

Table S2. Peptide lists and their HLA binding *in silico* prediction.

Table S2a. List of amino acid residues spanning distinct structural and non-structural proteins.

red letters = mutations

blue letters = amino acid that differs from RefSeq

Peptide pools name	Peptide sequence	Virus	Protein	RefSeq ID (NCBI)	SARS-CoV-2 first position	SARS-CoV-2 last position
PEP _{Orf}	SASFSTFKCYGVSP	SARS-CoV-2	Spike	YP_009724390.1	371	385
PEP _{Orf}	YKLPDDFTGCVIAWN	SARS-CoV-2	Spike	YP_009724390.1	423	437
PEP _{Orf}	NNLDSKVGGNYNYLY	SARS-CoV-2	Spike	YP_009724390.1	439	453
PEP _{Orf}	SKVGGNYNYLYRLFR	SARS-CoV-2	Spike	YP_009724390.1	443	457
PEP _{Orf}	YLRLFRKSNLKPFE	SARS-CoV-2	Spike	YP_009724390.1	451	465
PEP _{Orf}	SNLKPFRDIDSTEIY	SARS-CoV-2	Spike	YP_009724390.1	459	473
PEP _{Orf}	CTFEYVSPQLMDLE	SARS-CoV-2	Spike	YP_009724390.1	166	180
PEP _{Orf}	NIDGYFKIYSKHTPI	SARS-CoV-2	Spike	YP_009724390.1	196	210
PEP _{Orf}	LMDLEGKQGNFKNLR	SARS-CoV-2	Spike	YP_009724390.1	176	190
PEP _{Orf}	NFSQILPDPSKPSKR	SARS-CoV-2	Spike	YP_009724390.1	801	815
PEP _{Orf}	NLLQYGSFCTQLNR	SARS-CoV-2	Spike	YP_009724390.1	751	765
PEP _{Orf}	LLWPVTLACFVLAHV	SARS-CoV-2	Membrane	YP_009724393.1	56	70
PEP _{Orf}	CLVGLMWLSYFIASF	SARS-CoV-2	Membrane	YP_009724393.1	85	99
PEP _{Orf}	RGHLRIAGHHLGRCD	SARS-CoV-2	Membrane	YP_009724393.1	146	160
PEP _{Orf}	YRINHWITGGIAIAMA	SARS-CoV-2	Membrane	YP_009724393.1	71	85
PEP _{Orf}	KEITVATSRTLSSYYK	SARS-CoV-2	Membrane	YP_009724393.1	166	180
PEP _{Orf}	LLESELVIGAVILRG	SARS-CoV-2	Membrane	YP_009724393.1	133	147
PEP _{Orf}	PSGTWLTYTGAIKLD	SARS-CoV-2	Nucleocapsid	YP_009724397.2	326	340
PEP _w RBD	CVADYSVLYNSASF	SARS-CoV-2	Spike	YP_009724390.1	361	375
PEP _w RBD	TFKCYGVSP	SARS-CoV-2	Spike	YP_009724390.1	376	390
PEP _w RBD	CFTNVYADSFVIRGD	SARS-CoV-2	Spike	YP_009724390.1	391	405
PEP _w RBD	EVQRQIAPGQTGKIAD	SARS-CoV-2	Spike	YP_009724390.1	406	420
PEP _w RBD	YNYKLPDDFTGCVIA	SARS-CoV-2	Spike	YP_009724390.1	421	435
PEP _w RBD	WNSNNLDSKVGGNYN	SARS-CoV-2	Spike	YP_009724390.1	436	450
PEP _w RBD	YLRLFRKSNLKPFE	SARS-CoV-2	Spike	YP_009724390.1	451	465
PEP _w RBD	RDISTEIQAGSTPC	SARS-CoV-2	Spike	YP_009724390.1	466	480
PEP _w RBD	NGVEGFNCYFPLQSY	SARS-CoV-2	Spike	YP_009724390.1	481	495
PEP _w RBD	GFQPTNVGVGYQPYRV	SARS-CoV-2	Spike	YP_009724390.1	496	510
PEP _w RBD	VVLSFELLHAPATVC	SARS-CoV-2	Spike	YP_009724390.1	511	525
PEP _{mut} RBD	CVADYSVFLYNASF	SARS-CoV-2	Spike	YP_009724390.1	361	375
PEP _{mut} RBD	EVQRQIAPGQTGNIA	SARS-CoV-2	Spike	YP_009724390.1	406	420
PEP _{mut} RBD	EVQRQIAPGQTGTIA	SARS-CoV-2	Spike	YP_009724390.1	406	420
PEP _{mut} RBD	WNSKNNLDSKVGGNYN	SARS-CoV-2	Spike	YP_009724390.1	436	450
PEP _{mut} RBD	WNSNNKLDISKVGGNYN	SARS-CoV-2	Spike	YP_009724390.1	436	450
PEP _{mut} RBD	YRRLFRKSNLKPFE	SARS-CoV-2	Spike	YP_009724390.1	451	465
PEP _{mut} RBD	RDISTEIQVGSTPC	SARS-CoV-2	Spike	YP_009724390.1	466	480
PEP _{mut} RBD	RDISTEIQAGNTPC	SARS-CoV-2	Spike	YP_009724390.1	466	480
PEP _{mut} RBD	RDISTEIQAGSKPC	SARS-CoV-2	Spike	YP_009724390.1	466	480
PEP _{mut} RBD	NGAEGFNCYFPLQSY	SARS-CoV-2	Spike	YP_009724390.1	481	495
PEP _{mut} RBD	NGVKGFNCYFPLQSY	SARS-CoV-2	Spike	YP_009724390.1	481	495
PEP _{mut} RBD	NGVQGFNCYFPLQSY	SARS-CoV-2	Spike	YP_009724390.1	481	495
PEP _{mut} RBD	NGVEGFNCYFPLRSY	SARS-CoV-2	Spike	YP_009724390.1	481	495
PEP _{mut} RBD	GFQPTYGVGYQPYRV	SARS-CoV-2	Spike	YP_009724390.1	496	510
PEP _{Om} RBD	NITNLCPFDEVFNAT	SARS-CoV-2	Spike	YP_009724390.1	331	345
PEP _{Om} RBD	CVADYSVLYNLAPFF	SARS-CoV-2	Spike	YP_009724390.1	361	375
PEP _{Om} RBD	EVQRQIAPGQTGNIA	SARS-CoV-2	Spike	YP_009724390.1	406	420
PEP _{Om} RBD	RDISTEIQAGSKPC	SARS-CoV-2	Spike	YP_009724390.1	466	480
PEP _{Om} RBD	NGVEGFNCYFPLRSY	SARS-CoV-2	Spike	YP_009724390.1	481	495
PEP _{Om} RBD	SFRPTYGVGHQPYRV	SARS-CoV-2	Spike	YP_009724390.1	496	510
PEP _n sp	TMSNYQHEETIYNLV	SARS-CoV-2	NSP12	YP_009725307.1	76	90
PEP _n sp	IYNLVKDCPAVAVHD	SARS-CoV-2	NSP12	YP_009725307.1	86	100
PEP _n sp	RQRLTKYTMADLVYA	SARS-CoV-2	NSP12	YP_009725307.1	116	130
PEP _n sp	KYTMADLVYALRHFD	SARS-CoV-2	NSP12	YP_009725307.1	121	135
PEP _n sp	DWYDFVENPDILRVY	SARS-CoV-2	NSP12	YP_009725307.1	161	175
PEP _n sp	SYSSLMPILTLTRA	SARS-CoV-2	NSP12	YP_009725307.1	236	250
PEP _n sp	CLDDRCILHCANFNV	SARS-CoV-2	NSP12	YP_009725307.1	301	315
PEP _n sp	RKIFVDGVFPVVSTG	SARS-CoV-2	NSP12	YP_009725307.1	331	345
PEP _n sp	LHSSRLSFKELLVYA	SARS-CoV-2	NSP12	YP_009725307.1	361	375
PEP _n sp	LSFKELLYAADPAM	SARS-CoV-2	NSP12	YP_009725307.1	366	380
PEP _n sp	MPNMLRIMASVLVAR	SARS-CoV-2	NSP12	YP_009725307.1	626	640
PEP _n sp	CNLSHRFYRLANECA	SARS-CoV-2	NSP12	YP_009725307.1	646	660
PEP _n sp	RFYRLANECAQVLSE	SARS-CoV-2	NSP12	YP_009725307.1	651	665
PEP _n sp	QVLSEMVMCGGSLYV	SARS-CoV-2	NSP12	YP_009725307.1	661	675
PEP _n sp	DVDHEFVDFEYAYLR	SARS-CoV-2	NSP12	YP_009725307.1	736	750
PEP _n sp	HTMLVKQGGDYVYLP	SARS-CoV-2	NSP12	YP_009725307.1	816	830
PEP _n sp	YVYLPYPDP	SARS-CoV-2	NSP12	YP_009725307.1	826	840
PEP _n sp	DIVKTDGTLMIERFV	SARS-CoV-2	NSP12	YP_009725307.1	846	860
PEP _n sp	DVKTLMIERFVSLAID	SARS-CoV-2	NSP12	YP_009725307.1	851	865