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Supplemental Information

Targets of T Cell Responses to SARS-CoV-2

Coronavirus in Humans with COVID-19

Disease and Unexposed Individuals

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Table S1. Protein peptide pools (related to Figure 6)

	Protein Name	# of peptides
	M	43
	N	82
	S	253
	E	13
ORFs	ORF3a	53
	ORF7a	23
	ORF6	11
	ORF8	23
Nonstructural proteins	nsp1	36
	nsp2	127
	nsp3_part1	194
	nsp3_part2	194
	nsp4	100
	nsp5	61
	nsp6	58
	nsp7	17
	nsp8/9/10	91
	nsp12	186
	nsp13	120
	nsp14	105
	nsp15	70
	nsp16	50
	ORF10	6
	total	1916

Table S2. Immune cell lineage and phenotyping panel (related to Figure 1)

Marker-Fluorophore	Clone	Vendor	Catalog #
KI67-FITC	B56	BD	556026
CD4-percp efluor710	SK3	Invitrogen	46-0047-42
Gzm B- af647	GB11	Biolegend	515406
IgM- af700	MHM-88	Biolegend	314538
CD27-APCcy7	O323	Biolegend	302816
IgD- PE	IA6-2	BD	555779
CD56- PE Dazzle	HCD56	Biolegend	318348
CD19 PE-Cy5	H1B19	Biolegend	302210
CD38- PECy7	HIT2	Invitrogen	25-0389-42
CXCR5-bv421	J252D4	Biolegend	356920
CD14- bv510	63D3	Biolegend	367123
CD45RA- bv570	HI100	Biolegend	304132
CXCR3- bv605	G025H7	Biolegend	353728
CD20- bv650	2H7	Biolegend	302336
CCR7-bv711	G043H7	Biolegend	353228
PD-1-bv786	EH12.2H7	Biolegend	329930
CD3- buv395	UCHT1	BD	563546
Zombie UV	N/A	Biolegend	423108
CCR6-buv496	11A9	BD	612948
CD16-buv737	3G8	BD	612786
CD8- buv805	SK1	BD	612889

Table S3. Known annotated coronavirus T cell epitopes (related to Figure 6)

Antigen	No. of coronavirus epitopes (% total)	
	CD4	CD8
Spike glycoprotein	77 (62%)	65 (50%)
Nucleoprotein	34 (27%)	46 (36%)
Membrane protein	6 (5%)	6 (5%)
Orf1ab	2 (2%)	9 (7%)
Orf3a	5 (4%)	2 (2%)
Envelope protein	0 (0%)	1 (1%)
Total	124	129

Table S4. AIM antibody panel (related to Figures 2,3 and 6)

Antibody	Fluorochrome	Clone/vendor/catalog	Amount per well
CD14-CD19- Live/Dead	V500	M5E2/BD/561391 - HIB19/BD/561121	2 each- 0.5
CD4	BV605	FN50/BD/562989	3
CD8	BV650	RPA-T8/BioLegend/301042	2
CD69	PE-CF594	FN50/BD/562617	2
OX40	PE-Cy7	Ber-ACT35/Biolegend/350012	2
CD137	APC	4B4-1/BioLegend/309810	2
CD3	AF700	OKT3/Biolegend/317340	2

Table S5. ICS antibody panel (related to Figure 3)

Antibody	Fluorochrome	Clone/vendor/catalog	Amount per well
CD45RA	BV421	G043H7/BioLegend/	3
CD14-CD19- Live/Dead	V500	M5E2/BD/561391 - HIB19/BD/561121	2 each- 0.5
CD4	BV605	FN50/BD/562989	3
CD8	BV650	RPA-T8/BioLegend/301042	2
IFN γ	PerCP Cy5.5	4S.B3/eBioscience/45-7319-42	4
Granzyme B	PE-CF594	GB11/BD/562462	3
TNF α	PeCy7	Mab11/eBioscience/25-7349-82	1
IL-10	APC	JES3-19F1/BioLegend/506807	5
CD3	AF700	OKT3/Biolegend/317340	2
CCR7	APC ef780	3D12/eBioscience/47-1979-42	5