**Supplementary File**

An additional analysis was performed to estimate the stability of SARS-CoV-2 antibodies expressed as anti-spike 1 receptor binding domain (S1RBD) IgG concentrations in international units/mL (IU/mL). Here, we used data from a previously published study, where both anti-S1 IgG OD ratios and anti-S1RBD IgG concentrations (IU/mL) were determined on the same samples (28, 29). In the current analysis, we performed simple linear regression on this dataset. Using the regression fit, we interpolated the anti-S1 IgG OD ratios retrieved after short-/long- term storage to log10 S1RBD IgG concentrations (IU/mL). Mixed effects models were applied on the interpolated log10 S1RBD IgG concentrations with storage time as a fixed effect and subject as random effect. A Bonferroni correction was applied for multiple comparisons. S1RBD IgG concentrations were plotted over time after back transformation. No significant differences in S1RBD IgG concentrations were observed compared to baseline, except after month 4 during storage at -20°C (p=0.0044).



**Supplementary Figure 1. Regression plot of the raw optical density (OD) values from paired measurements obtained by the Behring Elisa Processor III (Siemens AG, Munich, Germany) and Magellan Sunrise™ (Tecan Group Ltd., Männedorf, Switzerland) .** n=160

Afbeelding met schermopname, zwart, duisternis, tekst

Automatisch gegenereerde beschrijving

**A**

Afbeelding met tekst, schermopname, zwart, zwart-wit

Automatisch gegenereerde beschrijving

**E**

**C**

**B**

**D**

**Supplementary Figure 2: Stability of SARS-CoV-2 antibodies over time expressed in in international units/mL (IU/mL). 2A:** Regression fit of log10 S1RBD IgG concentrations (IU/mL) and anti-S1 IgG optical density ratios. **2B:** Stability of interpolated S1RBD IgG antibodies over two months at room temperature. **2C:** Stability of interpolated S1RBD IgG antibodies over two months at 4°C. **2D:** Stability of interpolated S1RBD IgG antibodies over two months at -20°C. **2E:** Stability of interpolated S1RBD IgG antibodies over two years at -20°C. \*\*p=0.0044; S1RBD: spike 1 receptor binding domain; S1: spike 1

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **BASELINE** | **14 days** | **1 month** | **2 months** | **3 months** | **4 months** | **6 months** | **10 months** | **12 months** | **14 months** | **18 months** | **24 months** |
|  | **14/07/2021** | **28/07/2021** | **12/08/2021** | **2/09/2021** | **6/10/21** | **5/11/21** | **22/12/2021** | **26/04/2022** | **27/06/2022** | **18/08/2022** | **20/12/2022** | **23/06/2023** |
| **Sample ID** | **Baseline** | **Freezer** | **FREEZER** | **FREEZER** | **FREEZER** | **FREEZER** | **FREEZER** | **FREEZER** | **FREEZER** | **FREEZER** | **FREEZER** | **FREEZER** |
| STABILITY SUBJECT 1 | 5.72 | 4.311 | 4.8 | 4.75 | 3.92 | 4.08 | 4.86 | 4.83 | 4.43 | 4.24 | 4.80 | 4.2 |
| STABILITY SUBJECT 2 | 2.1 | 2.114 | 1.81 | 1.91 | 1.96 | 1.37 | 2.14 | 2.08 | 2.16 | 2.30 | 2.81 | 2.11 |
| STABILITY SUBJECT 3 | 8.9 | 9.622 | 9.32 | 9.48 | 8.55 | 8.08 | 9.94 | 9.36 | 11.04 | 10.29 | 12.75 | 10.79 |
| STABILITY SUBJECT 4 | 7.97 | 7.952 | 7.32 | 7.77 | 6.82 | 6.29 | 8.19 | 7.74 | 7.30 | 7.97 | 8.68 | 7.27 |
| STABILITY SUBJECT 5 | 4.41 | 4.184 | 3.86 | 4.12 | 3.70 | 3.08 | 3.72 | 3.86 | 3.56 | 2.87 | 4.08 | 3.4 |
| STABILITY SUBJECT 6 | 0.9 | 0.781 | 0.6 | 0.77 | 1.04 | 0.63 | 0.88 | 0.83 | 0.66 | 0.68 | 0.62 | 0.7 |
| STABILITY SUBJECT 7 | 7.1 | 6.289 | 6.81 | 6.92 | 6.70 | 5.37 | 7.15 | 5.51 | 5.44 | 6.74 | 6.23 | 5.25 |

**Supplementary Table 1: OD ratio per timepoint and per subject at -20°C.**

**Supplementary Table 2: OD ratio per timepoint and per subject at room temperature.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **BASELINE** | **14 days** | **1 month** | **2 months** |
|  | **14/07/2021** | **8/07/2021** | **12/08/2021** | **2/09/2021** |
| **Sample ID** | **Baseline** | **ROOM T** | **ROOM T** | **ROOM T** |
| STABILITY SUBJECT 1 | 5.72 | 4.37 | 4.37 | 3.66 |
| STABILITY SUBJECT 2 | 2.1 | 1.76 | 1.32 | 1.34 |
| STABILITY SUBJECT 3 | 8.9 | 9.53 | 9.77 | 9.86 |
| STABILITY SUBJECT 4 | 7.97 | 6.99 | 7.11 | 7.53 |
| STABILITY SUBJECT 5 | 4.41 | 3.05 | 3.25 | 3.29 |
| STABILITY SUBJECT 6 | 0.9 | 0.67 | 0.5 | 0.53 |
| STABILITY SUBJECT 7 | 7.1 | 5.56 | 4.81 | 4.35 |

**Supplementary Table 3: OD ratio per timepoint and per subject at 4°C.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **BASELINE** | **14 days** | **1 month** | **2 months** |
|  | **14/07/2021** | **28/07/2021** | **12/08/2021** | **2/09/2021** |
| **Sample ID** | **Baseline** | **FRIDGE 4°C** | **FRIDGE 4°C** | **FRIDGE 4°C** |
| STABILITY SUBJECT 1 | 5.72 | 4.562 | 3.96 | 4.32 |
| STABILITY SUBJECT 2 | 2.1 | 2.819 | 1.64 | 1.95 |
| STABILITY SUBJECT 3 | 8.9 | 9.4 | 9.48 | 9.33 |
| STABILITY SUBJECT 4 | 7.97 | 7.41 | 7.42 | 6.93 |
| STABILITY SUBJECT 5 | 4.41 | 3.62 | 3.8 | 3.72 |
| STABILITY SUBJECT 6 | 0.9 | 0.91 | 0.6 | 0.69 |
| STABILITY SUBJECT 7 | 7.1 | 5.85 | 6.38 | 6.13 |