCCAGGCCGCCCCCCACGGCGTGGTGTTCCTGCACGTGACCTACGT GCCCAGCCAGGAGCGGAACTTCACCACCGCCCCCGCCATCTGCCACGAGGGCA AGGCCTACTTCCCCCGGGAGGGCGTGTTCGTGTTCAACGGCACCAGCTGGTTCA TCACCCAGCGGAACTTCTTCAGCCCCCAGATCATCACCACCGACAACACCTTCGT

	GAGCGGCAACTGCGACGTGGTGATCGGCATCATCAACAACACCGTGTACGACCC CCTGCAGCCCGAGCTGGACAGCTTCAAGGAGGAGCTGGACAAGTACTTCAAGAA CCACACCAGCCCCGACGTGGACCTGGGCGACATCAGCGGCATCAACGCCAGCG TGGTGAACATCCAGAAGGAGATCGACCGGCTGAACGAGGTGGCCAAGAACCTG AACGAGAGCCTGATCGACCTGCAGGAGCTGGGCAAGTACGAGCAGGGATCCGG ATACATCCCCGAGGCCCCCAGAGATGGCCAGGCCTACGTGCGGAAGGACGGCG AGTGGGTACTGCTGAGCACATTCCTGGGCAGATCCCTGGAGGTGCTGTTCCAGG GCCCAGGCCACCACCACCACCACCACCATCATAGCGCCTGGTCCCACCCCCAGT TCGAGAAGTGA
MERS (S-2P)	ATGATTCACTCCGTGTTCCTGCTGATGTTCCTGCTGACTCCTACAGAGAGCTATG TGGATGTGGGACCTGATTCCGTCAAGAGCGCCTGCATCGAAGTGGACATTCAGC AGACCTTCTTTGATAAGACATGGCCAAGACCCATCGACGTGAGCAAAGCCGATG GCATCATCTACCCTCAGGGGAGGACCTATTCCAATATCACAATTACTTACCAGGG CCTGTTCCCATATCAGGGAGACCACGGCGATATGTACGTGTATTCTGCTGGCCAT GCAACAGGGACCACACCTCAGAAGCTGTTTGTGGCTAACTACAGCCAGGACGTC AAACAGTTCGCAAATGGATTTGTGGTCCGCATCGGCGCCGCTGCAAACTCTACC GGCACAGTGATCATTTCACCTAGCACTTCCGCAACCATCCGAAAAATCTACCCAG CCTTCATGCTGGGAAGCTCCGTGGGCAATTTTAGCGACGGGAAAATGGGACGGT TCTTTAACCACACCCTGGTGCTGCTGCCTGATGGATGCGGCACACTGCTGAGGG CTTTCTACTGTATCCTGGAGCCACGCAGCGGAAACCACTGCCCCGCAGGAAATA GCTACACCTCCTTTGCCACATATCATACTCCAGCTACCGACTGTTCCGATGGCAA CTACAATCGAAACGCCTCTCTGAATAGTTTCAAGGAATACTTCAACCTGCGGAAT TGCACATTCATGTACACTTATAACATCACCGAGGACGAAATTCTGGAGTGGTTCG GAATCACTCAGACCGCACAGGGCGTGCACCTGTTTTCTAGTCGCTACGTCGACC TGTATGGCGGGAACATGTTCCAGTTTGCCACTCTGCCCGTGTACGATACCATCAA GTACTATTCCATCATTCCTCATTCAATCCGCAGCATTCAGTCCGATCGAAAGGCTT GGGCCGCTTTCTACGTGTATAAACTGCAGCCACTGACCTTCCTGCTGGACTTTAG CGTCGATGGCTACATCCGGAGAGCCATTGACTGCGGGTTTAATGATCTGTCCCA GCTGCACTGTTCTTACGAAAGTTTCGACGTGGAGTCCGGCGTGTATTCTGTCTCA AGCTTTGAGGCCAAGCCCTCTGGGAGTGTGGTCGAGCAGGCTGAAGGAGTGGA GTGCGATTTCAGTCCTCTGCTGTCAGGGACCCCCCCTCAGGTGTACAACTTCAA GCGGCTGGTCTTTACTAACTGTAACTACAATCTGACCAAGCTGCTGTCACTGTTC AGCGTGAATGACTTTACATGCTCCCAGATCAGCCCCGCAGCCATTGCTAGTAACT GTTACTCCTCTCTGATCCTGGACTACTTCTCATATCCACTGAGTATGAAGAGCGA CCTGAGCGTGAGTTCAGCCGGCCCCATCAGCCAGTTCAACTATAAACAGAGCTT CAGCAATCCTACATGCCTGATTCTGGCTACTGTGCCACATAATCTGACTACCATC ACTAAGCCCCTGAAATACTCCTATATTAACAAGTGCAGCCGGTTCCTGTCCGACG ATAGAACCGAAGTGCCACAGCTGGTCAACGCCAATCAGTACTCTCCCTGTGTGA GTATCGTCCCTTCAACCGTGTGGGAAGACGGGGATTACTATAGAAAACAGCTGA GCCCCCTGGAGGGAGGAGGATGGCTGGTGGCATCCGGATCTACAGTCGCCATG ACTGAGCAGCTGCAGATGGGGTTCGGAATCACAGTGCAGTACGGCACAGACACT AACTCTGTCTGTCCCAAGCTGGAATTCGCTAACGATACTAAGATCGCAAGTCAGC TGGGAAACTGCGTGGAGTACTCTCTGTATGGCGTGAGTGGCAGAGGGGTCTTCC AGAATTGTACCGCAGTGGGCGTCCGACAGCAGCGGTTTGTGTACGACGCCTATC AGAATCTGGTCGGCTACTATAGCGACGATGGGAACTACTATTGCCTGAGGGCCT GTGTGAGCGTCCCTGTGTCCGTCATCTACGATAAGGAAACCAAAACACACGCCA CACTGTTCGGGTCCGTGGCTTGCGAGCATATTAGCTCCACAATGTCTCAGTACAG TAGATCAACTAGGTCAATGCTGAAGAGGCGCGATAGCACCTATGGACCTCTGCA GACACCAGTGGGGTGTGTCCTGGGACTGGTGAACTCTAGTCTGTTTGTCGAGGA CTGCAAGCTGCCCCTGGGCCAGAGCCTGTGCGCCCTGCCCGACACCCCCAGCA CCCTGACCCCCGCCAGCGTGGGCAGCGTGCCCGGCGAGATGCGGCTGGCCAG CATCGCCTTCAACCACCCCATCCAGGTGGACCAGCTGAACAGCAGCTACTTCAA GCTGAGCATCCCCACCAACTTCAGCTTCGGCGTGACCCAGGAGTACATCCAGAC CACCATCCAGAAGGTGACCGTGGACTGCAAGCAGTACGTGTGCAACGGCTTCCA GAAGTGCGAGCAGCTGCTGCGGGAGTACGGCCAGTTCTGCAGCAAGATCAACC AGGCCCTGCACGGCGCCAACCTGCGGCAGGACGACAGCGTGCGGAACCTGTTC

	GCTAGCGTGAAGAGCAGCCAGAGCAGCCCCATCATCCCCGGCTTCGGCGGCGA CTTCAACCTGACCCTGCTGGAGCCCGTGAGCATCAGCACCGGCAGCCGGAGCG CCCGGAGCGCCATCGAGGACCTGCTGTTCGACAAGGTGACCATCGCCGACCCC GGCTACATGCAGGGCTACGACGACTGCATGCAGCAGGGCCCCGCCAGCGCCCG GGACCTGATCTGCGCCCAGTACGTGGCCGGCTACAAGGTGCTGCCCCCCCTGA TGGACGTGAACATGGAGGCCGCCTACACCAGCAGCCTGCTGGGCAGCATCGCC GGCGTGGGCTGGACCGCCGGCCTGAGCAGCTTCGCCGCCATCCCCTTCGCCCA GAGCATCTTCTACCGGCTGAACGGCGTGGGCATCACCCAGCAGGTGCTGAGCG AGAACCAGAAGCTGATCGCCAACAAGTTCAACCAGGCCCTGGGCGCCATGCAGA CCGGCTTCACCACCACCAACGAGGCCTTCCACAAGGTGCAGGACGCCGTGAAC AACAACGCCCAGGCCCTGAGCAAGCTGGCCAGCGAGCTGAGCAACACCTTCGG CGCCATCAGCGCCAGCATCGGCGACATCATCCAGCGGCTGGACCCCCCCGAGC AGGACGCCCAGATCGACCGGCTGATCAACGGCCGGCTGACCACCCTGAACGCC TTCGTGGCCCAGCAGCTGGTGCGGAGCGAGAGCGCCGCCCTGAGCGCCCAGCT GGCCAAGGACAAGGTGAACGAGTGCGTGAAGGCCCAGAGCAAGCGGAGCGGCT TCTGCGGCCAGGGCACCCACATCGTGAGCTTCGTGGTGAACGCCCCCAACGGC CTGTACTTCATGCACGTGGGCTACTACCCCAGCAACCACATCGAGGTGGTGAGC GCCTACGGCCTGTGCGACGCCGCCAACCCCACCAACTGCATCGCCCCCGTGAA CGGCTACTTCATCAAGACCAACAACACCCGGATCGTGGACGAGTGGAGCTACAC CGGCAGCAGCTTCTACGCCCCCGAGCCCATCACCAGCCTGAACACCAAGTACGT GGCCCCCCAGGTGACCTACCAGAACATCAGCACCAACCTGCCCCCCCCCCTGCT GGGCAACAGCACCGGCATCGACTTCCAGGACGAGCTGGACGAGTTCTTCAAGAA CGTGAGCACCAGCATCCCCAACTTCGGCAGCCTGACCCAGATCAACACCACCCT GCTGGACCTGACCTACGAGATGCTGAGCCTGCAGCAGGTGGTGAAGGCCCTGA ACGAGAGCTACATCGACCTGAAGGAGCTGGGCAACTACACCTACGGATCCGGAT ACATCCCCGAGGCCCCCAGAGATGGCCAGGCCTACGTGCGGAAGGACGGCGAG TGGGTACTGCTGAGCACATTCCTGGGCAGATCCCTGGAGGTGCTGTTCCAGGGC CCAGGCCATCACCACCATCACCACCATCATAGCGCCTGGTCCCACCCCCAGTTC GAGAAGGGCGGCGGTAGTGGAGGGGGCGGATCTGGCGGCTCAGCTTGGAGCC ACCCCCAGTTCGAAAAGTGA
229E (S-2P)	ATGTTTGTGCTGCTGGTGGCCTATGCACTGCTGCACATCGCAGGATGCCAGACC ACAAACGGCACCAATACAAGCCACTCCGTGTGCAACGGATGCGTGGGACACAGC GAGAACGTGTTCGCAGTGGAGAGCGGAGGATACATCCCATCCAATTTCGCCTTT AACAATTGGTTCCTGCTGACCAACACAAGCTCCGTGGTGGACGGCGTGGTGAGA TCCTTTCAGCCTCTGCTGCTGAACTGCCTGTGGTCTGTGAGCGGCTCCCAGTTCA CCACAGGCTTCGTGTACTTTAATGGCACCGGCAGAGGCGCCTGTAAGGGCTTCT ACTCTAACGCCTCTAGCGACGTGATCAGGTATAACATCAATTTTGAGGAGAATCT GCGGAGAGGCACAATCCTGTTTAAGACCTCCTACGGCGCCGTGGTGTTCTATTG CACAAACAATACCCTGGTGTCCGGCGATGCCCACATCCCATCTGGCACCGTGCT GGGCAACTTCTATTGTTTTGTGAACACCACAATCGGCAATGAGACCACAAGCGCC TTTGTGGGCGCCCTGCCAAAGACCGTGCGCGAGTTCGTGATCAGCCGGACAGG CCACTTTTACATCAATGGCTACAGGTATTTCTCCCTGGGCGACGTGGAGGCCGT GAACTTCAATGTGACCAACGCCGCCACCACAGTGTGCACAGTGGCCCTGGCCAG CTATGCCGATGTGCTGGTGAACGTGTCCCAGACCGCCATCGCCAATATCATCTA CTGCAACTCCGTGATCAATCGGCTGAGATGTGACCAGCTGTCTTTCGACGTGCC TGATGGCTTTTATTCTACAAGCCCCATCCAGCCTGTGGAGCTGCCCGTGAGCATC GTGAGCCTGCCAGTGTACCACAAGCACACCTTCATCGTGCTGTATGTGAATTTTG AGCACAGGAGGGGACCTGGCAAGTGCTACAACTGTCGCCCTGCCGTGATCAATA TCACCCTGGCCAACTTCAATGAGACAAAGGGCCCTCTGTGCGTGGACACAAGCC ACTTCACCACACAGTTTGTGGATAACGTGAAGCTGGCCCGGTGGTCCGCCTCTA TCAACACCGGCAATTGTCCATTCTCCTTTGGCAAGGTGAACAATTTCGTGAAGTT TGGCAGCGTGTGCTTTAGCCTGAAGGATATCCCAGGCGGCTGTGCCATGCCCAT CATGGCCAACCTGGTGAATAGCAAGTCCCACAATATCGGCAGCCTGTACGTGTC TTGGAGCGACGGCGATGTGATCACAGGCGTGCCTAAGCCAGTGGAGGGCGTGT CCTCTTTCATGAACGTGACACTGAATAAGTGCACCAAGTACAACATCTATGACGT GAGCGGCGTGGGCGTGATCCGCATCTCCAACGATACCTTTCTGAATGGCATCAC

	CTATACATCCACCTCTGGCAATCTGCTGGGCTTCAAGGACGTGACAAACGGCAC CATCTACAGCATCACACCATGTAATCCCCCTGATCAGCTGGTGGTGTATCAGCAG GCAGTGGTGGGAGCAATGCTGTCCGAGAACTTCACCTCCTACGGCTTTTCTAAT GTGGTGGAGATGCCCAAGTTCTTTTACGCCTCTAACGGCACATATAATTGCACCG ACGCCGTGCTGACATATAGCAGCTTCGGCGTGTGCGCCGATGGCTCTATCATCG CCGTGCAGCCTCGGAACGTGAGCTACGACAGCGTGTCCGCCATCGTGACCGCC AACCTGTCTATCCCTTTCAATTGGACCACAAGCGTGCAGGTGGAGTACCTGCAGA TCACATCCACCCCAATCGTGGTGGACTGCTCTACCTACGTGTGCAACGGCAATG TGCGCTGCGTGGAGCTGCTGAAGCAGTACACAAGCGCCTGTAAGACCATCGAG GATGCCCTGCGGAACTCCGCCATGCTGGAGAGCGCCGACGTGTCCGAGATGCT GACCTTCGATAAGAAGGCCTTTACACTGGCCAACGTGTCTAGCTTTGGCGACTAT AATCTGTCCTCTGTGATCCCATCTCTGCCACGGTCTGGCAGCAGAGTGGCAGGC AGGAGCGCCATCGAGGATATCCTGTTCTCTAAGCTGGTGACAAGCGGACTGGGC ACCGTGGACGCCGATTACAAGAAGTGCACCAAGGGACTGAGCATCGCAGACCTG GCATGTGCCCAGTACTATAACGGAATCATGGTGCTGCCAGGAGTGGCAGATGCA GAGCGCATGGCCATGTATACAGGCTCCCTGATCGGCGGCATCGCCCTGGGAGG ACTGACCTCCGCCGCATCTATCCCTTTCTCCCTGGCCATCCAGTCTCGCCTGAAT TACGTGGCCCTGCAGACCGACGTGCTGCAGGAGAACCAGAGAATCCTGGCCGC CAGCTTCAACAAGGCCATGACCAATATCGTGGACGCCTTTACAGGCGTGAATGAT GCCATCACACAGACCTCCCAGGCCCTGCAGACAGTGGCAACCGCCCTGAACAA GATCCAGGATGTGGTGAATCAGCAGGGCAACTCTCTGAATCACCTGACCAGCCA GCTGAGACAGAACTTTCAGGCCATCAGCTCCTCTATCCAGGCCATCTACGACAG GCTGGACCCCCCACAGGCAGACCAGCAGGTGGATAGACTGATCACAGGCAGGC TGGCCGCCCTGAACGTGTTCGTGAGCCACACACTGACCAAGTATACCGAGGTGA GGGCATCTAGGCAGCTGGCACAGCAGAAGGTGAACGAGTGCGTGAAGTCCCAG TCTAAGAGATACGGCTTTTGTGGCAATGGCACCCACATCTTCAGCCTGGTGAACG CAGCACCAGAGGGACTGGTGTTCCTGCACACAGTGCTGCTGCCCACCCAGTACA AGGACGTGGAGGCATGGTCCGGACTGTGCGTGGATGGCATCAACGGCTACGTG CTGAGGCAGCCAAATCTGGCCCTGTATAAGGAGGGCAACTACTATCGCATCACC AGCCGGATCATGTTTGAGCCTAGAATCCCAACAATCGCCGACTTCGTGCAGATC GAGAACTGTAATGTGACCTTTGTGAACATCAGCAGGTCCGAGCTGCAGACAATC GTGCCCGAGTACATCGACGTGAATAAGACCCTGCAGGAGCTGTCCTACAAGCTG CCCAACTATACCGTGCCTGATCTGGTGGTGGAGCAGTATAACCAGACAATCCTG AATCTGACCAGCGAGATCTCCACACTGGAGAACAAGTCTGCCGAGCTGAATTAC ACCGTGCAGAAGCTGCAGACACTGATCGACAACATCAATAGCACACTGGTGGAT CTGAAGTGGCTGAACCGGGTGGAGACCGGATCCGGATACATCCCCGAGGCCCC CAGAGATGGCCAGGCCTACGTGCGGAAGGACGGCGAGTGGGTACTGCTGAGCA CATTCCTGGGCAGATCCCTGGAGGTGCTGTTCCAGGGCCCAGGCCATCACCACC ATCACCACCATCATAGCGCCTGGTCCCACCCCCAGTTCGAGAAGGGCGGCGGTA GTGGAGGGGGCGGATCTGGCGGCTCAGCTTGGAGCCACCCCCAGTTCGAAAAG TGA
HKU1 (S-2P)	ATGTTTCTGATTATCTTTATTCTGCCCACTACCCTGGCCGTCATTGGAGACTTCAA CTGCACTAACTCATTCATTAACGACTACAACAAGACAATCCCCCGCATTTCCGAG GATGTGGTCGACGTGTCTCTGGGGCTGGGAACATACTATGTGCTGAATCGAGTC TATCTGAACACCACACTGCTGTTTACTGGATACTTCCCTAAATCCGGCGCCAACT TCCGCGACCTGGCTCTGAAGGGCTCAATCTACCTGAGCACCCTGTGGTACAAAC CCCCTTTTCTGTCAGATTTCAACAATGGGATCTTTAGCAAGGTGAAGAACACTAA GCTGTACGTCAACAACACCCTGTACTCTGAATTCAGTACAATCGTGATTGGATCT GTCTTTGTGAACACTAGTTATACCATCGTGGTCCAGCCTCACAATGGCATCCTGG AGATTACCGCCTGTCAGTATACAATGTGCGAATACCCACACACCGTGTGCAAGTC AAAAGGCAGCATTAGAAACGAGTCCTGGCATATCGATAGCTCCGAACCCCTGTG CCTGTTTAAGAAAAACTTCACATACAACGTGAGCGCCGACTGGCTGTATTTCCAC TTTTACCAGGAGAGGGGAGTGTTCTATGCCTACTATGCTGATGTCGGCATGCCAA CTACCTTCCTGTTTTCCCTGTACCTGGGCACAATTCTGTCTCATTACTATGTGATG CCCCTGACTTGCAACGCCATCTCTAGTAACACCGACAATGAGACACTGGAATATT GGGTGACCCCTCTGTCCCGGAGACAGTACCTGCTGAACTTCGATGAGCACGGC

	GTGATTACAAATGCTGTCGACTGTTCAAGCTCCTTCCTGAGTGAAATCCAGTGCA AGACTCAGTCATTTGCACCTAACACCGGGGTGTATGATCTGTCTGGCTTCACCGT CAAACCAGTGGCCACTGTCTACAGGCGCATTCCAAACCTGCCCGACTGTGATAT CGACAATTGGCTGAACAATGTCTCCGTGCCATCTCCCCTGAATTGGGAGCGACG GATCTTCAGCAACTGCAATTTCAACCTGTCAACTCTGCTGAGACTGGTCCATGTG GATTCATTCAGCTGTAACAATCTGGACAAGAGCAAAATCTTTGGCTCCTGCTTCA ACTCTATTACCGTGGACAAGTTCGCCATCCCAAATAGAAGGCGCGACGATCTGC AGCTGGGGTCTAGTGGATTTCTGCAGTCAAGCAACTACAAGATCGATATTTCCTC TAGTTCATGCCAGCTGTACTATAGCCTGCCACTGGTCAATGTGACCATCAACAAT TTCAATCCCAGCTCCTGGAACCGACGGTACGGCTTCGGGTCCTTTAACCTGTCTA GTTATGATGTGGTCTACTCTGACCACTGTTTTAGTGTGAACTCAGATTTCTGTCCT TGCGCAGACCCAAGTGTGGTCAATTCATGCGCCAAGAGCAAACCACCCTCCGCT ATTTGTCCTGCAGGCACAAAGTATAGGCATTGCGATCTGGACACAACTCTGTACG TGAAAAACTGGTGTCGCTGCAGCTGTCTGCCTGACCCAATCAGCACTTACTCCCC CAATACCTGCCCTCAGAAGAAAGTGGTCGTGGGAATTGGCGAGCACTGTCCTGG GCTGGGAATCAACGAGGAAAAGTGCGGGACCCAGCTGAATCATTCAAGCTGCTT CTGTTCCCCAGATGCCTTTCTGGGATGGTCTTTCGACAGTTGTATTTCAAACAAC AGGTGCAACATCTTTTCTAATTTCATCTTTAACGGGATTAATAGTGGAACCACATG TTCAAACGATCTGCTGTACAGCAATACTGAGATCAGCACCGGCGTCTGCGTGAA CTATGACCTGTACGGGATCACAGGCCAGGGGATTTTCAAGGAAGTGAGCGCCGC TTACTATAACAATTGGCAGAACCTGCTGTATGATAGCAATGGCAACATCATTGGG TTCAAGGACTTTCTGACCAACAAGACATATACTATCCTGCCCTGCTACTCTGGCA GAGTGAGTGCAGCCTTCTACCAGAACTCCTCTAGTCCTGCCCTGCTGTATAGGAA TCTGAAGTGTAGCTACGTGCTGAACAATATCAGCTTTATTTCCCAGCCATTCTATT TTGACAGCTACCTGGGCTGCGTGCTGAACGCTGTCAATCTGACCTCCTACAGCG TGAGCAGCTGTGATCTGAGAATGGGATCCGGCTTCTGCATTGACTATGCACTGC CATCCAGCGGGGGGAGCGGAAGCGGAATCAGTTCACCATACAGGTTCGTGACTT TTGAGCCCTTCAACGTGAGCTTCGTGAACGACAGTGTGGAGACCGTCGGCGGG CTGTTTGAAATCCAGATTCCAACAAACTTCACTATTGCAGGCCACGAGGAGTTCA TCCAGACCAGCTCCCCCAAAGTGACAATCGATTGTTCAGCCTTCGTCTGCAGCAA TTATGCTGCATGTCATGATCTGCTGAGCGAGTACGGAACTTTTTGCGACAATATC AACAGCATTCTGAACGAAGTGAATGATCTGCTGGACATTACCCAGCTGCAGGTG GCTAACGCACTGATGCAGGGCGTCACACTGAGCTCTAATCTGAACACTAATCTGC ACAGCGATGTGGACAATATCGACTTCAAGAGCCTGCTGGGATGTCTGGGGTCCC AGTGCGGATCAAGCTCCCGCTCCCTGCTGGAGGATCTGCTGTTCAACAAGGTGA AACTGTCTGACGTGGGCTTTGTCGAGGCCTACAACAATTGTACCGGAGGCAGCG AAATCCGGGATCTGCTGTGCGTGCAGAGCTTCAATGGCATCAAAGTCCTGCCTC CAATTCTGTCCGAAACTCAGATCAGCGGGTATACTACCGCAGCTACCGTGGCAG CAATGTTCCCACCTTGGAGCGCCGCAGCAGGAGTGCCCTTTTCCCTGAACGTCC AGTACCGCATCAATGGGCTGGGAGTGACCATGGACGTGCTGAACAAGAATCAGA AACTGATTGCCAACGCTTTCAATAAGGCTCTGCTGAGCATCCAGAACGGGTTTAC CGCAACAAATTCTGCACTGGCCAAAATCCAGAGTGTCGTGAACGCTAATGCACA GGCCCTGAACAGCCTGCTGCAGCAGCTGTTTAATAAGTTCGGAGCTATTTCTAGT TCACTGCAGGAGATCCTGTCTAGACTGGATCCCCCCGAAGCACAGGTGCAGATC GACCGGCTGATTAACGGCAGACTGACCGCACTGAATGCCTACGTGTCACAGCAG CTGAGCGATATCACCCTGATCAAGGCTGGGGCAAGCCGAGCCATCGAGAAGGT GAACGAATGCGTGAAAAGTCAGTCACCCCGGATTAATTTCTGCGGCAACGGGAA TCACATCCTGAGCCTGGTGCAGAACGCTCCTTATGGGCTGCTGTTTATCCATTTC AGTTACAAGCCCACCAGCTTCAAGACTGTCCTGGTGTCACCTGGACTGTGCCTG AGCGGAGATCGGGGCATTGCCCCCAAGCAGGGGTATTTCATCAAACAGAACGAC TCCTGGATGTTTACAGGAAGCTCCTACTATTACCCCGAGCCTATCTCTGACAAGA ATGTCGTGTTCATGAACAGCTGCTCCGTGAACTTCACCAAAGCCCCCTTCATCTA CCTGAACAATAGCATCCCAAACCTGTCCGATTTCGAGGCTGAACTGTCTCTGTGG TTTAAGAATCACACCAGTATTGCCCCTAACCTGACATTCAATAGCCATATCAACGC TACATTTCTGGACCTGTATTACGAGATGAACGTTATCCAGGAATCTATTAAGAGTC TGAACAGCGGCCGCCTGGAGGTGCTGTTCCAGGGCCCAGGCGGGTACATCCCA

	GAGGCACCTCGAGACGGACAGGCTTATGTGAGAAAGGATGGAGAGTGGGTCCT GCTGTCCACCTTCCTGGGCCACCACCACCACCACCACCATCATAGCGCCTGGTC CCACCCCCAGTTCGAGAAGTGA
NL63 (S-2P)	ATGAAGCTGTTCCTGATCCTGCTGGTGCTGCCCCTGGCCAGCTGCTTCTTTACCT GTAACTCTAATGCCAACCTGAGCATGCTGCAGCTGGGCGTGCCCGACAATAGCT CCACCATCGTGACAGGCCTGCTGCCTACACACTGGTTCTGCGCCAACCAGAGCA CCAGCGTGTACTCCGCCAATGGCTTCTTTTATATCGATGTGGGCAACCACAGATC TGCCTTTGCCCTGCACACCGGCTACTATGACGCCAACCAGTACTATATCTACGTG ACAAATGAGATCGGCCTGAACGCCTCCGTGACCCTGAAGATCTGCAAGTTCTCTA GGAACACCACATTCGACTTTCTGAGCAATGCCTCTAGCTCCTTCGATTGTATCGT GAATCTGCTGTTTACCGAGCAGCTGGGAGCACCACTGGGAATCACCATCTCCGG CGAGACAGTGAGACTGCACCTGTACAACGTGACCCGGACCTTCTACGTGCCAGC AGCCTATAAGCTGACAAAGCTGAGCGTGAAGTGCTACTTCAATTATTCCTGCGTG TTCAGCGTGGTGAACGCCACCGTGACAGTGAATGTGACCACACACAACGGCCGC GTGGTGAATTACACAGTGTGCGACGATTGTAACGGCTATACCGACAATATCTTCA GCGTGCAGCAGGATGGCAGAATCCCCAATGGCTTCCCCTTTAACAATTGGTTTCT GCTGACCAACGGCAGCACACTGGTGGATGGCGTGTCCAGACTGTATCAGCCCCT GAGGCTGACCTGCCTGTGGCCTGTGCCAGGCCTGAAGTCTAGCACCGGCTTCG TGTACTTTAATGCCACAGGCTCCGACGTGAATTGTAACGGCTACCAGCACAACTC TGTGGTGGATGTGATGCGCTATAATCTGAACTTCTCCGCCAATTCTCTGGACAAC CTGAAGTCTGGCGTGATCGTGTTCAAGACCCTGCAGTACGATGTGCTGTTTTATT GCAGCAACTCCTCTAGCGGCGTGCTGGACACCACAATCCCATTCGGCCCCTCCT CTCAGCCTTACTACTGTTTCATCAACTCTACCATCAACACCACACACGTGAGCAC ATTCGTGGGCATCCTGCCACCTACCGTGCGCGAGATCGTGGTGGCAAGGACCG GCCAGTTTTACATCAATGGCTTCAAGTATTTTGACCTGGGCTTCATCGAGGCCGT GAACTTCAACGTGACCACAGCCTCCGCCACCGACTTCTGGACAGTGGCCTTCGC CACATTTGTGGATGTGCTGGTGAACGTGTCCGCCACCAATATCCAGAACCTGCT GTACTGCGATTCTCCTTTCGAGAAGCTGCAGTGTGAGCACCTGCAGTTTGGCCT GCAGGACGGCTTCTACAGCGCCAACTTTCTGGACGATAATGTGCTGCCTGAGAC ATATGTGGCCCTGCCAATCTACTATCAGCACACCGATATCAATTTCACCGCCACA GCCAGCTTTGGCGGCTCCTGCTACGTGTGCAAGCCACACCAGGTGAACATCAGC CTGAATGGCAACACCTCCGTGTGCGTGAGAACAAGCCACTTCTCCATCAGATACA TCTATAACAGGGTGAAGAGCGGCTCCCCAGGCGACAGCTCCTGGCACATCTACC TGAAGTCCGGCACCTGTCCTTTCTCTTTTAGCAAGCTGAACAATTTCCAGAAGTTT AAGACCATCTGCTTCTCTACAGTGGAGGTGCCAGGCAGCTGTAATTTTCCCCTGG AGGCCACATGGCACTACACCAGCTATACAATCGTGGGCGCCCTGTACGTGACAT GGTCTGAGGGCAACAGCATCACCGGCGTGCCCTATCCCGTGAGCGGCATCAGA GAGTTCAGCAATCTGGTGCTGAACAACTGCACAAAGTACAACATCTACGATTACG TGGGCACCGGCATCATCAGGTCTAGCAACCAGTCCCTGGCCGGCGGCATCACC TACGTGTCCAATTCTGGCAACCTGCTGGGCTTCAAGAACGTGAGCACCGGCAAT ATCTTTATCGTGACACCTTGCAATCAGCCAGACCAGGTGGCCGTGTATCAGCAGA GCATCATCGGCGCCATGACAGCCGTGAACGAGTCCAGATACGGCCTGCAGAAC CTGCTGCAGCTGCCAAATTTCTACTACGTGAGCAACGGCGGCAACAATTGCACC ACAGCCGTGATGACCTACTCCAACTTTGGCATCTGTGCCGACGGCTCTCTGATC CCTGTGAGGCCACGCAATTCCTCTGATAACGGCATCAGCGCCATCATCACAGCC AATCTGTCTATCCCCAGCAACTGGACCACATCTGTGCAGGTGGAGTACCTGCAG ATCACCAGCACACCTATCGTGGTGGATTGCGCCACCTACGTGTGCAATGGCAAC CCAAGATGCAAGAATCTGCTGAAGCAGTACACCAGCGCCTGTAAGACAATCGAG GACGCACTGAGGCTGTCCGCCCACCTGGAGACAAACGACGTGAGCTCCATGCT GACCTTCGATTCCAATGCCTTTTCTCTGGCCAACGTGACCTCCTTCGGCGATTAT AATCTGTCTAGCGTGCTGCCACAGCGGAACATCAGATCCTCTAGGATCGCAGGC AGGAGCGCCCTGGAGGACCTGCTGTTTTCCAAGGTGGTGACCTCTGGCCTGGG CACAGTGGACGTGGATTACAAGTCCTGCACCAAGGGCCTGTCTATCGCCGATCT GGCCTGTGCCCAGTACTATAACGGCATCATGGTGCTGCCAGGAGTGGCAGACG CAGAGCGCATGGCCATGTATACCGGCAGCCTGATCGGAGGAATGGTGCTGGGA GGACTGACATCCGCCGCAGCAATCCCTTTCTCTCTGGCCCTGCAGGCCCGGCTG

	AATTACGTGGCCCTGCAGACCGATGTGCTGCAGGAGAATCAGAAGATCCTGGCC GCCTCTTTCAACAAGGCCATCAACAATATCGTGGCCAGCTTTAGCTCCGTGAACG ATGCCATCACCCAGACAGCCGAGGCCATCCACACCGTGACAATCGCCCTGAATA AGATCCAGGACGTGGTGAACCAGCAGGGCAGCGCCCTGAATCACCTGACCTCC CAGCTGCGCCACAATTTCCAGGCCATCAGCAACTCCATCCAGGCCATCTACGAC AGGCTGGACCCCCCACAGGCAGACCAGCAGGTGGATAGGCTGATCACCGGCCG GCTGGCCGCCCTGAACGCCTTCGTGAGCCAGGTGCTGAATAAGTATACAGAGGT GCGCGGCAGCCGGAGACTGGCACAGCAGAAGATCAACGAGTGCGTGAAGTCTC AGAGCAACCGGTACGGCTTCTGTGGCAATGGCACCCACATCTTTAGCATCGTGA ATTCCGCCCCAGACGGCCTGCTGTTCCTGCACACCGTGCTGCTGCCCACAGATT ATAAGAACGTGAAGGCCTGGAGCGGCATCTGCGTGGACGGCATCTACGGCTATG TGCTGCGCCAGCCTAACCTGGTGCTGTACAGCGATAATGGCGTGTTCCGCGTGA CCTCCCGGATCATGTTTCAGCCCAGACTGCCTGTGCTGAGCGACTTCGTGCAGA TCTATAACTGTAACGTGACATTTGTGAACATCTCCAGGGTGGAGCTGCACACCGT GATCCCTGACTACGTGGATGTGAACAAGACACTGCAGGAGTTTGCCCAGAACCT GCCCAAGTACGTGAAGCCTAATTTCGACCTGACCCCCTTCAACCTGACATATCTG AATCTGTCTAGCGAGCTGAAGCAGCTGGAGGCCAAGACCGCCTCCCTGTTCCAG ACCACAGTGGAGCTGCAGGGCCTGATCGACCAGATCAACTCTACATACGTGGAT CTGAAGCTGCTGAATCGGTTTGAGAACGGATCCGGATACATCCCCGAGGCCCCC AGAGATGGCCAGGCCTACGTGCGGAAGGACGGCGAGTGGGTACTGCTGAGCAC ATTCCTGGGCAGATCCCTGGAGGTGCTGTTCCAGGGCCCAGGCCATCACCACCA TCACCACCATCATAGCGCCTGGTCCCACCCCCAGTTCGAGAAGGGCGGCGGTA GTGGAGGGGGCGGATCTGGCGGCTCAGCTTGGAGCCACCCCCAGTTCGAAAAG TGA
OC43 (S-2P)	ATGTTCCTGATCCTGCTGATCAGCCTGCCTACCGCCTTTGCCGTGATCGGCGAC CTGAAGTGCCCACTGGATAGCCGGACAGGCTCCCTGAACAATATCGACACCGGC CCCCCTTCCATCTCTACCGCCACAGTGGATGTGACAAATGGCCTGGGCACCTAC TATGTGCTGGACAGGGTGTATCTGAATACCACACTGTTCCTGAACGGCTACTATC CCACCAGCGGCTCCACATACCGCAACATGGCCCTGAAGGGCACAGATAAGCTGT CCACCCTGTGGTTTAAGCCACCCTTCCTGTCTGACTTTATCAATGGCATCTTCGC CAAGGTGAAGAACACCAAGGTGTTTAAGGATGGCGTGATGTATTCTGAGTTCCCC GCCATCACCATCGGCAGCACATTTGTGAACACCTCTTACAGCGTGGTGGTGCAG CCTAGGACAATCAATTCTACCCAGGACGGCGTGAACAAGCTGCAGGGCCTGCTG GAGGTGAGCGTGTGCCAGTATAATATGTGCGAGTACCCCCACACAATCTGCCAC CCTAAGCTGGGCAACCACTTCAAGGAGCTGTGGCACATGGATACCGGCGTGGTG TCCTGTCTGTATAAGCGCAACTTCACCTACGACGTGAACGCCACCTATCTGTACT TCCACTTTTACCAGGAGGGCGGCACATTCTATGCCTACTTTACCGATACAGGCGT GGTGACCAAGTTCCTGTTCAACGTGTACCTGGGCATGGCCCTGAGCCACTACTA TGTGATGCCACTGACATGCATCTCCCGGAGAGATATCGGCTTCACCCTGGAGTA TTGGGTGACCCCCCTGACATCCCGGCAGTACCTGCTGGCCTTCAATCAGGACGG CATCATCTTTAACGCCGTGGACTGCATGTCTGACTTCATGAGCGAGATCAAGTGT AAGACACAGAGCATCGCCCCTCCAACCGGCGTGTATGAGCTGAACGGCTACACC GTGCAGCCCATCGCCGACGTGTACAGGCGCAAGCCAGATCTGCCCAACTGCAAT ATCGAGGCCTGGCTGAATGACAAGTCCGTGCCCTCTCCTCTGAACTGGGAGAGA AAGACCTTCAGCAACTGTAACTTCAACATGAGCTCCCTGATGTCTTTCATCCAGG CCGACAGCTTTACATGCAACAATATCGATGCCGCCAAGATCTACGGCATGTGCTT CTCTAGCATCACCATCGACAAGTTTGCCATCCCTAACGGCCGGAAGGTGGATCT GCAGCTGGGCAATCTGGGCTATCTGCAGTCTTTCAACTACAGAATCGATACCACA GCCACAAGCTGCCAGCTGTACTATAATCTGCCAGCCGCCAACGTGTCCGTGTCT CGGTTCAATCCCTCCACCTGGAACAAGAGATTCGGCTTTATCGAGAATAGCGTGT TCAAGCCACAGCCAGCAGGCGTGCTGACAAACCACGACGTGGTGTACGCCCAG CACTGTTTCAAGGCCCCAAAGAATTTTTGCCCCTGTAAGCTGAACTCCTCTCTGT GCGTGGGCTCCGGACCAGGCAAGAACAATGGCATCGGCACCTGTCCCGCCGGC ACAAACTATCTGACCTGCCACAACCTGTGCAACCCTGATCCAATCACCTTCACAG GCCCCTACAAGTGCCCTCAGACCAAGAGCCTGGTGGGAATCGGAGAGCACTGC TCCGGACTGGCCGTGAAGTCTGACTACTGTGGCGGCAATCCTTGCACATGTCAG

	CCACAGGCCTTCCTGGGATGGAGCGCCGACTCCTGCCTGCAGGGCGATAAGTG TAATATCTTTGCCAACCTGATCCTGCACGATGTGAACTCTGGCCTGACCTGCAGC ACAGACCTGCAGAAGGCCAATACCGATATCAAGCTGGGCGTGTGCGTGAACTAT GACCTGTATGGCATCTCCGGCCAGGGCATCTTCGTGGAAGTGAATGCCACATAC TATAATTCCTGGCAGAACCTGCTGTACGACTCTAATGGCAACCTGTATGGCTTCA GGGATTACATCACCAATCGGACCTTCATGATCAGATCTTGCTATAGCGGACGCGT GAGCGCCGCATTCCACGCAAACAGCTCCGAGCCTGCCCTGCTGTTCAGGAATAT CAAGTGCAACTACGTGTTTAACAATTCCCTGATCCGCCAGCTGCAGCCAATCAAC TATTTTGATTCTTACCTGGGCTGCGTGGTGAATGCCTACAACAGCACCGCCATCT CTGTGCAGACATGCGACCTGACCGTGGGCTCCGGCTATTGCGTGGATTACTCCA AGAATCGGAGATCTAGGCGCGCCATCACCACAGGCTACAGGTTCACAAACTTTG AGCCTTTCACCGTGAATAGCGTGAACGACTCCCTGGAGCCTGTGGGCGGCCTGT ATGAGATCCAGATCCCAAGCGAGTTCACCATCGGCAACATGGAGGAGTTTATCC AGACATCTAGCCCAAAGGTGACCATCGACTGCGCAGCCTTCGTGTGCGGCGATT ATGCCGCCTGCAAGTCTCAGCTGGTGGAGTACGGCAGCTTTTGTGATAATATCAA CGCCATCCTGACCGAAGTGAATGAGCTGCTGGACACCACACAGCTGCAGGTGG CCAATAGCCTGATGAACGGCGTGACCCTGTCCACAAAGCTGAAGGACGGCGTGA ATTTCAACGTGGACGATATCAACTTTTCCTCTGTGCTGGGCTGCCTGGGCTCCGA GTGTTCTAAGGCAAGCTCCCGGAGCGCCATCGAGGACCTGCTGTTCGATAAGGT GAAGCTGTCCGATGTGGGCTTTGTGGCCGCCTATAACAATTGCACCGGCGGCGC CGAGATCAGAGACCTGATCTGCGTGCAGAGCTACAAGGGCATCAAGGTGCTGCC CCCTCTGCTGAGCGAGAACCAGATCTCCGGCTATACACTGGCAGCCACCAGCGC CTCCCTGTTCCCACCATGGACAGCAGCAGCAGGCGTGCCCTTTTATCTGAATGT GCAGTACCGCATCAACGGCCTGGGCGTGACCATGGACGTGCTGTCCCAGAATCA GAAGCTGATCGCCAACGCCTTCAACAATGCCCTGGACGCCATCCAGGAGGGCTT TGATGCCACCAATAGCGCCCTGGTGAAGATCCAGGCCGTGGTGAATGCCAACGC CGAGGCCCTGAACAATCTGCTGCAGCAGCTGTCCAACCGGTTCGGCGCCATCTC TAGCTCCCTGCAGGAGATCCTGTCTAGACTGGACCCTCCAGAGGCCGAGGCCCA GATCGATAGGCTGATCAATGGCCGCCTGACAGCCCTGAACGCCTACGTGAGCCA GCAGCTGTCTGATAGCACCCTGGTGAAGTTCTCCGCCGCCCAGGCCATGGAGAA AGTGAATGAGTGCGTGAAGTCTCAGTCTAGCCGGATCAACTTTTGTGGCAATGG CAACCACATCATCAGCCTGGTGCAGAACGCCCCATATGGCCTGTACTTTATCCAC TTCTCTTATGTGCCCACAAAGTACGTGACCGCCAAGGTGAGCCCTGGACTGTGC ATCGCAGGCGACAGAGGAATCGCACCAAAGAGCGGCTATTTCGTGAATGTGAAC AATACATGGATGTACACCGGCTCCGGCTACTATTACCCCGAGCCTATCACCGAG AACAATGTGGTGGTCATGTCCACATGTGCCGTGAACTATACCAAGGCCCCCTAC GTGATGCTGAATACCTCTACACCTAACCTGCCAGACTTCAGGGAGGAGCTGGAT CAGTGGTTTAAGAATCAGACAAGCGTGGCCCCTGACCTGTCCCTGGATTACATCA ACGTGACCTTTCTGGACCTGCAGGTGGAGATGAATCGCCTGCAGGAGGCCATCA AGGTGCTGAACGGATCCGGATACATCCCCGAGGCCCCCAGAGATGGCCAGGCC TACGTGCGGAAGGACGGCGAGTGGGTACTGCTGAGCACATTCCTGGGCAGATC CCTGGAGGTGCTGTTCCAGGGCCCAGGCCATCACCACCATCACCACCATCATAG CGCCTGGTCCCACCCCCAGTTCGAGAAGGGCGGCGGTAGTGGAGGGGGCGGA TCTGGCGGCTCAGCTTGGAGCCACCCCCAGTTCGAAAAGTGA
WIV-1 (S-2P)	ATGAAACTGCTGGTGCTGGTCTTTGCCACACTGGTCTCATCCTACACTATTGAAA AATGCCTGGACTTTGACGACAGAACTCCCCCCGCCAACACCCAGTTTCTGAGCT CCCACCGGGGCGTGTACTATCCAGACGATATCTTCAGATCCAACGTGCTGCACC TGGTGCAGGATCACTTCCTGCCCTTTGACTCTAATGTGACAAGATTCATCACCTTT GGCCTGAATTTCGACAACCCTATCATCCCATTCAAGGATGGCATCTACTTTGCCG CCACAGAGAAGTCTAACGTGATCCGGGGCTGGGTGTTTGGCAGCACCATGAACA ATAAGTCTCAGAGCGTGATCATCATGAACAATAGCACCAACCTGGTCATCAGAGC CTGCAATTTCGAGCTGTGCGACAACCCCTTCTTTGTGGTGCTGAAGTCCAACAAT ACACAGATCCCTTCTTATATCTTTAACAATGCCTTCAACTGCACCTTTGAGTACGT GAGCAAAGACTTCAACCTGGACCTGGGCGAGAAGCCAGGCAACTTCAAGGACCT GCGGGAGTTCGTGTTTAGAAACAAGGATGGCTTCCTGCACGTGTATTCCGGCTA CCAGCCAATCTCCGCCGCATCTGGCCTGCCAACAGGCTTCAATGCCCTGAAGCC

	CATCTTTAAGCTGCCTCTGGGCATCAATATCACCAACTTCAGGACACTGCTGACC GCATTTCCACCTCGCCCCGACTATTGGGGCACAAGCGCCGCAGCCTATTTCGTG GGCTACCTGAAGCCTACCACCTTCATGCTGAAGTACGATGAGAACGGCACAATC ACCGACGCCGTGGATTGCTCCCAGAATCCTCTGGCCGAGCTGAAGTGTAGCGTG AAGTCCTTTGAGATCGACAAGGGCATCTATCAGACCAGCAACTTTCGGGTGGCC CCATCCAAGGAGGTGGTGAGATTCCCTAATATCACAAACCTGTGCCCATTCGGC GAGGTGTTTAATGCCACCACATTCCCCAGCGTGTACGCCTGGGAGCGGAAGAGA ATCTCTAACTGCGTGGCCGATTATAGCGTGCTGTACAATTCCACATCTTTCAGCA CCTTTAAGTGCTATGGCGTGTCCGCCACCAAGCTGAATGACCTGTGCTTCTCTAA CGTGTACGCCGATAGCTTTGTGGTGAAGGGCGACGATGTGAGGCAGATCGCAC CTGGACAGACCGGCGTGATCGCAGACTACAACTATAAGCTGCCAGACGATTTCA CAGGCTGCGTGCTGGCCTGGAATACCCGCAACATCGATGCCACACAGACCGGC AACTACAATTATAAGTACAGGAGCCTGAGGCACGGCAAGCTGAGGCCTTTCGAG CGCGACATCTCCAACGTGCCCTTTTCTCCTGATGGCAAGCCTTGCACCCCACCC GCCTTTAATTGTTACTGGCCACTGAACGACTATGGCTTCTACATCACAAATGGCA TCGGCTATCAGCCATACAGGGTGGTGGTGCTGAGCTTCGAGCTGCTGAACGCAC CAGCAACAGTGTGCGGACCAAAGCTGTCCACCGATCTGATCAAGAATCAGTGCG TGAACTTCAACTTCAACGGCCTGACAGGCACCGGCGTGCTGACCCCCTCTAGCA AGAGGTTCCAGCCTTTTCAGCAGTTCGGCCGCGACGTGAGCGATTTCACAGACT CCGTGCGCGACCCTAAGACCTCCGAGATCCTGGATATCTCTCCATGCAGCTTTG GCGGCGTGTCTGTGATCACCCCCGGCACAAACACCTCCTCTGAGGTGGCCGTG CTGTACCAGGATGTGAATTGTACAGACGTGCCAGTGGCAATCCACGCAGACCAG CTGACCCCTTCTTGGCGGGTGCACAGCACAGGCAACAACGTGTTCCAGACCCAG GCAGGATGCCTGATCGGAGCAGAGCACGTGGATACCAGCTATGAGTGCGACATC CCTATCGGCGCCGGCATCTGTGCCTCCTACCACACAGTGAGCTCCCTGAGATCC ACCTCTCAGAAGTCCATCGTGGCCTATACCATGTCTCTGGGCGCCGATTCTAGCA TCGCCTACAGCAACAATACAATCGCCATCCCAACCAACTTTAGCATCTCCATCAC CACAGAAGTGATGCCCGTGTCCATGGCCAAGACATCTGTGGACTGCAACATGTA TATCTGTGGCGATTCCACCGAGTGCGCCAATCTGCTGCTGCAGTACGGCTCCTT CTGTACACAGCTGAACAGGGCCCTGTCTGGAATCGCAGTGGAGCAGGACCGGA ATACCAGAGAGGTGTTCGCCCAGGTGAAGCAGATGTACAAGACACCTACCCTGA AGGACTTTGGCGGCTTCAACTTTTCTCAGATCCTGCCAGATCCCCTGAAGCCAAC AAAGCGGAGCTTCATCGAGGACCTGCTGTTTAATAAGGTGACCCTGGCCGATGC CGGCTTCATGAAGCAGTATGGCGAGTGCCTGGGCGATATCAACGCCCGGGACC TGATCTGTGCCCAGAAGTTTAATGGCCTGACAGTGCTGCCTCCACTGCTGACCG ACGATATGATCGCAGCATACACAGCCGCCCTGGTGAGCGGCACAGCAACCGCA GGATGGACCTTTGGCGCAGGAGCCGCCCTGCAGATCCCCTTCGCCATGCAGAT GGCCTATCGGTTTAACGGCATCGGCGTGACCCAGAATGTGCTGTACGAGAACCA GAAGCAGATCGCCAATCAGTTCAACAAGGCCATCAGCCAGATCCAGGAGTCCCT GACCACAACCTCTACCGCCCTGGGCAAGCTGCAGGACGTGGTGAATCAGAACG CCCAGGCCCTGAATACACTGGTGAAGCAGCTGTCCTCTAACTTCGGCGCCATCA GCTCCGTGCTGAATGATATCCTGTCCAGACTGGACCCCCCTGAGGCAGAGGTGC AGATCGATAGGCTGATCACCGGCCGCCTGCAGTCTCTGCAGACATATGTGACCC AGCAGCTGATCAGGGCAGCAGAGATCAGAGCAAGCGCCAACCTGGCCGCCACA AAGATGAGCGAGTGCGTGCTGGGCCAGTCCAAGAGGGTGGACTTCTGTGGCAA GGGCTATCACCTGATGTCCTTTCCTCAGGCAGCACCACACGGAGTGGTGTTCCT GCACGTGACCTACGTGCCATCTCAGGAGCGCAACTTTACAACCGCACCAGCAAT CTGCCACGAGGGCAAGGCCTACTTCCCCAGGGAGGGCGTGTTCGTGTTTAACG GCACAAGCTGGTTTATCACCCAGCGCAATTTCTTTTCCCCTCAGATCATCACAAC CGACAATACATTCGTGTCTGGCAGCTGTGACGTGGTCATCGGCATCATCAACAAT ACCGTGTATGATCCACTGCAGCCCGAGCTGGACTCTTTCAAGGAGGAGCTGGAT AAGTACTTTAAGAACCACACCAGCCCCGACGTGGATCTGGGCGACATCAGCGGC ATCAATGCCTCCGTGGTGAACATCCAGAAGGAGATCGATCGCCTGAATGAGGTG GCTAAGAACCTGAATGAGTCTCTGATTGACCTGCAGGAACTGGGCAAGTATGAA CAGGGATCCGGATACATCCCCGAGGCCCCCAGAGATGGCCAGGCCTACGTGCG GAAGGACGGCGAGTGGGTACTGCTGAGCACATTCCTGGGCAGATCCCTGGAGG

	TGCTGTTCCAGGGCCCAGGCCATCACCACCATCACCACCATCATAGCGCCTGGT CCCACCCCCAGTTCGAGAAGGGCGGCGGTAGTGGAGGGGGCGGATCTGGCGG CTCAGCTTGGAGCCACCCCCAGTTCGAAAAGTGA
FcαR	GAATTCGCCACCATGGACCCCAAGCAGACCACCCTGCTGTGCCTGGTGCTGTGT CTGGGCCAGAGAATCCAGGCCCAGGAAGGCGACTTCCCCATGCCCTTCATCAGC GCCAAGAGCAGCCCCGTGATCCCCCTGGATGGCAGCGTGAAGATCCAGTGCCA GGCCATCAGAGAGGCCTACCTGACCCAGCTGATGATCATTAAGAACAGCACCTA CCGCGAGATCGGCAGACGGCTGAAGTTCTGGAACGAGACAGACCCCGAGTTCG TGATCGACCACATGGACGCCAACAAGGCCGGCAGATACCAGTGTCAGTACCGGA TCGGCCACTACCGGTTCCGGTACAGCGACACCCTGGAACTGGTCGTGACCGGC CTGTACGGCAAGCCTTTCCTGAGCGCCGATCGGGGACTGGTGCTGATGCCCGG CGAGAACATCAGCCTGACCTGTAGCAGCGCCCACATCCCCTTCGACAGATTCAG CCTGGCCAAAGAGGGCGAGCTGAGCCTGCCTCAGCATCAGTCTGGCGAGCACC CCGCCAACTTTAGCCTGGGCCCTGTGGACCTGAACGTGTCCGGCATCTACCGGT GCTACGGCTGGTACAACCGGTCCCCCTACCTGTGGTCCTTCCCCAGCAACGCTC TGGAACTGGTCGTGACAGACAGCATCCACCAGGACTACACCACCCAGAATGGCG GCGGAGGATCTGGCGGAGGCGGAAGTGGCGGAGGGGGCTCTGGACTGAACGA CATCTTCGAGGCCCAGAAAATCGAGTGGCACGAGCACCACCACCATCACCACTG ACTCGAG
Fusion peptide	LCBiot-SKPSKRSFIEDLLFNKVTLADAGFIKQYGD

Supplementary Table 4. Sample Dilutions in the Fc Array Assay

Sample Type	Dilution	Detection Reagent
Serum	1:5000	anti-human IgG, FcγR2A, FcγR2B, FcγR3A, FcγR3B
Serum	1:1000	anti-human IgG1
Serum	1:250	anti-human IgA, anti-human IgA1, anti-human IgA2, anti-human IgD, anti-human IgM, anti-human IgG2 anti-human IgG3, anti-human IgG4, FcαR
Nasal	1:10	All detections
Stool	1:10	All detections