Supplemental information

Salivary IgG to SARS-CoV-2 indicates

seroconversion and correlates to serum neutralization

in mRNA-vaccinated immunocompromised individuals

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Table S1. Baseline characteristics of study participants and blood and saliva status, related to Figures 1-4.

Group	Healthy controls	All patients	PID	HIV	HSCT/ CAR-T	SOT	CLL
n after exclusion	82	404	79	80	74	83	88
Sex, Men (%): Women (%)	35 (43%): 47 (57%)	217 (54%): 186 (46%)	30 (38%): 49 (62%)	47 (59%): 33 (41%)	40 (54%): 33 (45%)	42 (51%): 41 (49%)	58 (66%): 30 (34%)
Age (years) [median, IQR]	54 (34-67)	60 (47-69)	50 (37-59)	54 (42-63)	60 (51-67)	59 (47-67)	70 (62-76)
Blood parameters§ [median, IQR]							
IgG (g/L)	11 (10-13)	10 (9-12)	13 (10-15)	10 (7-12)	10 (7-11)	6.50 (5-10)	10 (9-12)
Absolute lymphocyte count (x10^9/L)	1.60 (1.10-2.40)	1.3 (0.9-1.60)	1.8 (1.4-2.30)	1.6 (1-2.70)	1.3 (0.88-1.70)	5.9 (1.6-22)	1.60 (1.10-2.40)
Creatinine (µmol/L)	70.50 (63-81)	80 (65-95)	66 (57-79)	83.5 (67-99)	79 (62-91)	98 (79-119)	80 (67-88)
Ongoing immunosupprersion, n (%)							
Corticosteroids	0 (0%)	94 (23%)	9 (11%)	0 (0%)	9 (12%)	76 (92%)	0 (0%)
Other immunosuppressive agents	0 (0%)	144 (36%)	12 (15%)	0 (0%)	18 (26%)	83 (100%)	30 (34%)
Systemic IgG substitution, n (%)	0 (0%)	51 (13%)	51 (65%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Saliva flow rate (mL/min) [median, IQR] §§							
D0	0.59 (0.4-0.7)	0.56 (0.4-0.7)	0.54 (0.4-0.7)	0.55 (0.4-0.7)	0.66 (0.5-0.8)	0.56 (0.4-0.8)	0.46 (0.2-0.7)
D10	0.60 (0.4-0.8)	0.62 (0.4-0.8)	0.60 (0.3-0.8)	0.64 (0.4-0.8)	0.63 (0.4-0.8)	0.68 (0.5-0.8)	0.59 (0.4-0.8)
D21	0.60 (0.5-0.7)	0.58 (0.4-0.7)	0.55 (0.4-0.7)	0.60 (0.4-0.8)	0.66 (0.5-0.8)	0.60 (0.4-0.7)	0.45 (0.3-0.7)
D35	0.66 (0.4-0.8)	0.60 (0.4-0.8)	0.54 (0.3-0.8)	0.62 (0.5-0.8)	0.62 (0.4-0.8)	0.62 (0.4-0.8)	0.53 (0.3-0.7)

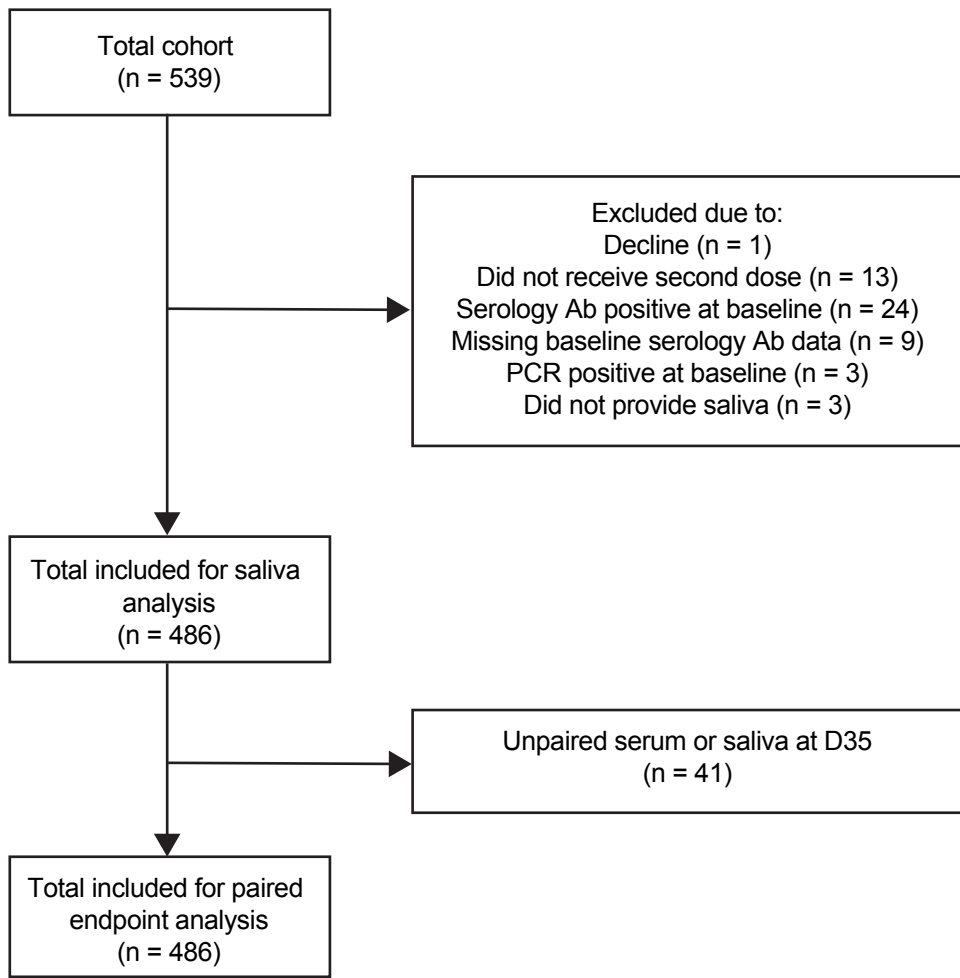§Measured at treatment initiation

§§ Number of days after vaccine dose 1.

Abbreviations: n = number; PID = primary immunodeficiency disorders; HIV = human immunodeficiency virus; HSCT = hematopoietic stem cell transplantation; SOT = solid organ transplantation; CLL = chronic lymphocytic leukemia; IgG = immunoglobulin G; CAR-T =chimeric antigen receptor T-cell therapy.

Table S2. Correlations between salivary spike IgG MFI and serum IgG spike S1 RBD IgG IU/ml in D35 saliva samples, related to Figure 2.

Ab specificity	Spike-f		S1	
	Spearman rho	**p-value**	**Spearman rho**	**p-value**
Healthy Controls	0.4290	<0.0001	0.4303	<0.0001
PID	0.8500	<0.0001	0.8247	<0.0001
HIV	0.3886	0.0006	0.4025	0.0004
HSCT/CAR-T	0.8331	<0.0001	0.8359	<0.0001
SOT	0.7582	<0.0001	0.6660	<0.0001
CLL	0.6951	<0.0001	0.7344	<0.0001

Abbreviations: n = number, PID: primary immunodeficiency disorders, HIV: human immunodeficiency virus, HSCT: hematopoetic stem cell transplantation, SOT: solid organ transplantation, CLL: chronic lymphocytic leukemia, IgG: immunoglobulin G, CAR-T: chimeric antigen receptor T-cell therapy. Spearman correlation analysis was performed.

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│     Total cohort    │
│      (n = 539)      │
└─────────────────────┘
           │
           │              ┌──────────────────────────────────────────────┐
           │              │              Excluded due to:                │
           │              │              Decline (n = 1)                 │
           ├─────────────▶│     Did not receive second dose (n = 13)     │
           │              │   Serology Ab positive at baseline (n = 24)  │
           │              │ Missing baseline serology Ab data (n = 9)    │
           │              │     PCR positive at baseline (n = 3)         │
           │              │     Did not provide saliva (n = 3)           │
           │              └──────────────────────────────────────────────┘
           ▼
┌─────────────────────┐
│ Total included for  │
│   saliva analysis   │
│      (n = 486)      │
└─────────────────────┘
           │
           │              ┌──────────────────────────────────────────────┐
           ├─────────────▶│      Unpaired serum or saliva at D35         │
           │              │                 (n = 41)                     │
           │              └──────────────────────────────────────────────┘
           ▼
┌─────────────────────┐
│ Total included for  │
│   paired endpoint   │
│      analysis       │
│      (n = 486)      │
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Figure S1: Flow chart of the study design, related to Figure 1.
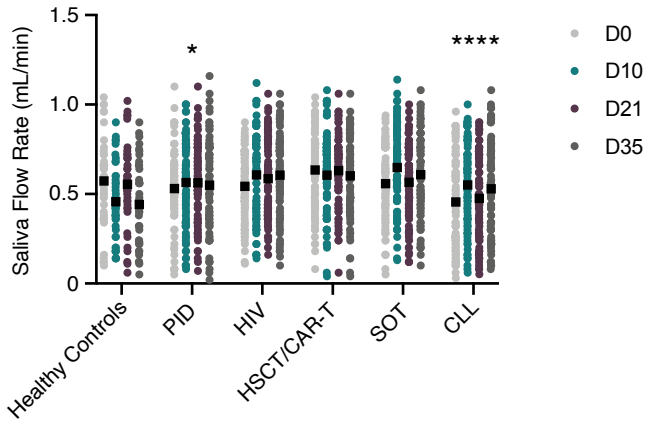
Figure S2: Saliva flow rate for the COVAXID cohort at each timepoint, related Figure 1. The Mann-Whitney U test was used to test significance. **** p<0.0001, *** p<0.0002, ** p<0.0021, * p<0.0332. ns = not significant.
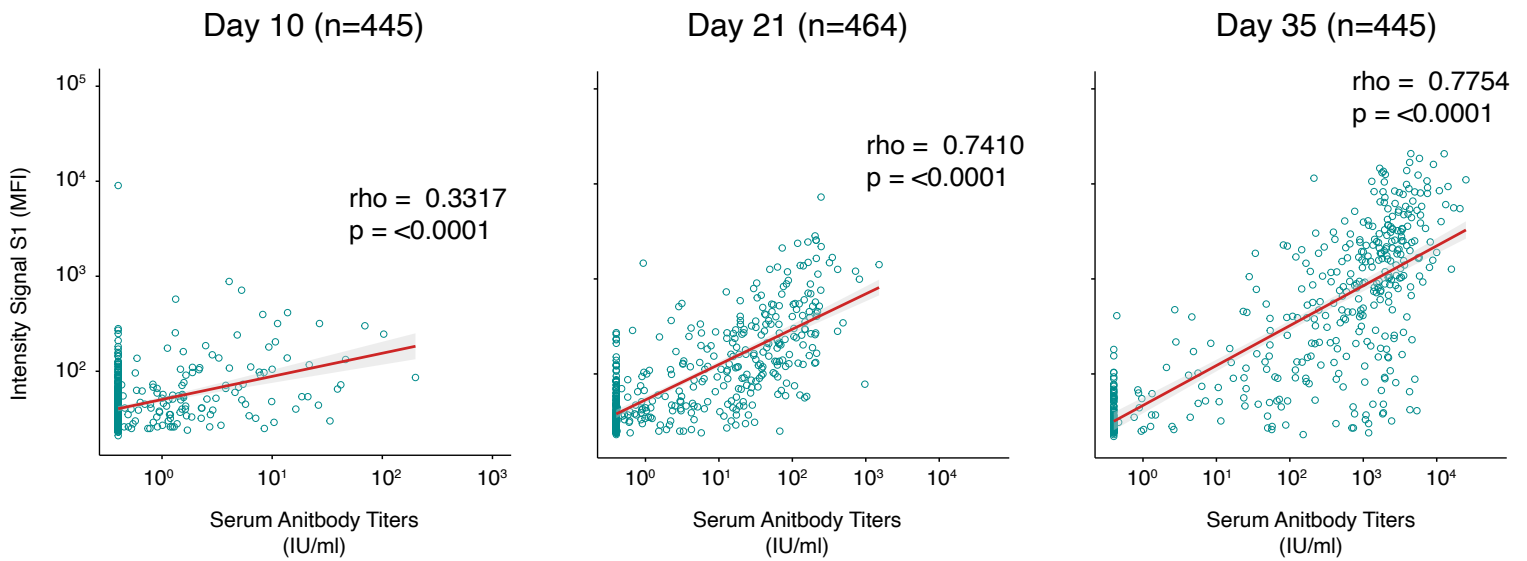
Figure S3: Correlation between spike IgG in paired serum and saliva, related to Figure 2. Salivary S1 IgG MFI signal intensity (y-axis) was measured by a multiplex bead-based assay, and serum SARS-CoV-2 spike IgG levels expressed as internation-al units (x-axis) were measured by the quantitative test Elecsys® Anti-SARS-CoV-2 S. Correlation plots of the entire COVAXID cohort at D10, D21, and D35 post-vaccination. MFI = Median Fluorescence Intensity; IU = International Units. Spearman correlation analysis was used to determine rho- and p-values.
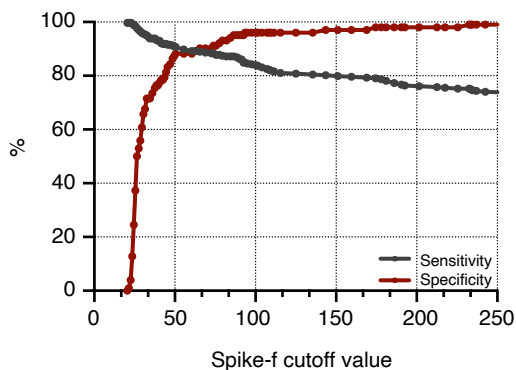
Figure S4: Sensitivity and specificity plot of salivary SARS-CoV-2 Spike-f responses based on optimal cut-off calculation, related to Figure 5.