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Supplemental information

**A pseudovirus system enables deep mutational
scanning of the full SARS-CoV-2 spike**

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Supplementary table 1

Name	Sequence 5'-3'	Function	
<i>Mutagenesis primers</i>			
BA.1 oPools	https://github.com/dms-vep/SARS-CoV-2_Omicron_BA.1_spike_DMS_mAbs/tree/main/library_design	Primers to add mutations to BA.1 spike	
Delta oPools	https://github.com/dms-vep/SARS-CoV-2_Delta_spike_DMS_REGN10933/tree/main/library_design/results	Primers to add mutations to Delta spike	
<i>Spike amplification and joining PCR</i>			
VEP_amp_for	CAGCCGAGCCACATCGCTC	For amplifying spike with flanking	
3'rev_lib_LinJoin_KHDC	CGGAAGAGCGTCGTGTAGGGAAAG	sequences from lentivirus backbone	
<i>Spike barcoding primers</i>			
ForInd_AddBC_2	gcggaactccactaggaacatttctctctcgaaTCTAGANNNNNNNNNNNNNNAGATCGGAAGAGCGTCGTGTAGGGAAAGAG	For adding barcodes to spike gene	
5'for_lib_bcing	gcacgcgCAGCCGAGCCACATCGCTCA		
<i>Neutralization standard barcoding primers</i>			
5'for_lib_bcing	gcacgcgCAGCCGAGCCACATCGCTCA	For barcoding neutralization standard	
Barcoding primer pool 1: VSVG_BC1 VSVG_BC2 VSVG_BC3 VSVG_BC4	gcggaactccactaggaacatttctctctcgaaTCTAGAtactttactactgcacAGATCGGAAGAGCGTCGTGTAGGGAAAGAG gcggaactccactaggaacatttctctctcgaaTCTAGAggaccattgacgagtaAGATCGGAAGAGCGTCGTGTAGGGAAAGAG gcggaactccactaggaacatttctctctcgaaTCTAGAcctagccactagatggAGATCGGAAGAGCGTCGTGTAGGGAAAGAG gcggaactccactaggaacatttctctctcgaaTCTAGAatggaggagtactAGATCGGAAGAGCGTCGTGTAGGGAAAGAG		
Barcoding primer pool 2 VSVG_BC5 VSVG_BC6 VSVG_BC7 VSVG_BC8	gcggaactccactaggaacatttctctctcgaaTCTAGAtagttaaacgccagAGATCGGAAGAGCGTCGTGTAGGGAAAGAG gcggaactccactaggaacatttctctctcgaaTCTAGAccaacgcgtgaatcgcAGATCGGAAGAGCGTCGTGTAGGGAAAGAG gcggaactccactaggaacatttctctctcgaaTCTAGAatcgtatccatggtaAGATCGGAAGAGCGTCGTGTAGGGAAAGAG gcggaactccactaggaacatttctctctcgaaTCTAGAggtcacgtgtctatatAGATCGGAAGAGCGTCGTGTAGGGAAAGAG		
<i>Spike gene amplification for PacBio long-read sequencing</i>			
PacBio_5pri_C_tag1	ctagccattcagagGCAGCCGAGCCACcTCGCTC		Used for amplifying spike and barcode for
PacBio_3pri_G_tag1	CGCTCAACCAGTACGAGCCGTAAGTTATGTAACGCGGAAGTCCACgAGGAAC		

PacBio_5pri_G_tag2	ctagccattcagagGCAGCCGAGCCACgTCGCTC	PacBio sequencing
PacBio_3pri_C_tag2	CGCTCAACCAGTACGAGCCGTAAGTTATGTAACGCGGAACTCCACcAGGAAC	
PacBio_5pri_RND2	CTAGCCATTcAGAGGCAGCCGAG	
PacBio_3pri_RND2	CGCTCAACCAGTACGAGCCGTAAGTTATGTAAC	
<i>Illumina barcode sequencing 1st round PCR primers</i>		
IlluminaRnd1_For	CTCTTCCCTACACGACGCTCTTCCGATCT	Round 1 primers for barcode sequencing
IlluminaRnd1_Rev3	CTGGAGTTCAGACGTGTGCTCTTCCGATCTgtccctattggcgttactatgggaacatacgtc	
<i>Illumina barcode sequencing library round 2 PCR primers</i>		
Rnd2ForUniversal	AATGATACGGCGACCACCGAGATCTACACTCTTCCCTACACGACGCTCTTCCGATCT	Universal illumina primer and indexing primer, where xxxxxxx indicates i7 index sequence
Indexing primer	CAAGCAGAAGACGGCATAcGAGATxxxxxxxGTGACTGGAGTTCAGACGTGTGCTCTTCCGATCT	