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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| Protein Name | # of peptides |
|--------------|--------------|
| M            | 43           |
| N            | 82           |
| S            | 253          |
| E            | 13           |

**ORFs**

| Protein Name | # of peptides |
|--------------|--------------|
| ORF3a        | 53           |
| ORF7a        | 23           |
| ORF6         | 11           |
| ORF8         | 23           |

**Nonstructural proteins**

| Protein Name | # of peptides |
|--------------|--------------|
| 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-percpefluor710 | 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        | HIB19 | 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- bv395         | UCHT1 | BD     | 563546    |
| Zombie UV          | N/A   | Biolegend | 423108    |
| CCR6-bv496         | 11A9  | BD     | 612948    |
| CD16-bv737         | 3G8   | BD     | 612786    |
| CD8- bv805         | 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               |
| 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               |
| IFNγ           | PerCP Cy5.5  | 4S.B3/eBioscience/45-7319-42         | 4               |
| Granzyme B     | PE-CF594     | GB11/BD/562462                       | 3               |
| TNFα           | 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               |