

## Supplementary Materials

### Pre-COVID-19 *ex vivo* cross-reactive IFN- $\gamma$ cellular response to SARS-CoV-2 spike overlapping peptides is more prevalent among Kenyan compared to Swedish adults

#### Authors

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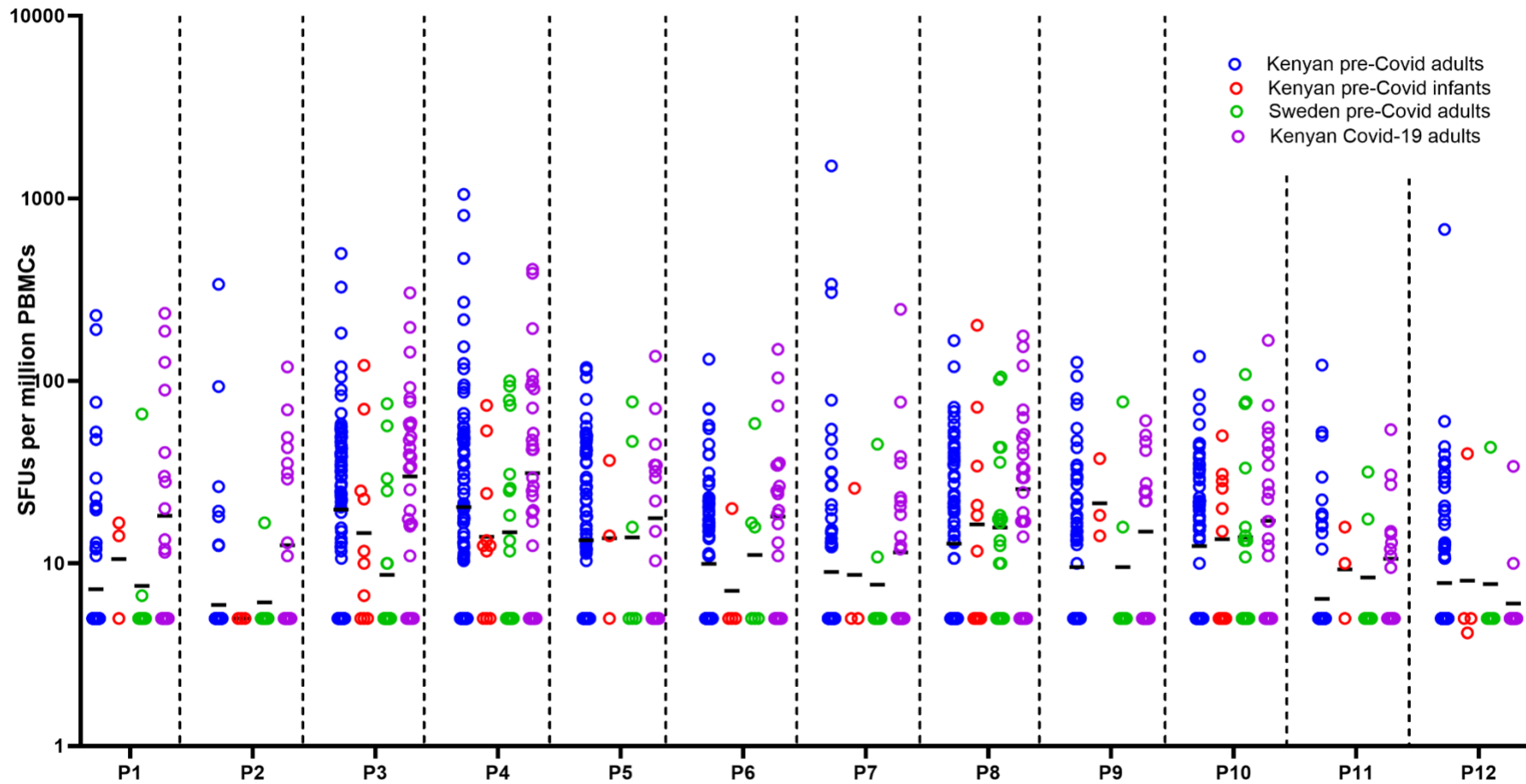
†These authors contributed equally.

**Table S1. Participants tested for each peptide**

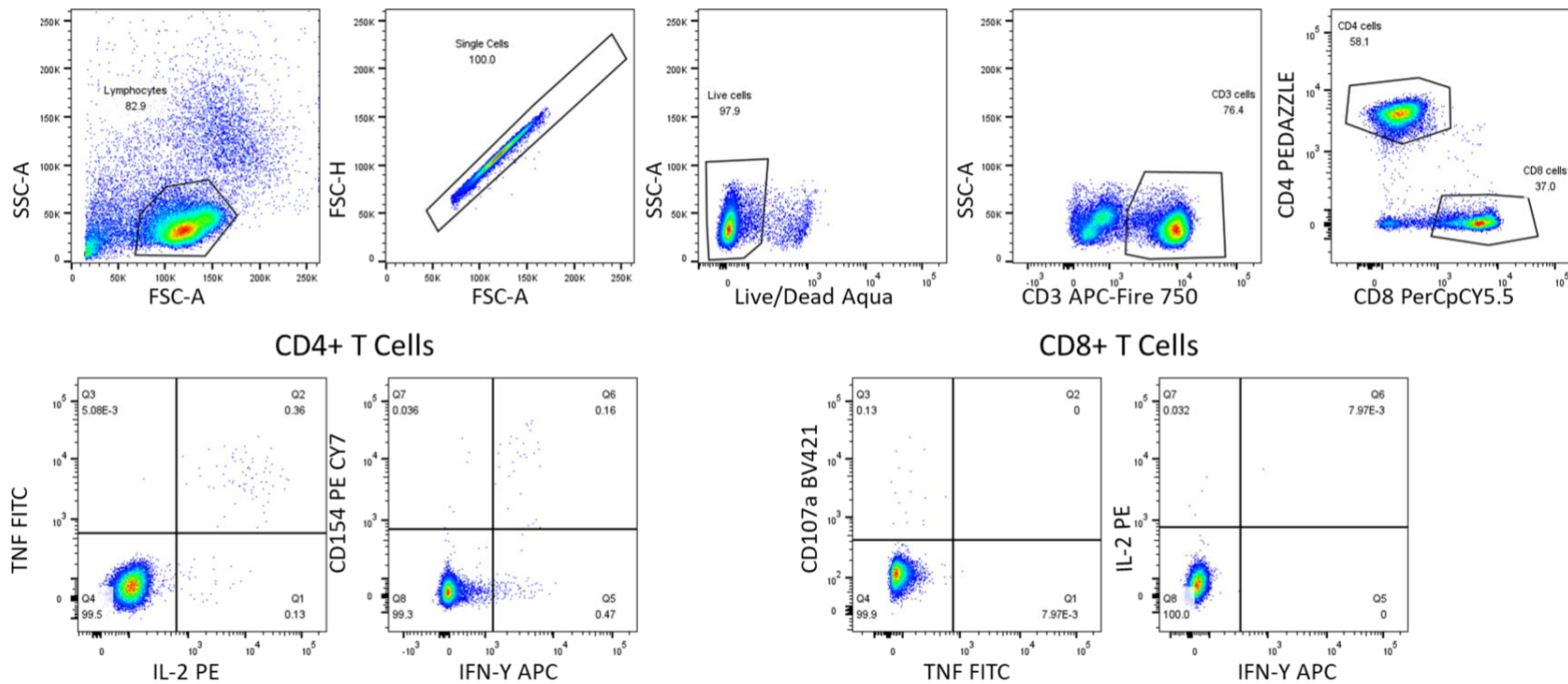
Group	Tested												All participants	
	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12		
Kenyan pre-COVID-19 adults	79	79	79	79	78	79	79	79	79	79	79	79	79	<b>79</b>
Kenyan pre-COVID-19 infants	3	3	10	10	3	10	3	10	3	10	3	4	<b>10</b>	
Swedish pre-COVID-19 adults	7	6	18	18	6	18	7	18	6	15	6	5	<b>18</b>	
Kenyan COVID-19 adults	18	19	37	36	15	37	23	33	17	31	15	14	<b>37</b>	

**Table S2. Participant demographic and clinical characteristics†.**

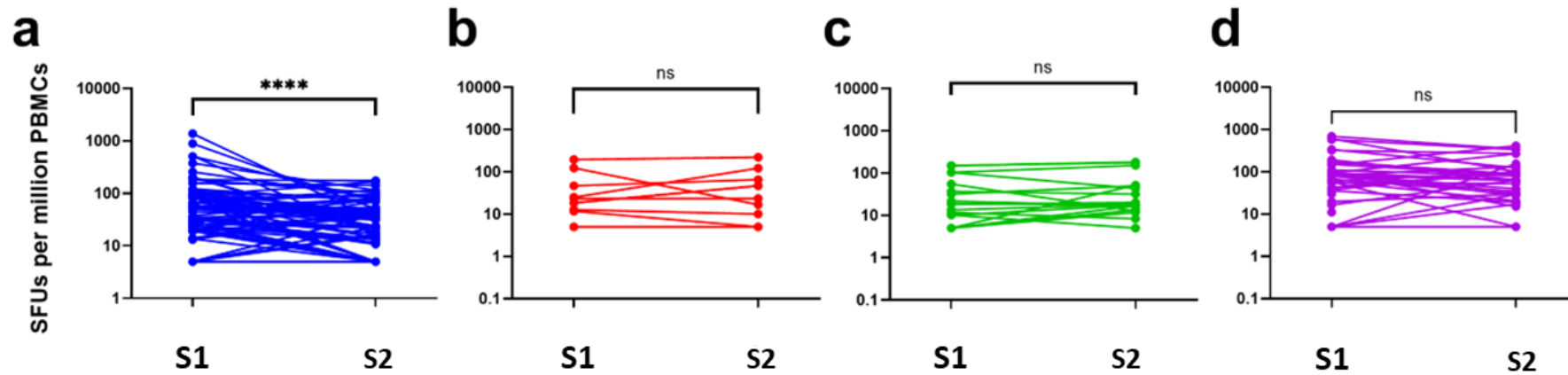
<b>Characteristic</b>	<b>Kenyan pre-COVID-19 adults (n = 79)</b>	<b>Kenyan pre-COVID-19 infants (n = 10)</b>	<b>Swedish pre-COVID-19 adults (n = 18)</b>	<b>Kenyan COVID-19 adults (n = 37)</b>
<b>Median age (IQR), years</b>	31 (24, 40)	0.75 (0.58, 0.83)	33 (31, 41)	43 (34, 55)
<b>Missing age</b>	15	0	8	12
<b>Sex</b>				
<b>Female</b>	45 (57%)	5 (50%)	5 (28%)	17 (46%)
<b>Male</b>	23 (29%)	5 (50%)	1 (5%)	18 (49%)
<b>Missing (sex)</b>	11 (14%)	0	12 (67%)	2 (5%)
†Data are median (IQR) or number (%).				



**Figure S1. Frequencies of IFN-gamma secreting cell responses to individual but overlapping SARS-CoV-2 Spike peptides pools (P1-P12).** Black line shows Geometric mean



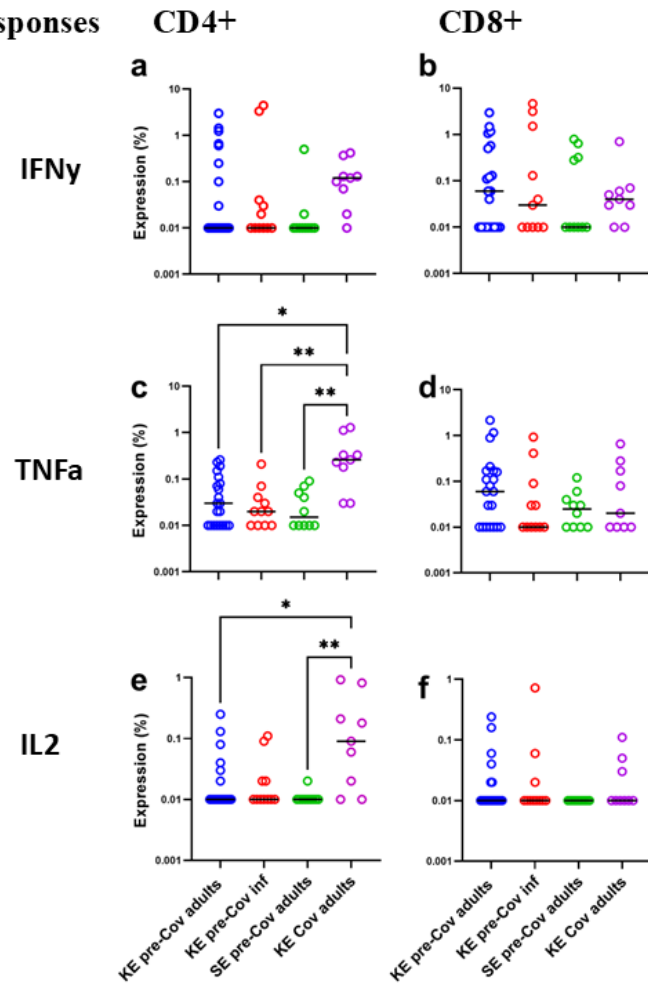
**Figure S2. ICS gating strategy.**



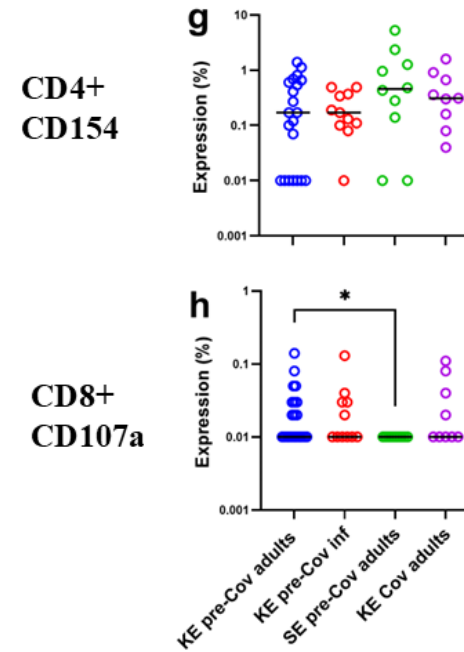
**Figure S3. Interindividual variability of IFN-gamma secreting cell frequencies between SARS-CoV-2 Spike regions S1 and S2.**

**a** Kenyan pre-COVID-19 adults samples, **b** Kenyan Pre-COVID-19 infants samples, **c** Sweden Pre-COVID-19 adults samples and **d** Kenyan COVID-19 adult patient samples. Comparisons were done using Wilcoxon matched pairs signed rank test. \*\*\*\*P < 0.0001

a) Cytokine responses



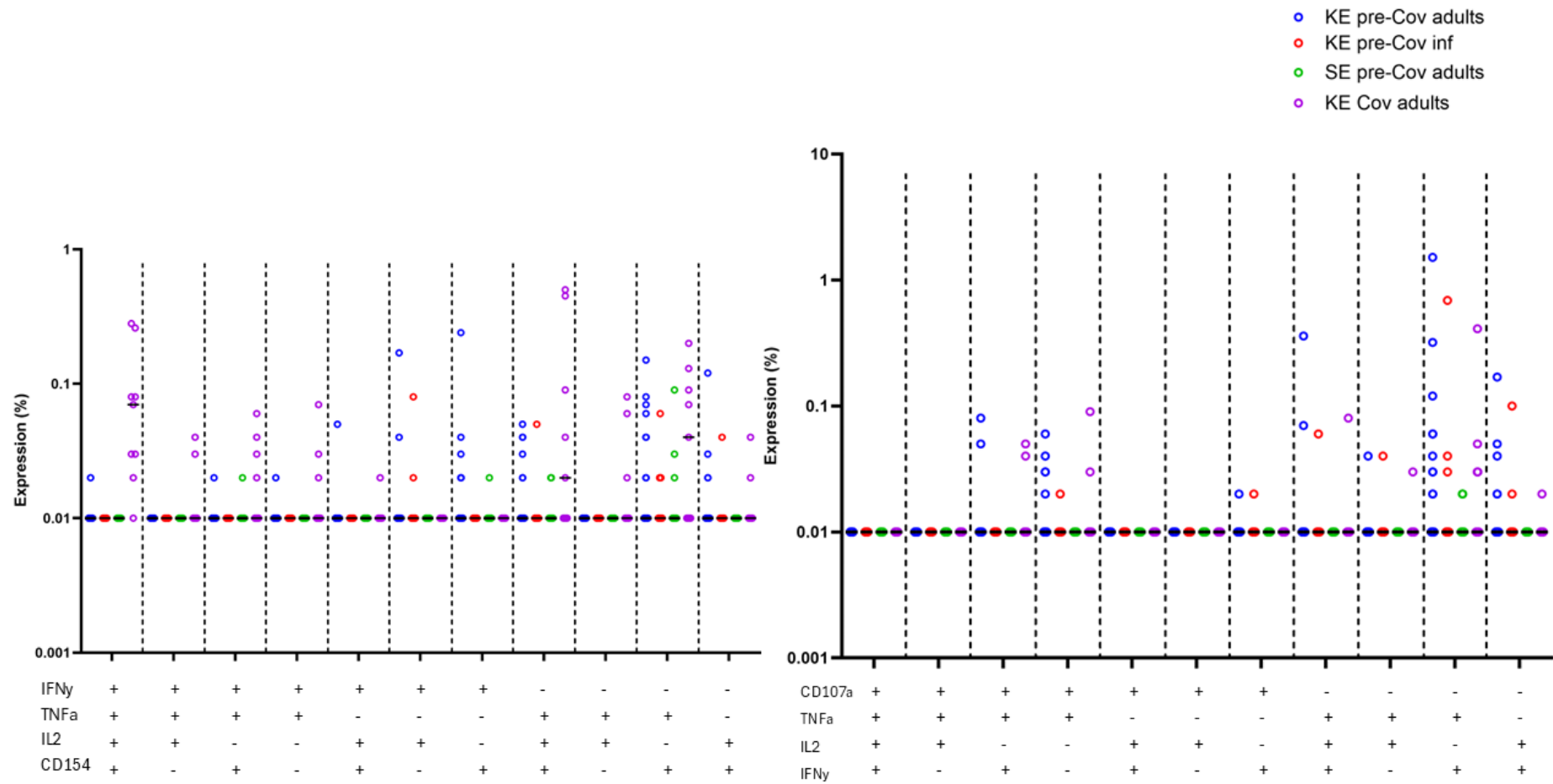
b) Surface markers



**Figure S4. Proportions of T cells expressing cytokines and surface markers in response to SARS-CoV-2 Spike protein. a) Cytokine responses levels of a) IFN- $\gamma$  in CD4+ T cells, b) IFN- $\gamma$  in CD8+ T cells, c) TNF in CD4+ T cells, d) TNF in CD8+ T cells, e) IL-2 in CD4+ T cells, f) IL-2 in CD8+ T cells b)**

**Surface markers g** CD154 on activated CD4+ T cells **h** CD107a on CD8+ T cells. Number of participants for: Kenyan pre-covid adults = 21, Kenyan pre-covid infants = 11, Sweden pre-covid adults = 10, Covid-19 adults = 9. The Mann–Whitney test and Kruskal–Wallis test with Dunn’s multiple comparisons test were used to compare the proportions of cytokine-secreting T cells and T-cell activation markers between Kenyan and Swedish pre-COVID-19 adult samples and across the study groups, respectively. The black line shows the median. \*  $P < 0.05$ , \*\* $P < 0.01$ .

*KE- pre-cov adults is Kenyan pre-COVID-19 adult samples, KE- pre-cov Inf is Kenyan pre-COVID-19 infant samples, SE- pre-cov adults is Swedish pre-COVID-19 adult samples, and KE-Cov adults is Kenyan COVID-19 adult samples.*



**Figure S5a. Polyfunctional expression profile of CD4+ T cells. Figure S5b. Polyfunctional expression profile of CD8+ T cells.**

Number of participants for: *Kenyan* pre-Covid adults samples = 21, *Kenyan* pre-covid infants samples = 11, *Sweden* pre-covid adults samples = 10, *Kenyan* Covid-19 adults samples = 9. Black line shows median. *KE- pre-cov adults* is *Kenyan* pre-COVID-19 adult samples, *KE- pre-cov Inf*

*is Kenyan pre-COVID-19 infant samples, SE- pre-cov adults is Swedish pre-COVID-19 adult samples and KE-Cov adults is Kenyan COVID-19 adult samples.*