**Supplemental Material**

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**Supplemental Table 1.** Characteristics of 36 kidney transplant recipients with seroconversion after standard two-dose COVID-19 vaccination.

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| **Seroconverted kidney transplant recipients after standard** **two-dose COVID-19 vaccination (N=36)** |
| **Vaccine** | mRNA/mRNA (N=29) | AZ/AZ (N=4) | AZ/mRNA(N=3) |
| Sample collection, days after vaccination (IQR) | 21 (20–23) |
| Vaccine interval, days (IQR) | 40 (26–42) |
| Age, years (IQR) | 52 (39–58) |
| Females, N (%) | 12 (33) |
| **Transplant-related data1** |
| Time since transplantation, years (IQR) | 14 (7–16) |
| First transplant, N (%) | 28 (88) |
| Deceased donor, N (%) | 16 (50) |
| **Current immunosuppressive medication** |
| CNI, N (%) | 33 (92) |
| MPA, N (%) | 21 (58) |
| Azathioprine, N (%) | 4 (11) |
| mTOR Inhibitor, N (%) | 4 (11) |
| Belatacept, N (%) | 0 (0) |
| Steroids, N (%) | 34 (94) |

AZ, AstraZeneca; CNI, calcineurin inhibitor; IQR, interquartile range; MPA, mycophenolic acid; mTOR, mammalian target of rapamycin; N, number

1 – no transplant-related data available for 4 patients

**Supplemental Table 2.** Cutoff values for defining positivity for antibodies against different SARS-CoV-2 target epitopes by a bead-based multiplex assay.

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| **Target** | **Cutoff (MFI)** |
| SARS-CoV-2 Spike | 6800 |
| SARS-CoV-2 Spike S1 | 2700 |
| SARS-CoV-2 Spike RBD | 3800 |
| SARS-CoV-2 Spike S2 | 3200 |
| SARS-CoV-2 Nucleocapsid Protein | 5900 |

MFI, mean fluorescence intensity; RBD, receptor-binding domain

**Supplemental Figure 1.** Antibodies against different SARS-CoV-2 target epitopes in kidney transplant recipients and healthy controls with different SARS-CoV-2 two-dose vaccination regimens.



 (A) Multiplex analysis of antibodies against the full spike, the S1 spike, the receptor-binding domain of the spike, and the S2 spike protein of SARS-CoV-2 in all 135 two-dose vaccinated kidney transplant recipients and 25 healthy controls matched for type of vaccine, age, and sex. The mean fluorescence intensity value of the reactivity in kidney transplant recipients and healthy controls is represented on the y-axis. The dashed black line represents the cutoff for detection for each target, respectively. (B) Multiplex analysis of antibodies against the SARS-CoV-2 full spike, the S1 spike, the receptor-binding domain of the spike, and the S2 spike protein presented as a histogram plot. The x-axis represents the sample number, the y-axis represents the mean fluorescence intensity (MFI). (C) Proportional contribution (%) of each antibody target to the total MFI value for kidney transplant recipients and healthy controls, respectively. \*\*\* P < 0.001