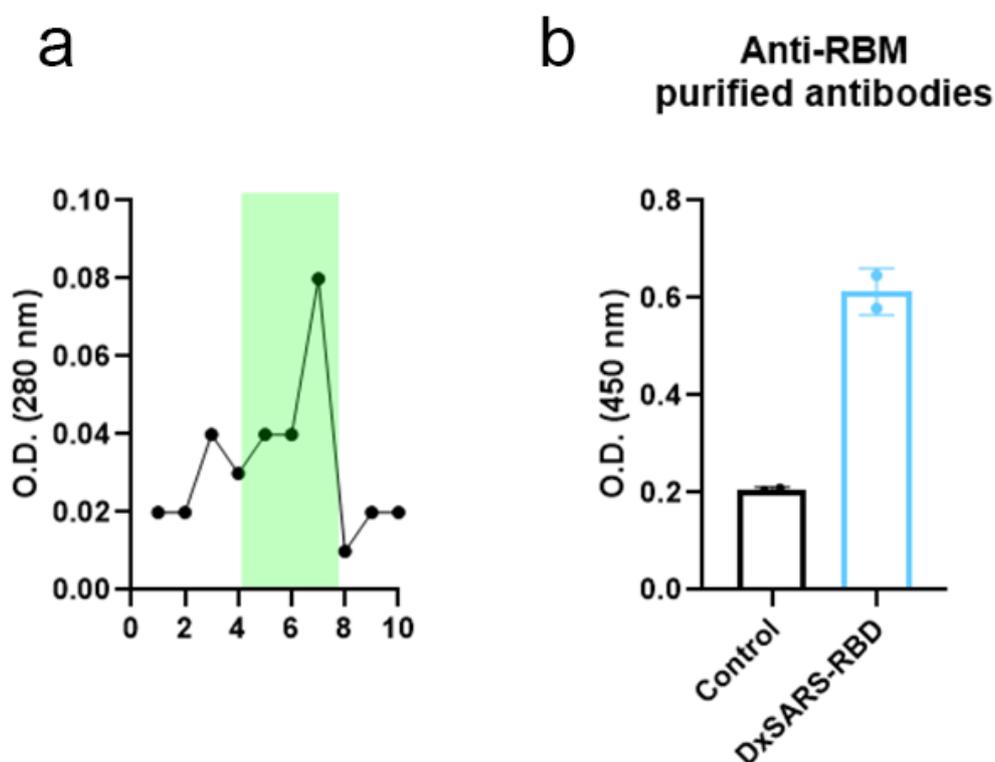**Figure S1**. Purification of human antibodies against the RBM region of the SARS-CoV-2 spike protein using a recombinant RBM Sepharose 4B affinity column (3 x 1 cm, inner diameter) (a) Evaluation of absorbance at 280 nm of the eluate different fractions, highlighted in green the eluate fractions used to concentrate polyclonal antibodies (b) In-house ELISA showing the specificity of purified antibodies to the multiepitope Dx-SARS-RBD containing RBM fragments.

Table S1: One-dose regime AstraZeneca-Oxford vaccinated serum information.

Sample	Gender	1st Dose	Collected	Days after vaccination
M1	F	2021-06-18	2021-09-26	100
M3	F	2021-07-20	2021-09-26	70
M4	F	2021-08-07	2021-09-26	50
M5	M	2021-06-21	2021-09-26	97
M7	F	2021-09-09	2021-09-26	17
M9	M	2021-09-02	2021-09-26	24
M10	M	2021-09-15	2021-09-26	11
M11	M	2021-08-11	2021-09-26	46
M12	F	2021-06-26	2021-09-26	92
M13	M	2021-06-27	2021-09-26	91
M14	F	2021-06-28	2021-09-26	90
M17	M	2021-06-29	2021-09-26	89
M20	M	2021-06-30	2021-09-26	88
M21	M	2021-07-01	2021-09-26	87

M23	M	2021-07-28	2021-09-26	60
M24	F	2021-08-03	2021-09-26	54
M25	F	2021-07-04	2021-09-26	84
M27	F	2021-08-18	2021-09-26	39
M28	F	2021-08-20	2021-09-26	37
M29	F	2021-09-09	2021-09-26	17
M30	F	2021-07-08	2021-09-26	80
M31	F	2021-07-16	2021-09-26	72
M34	F	2021-08-17	2021-09-26	40
M37	F	2021-08-20	2021-09-26	37
M39	F	2021-09-10	2021-09-26	16
M40	F	2021-08-30	2021-09-26	27
M41	F	2021-08-13	2021-09-26	44
M43	F	2021-08-22	2021-09-26	35
M46	F	2021-08-24	2021-09-26	33
M47	F	2021-07-17	2021-09-26	71
M48	M	2021-09-12	2021-09-26	14

Table S2: Heterologous booster dose vaccinated serum information.

Sample	Birth data	Gender	Dose regimen	Last dose	Collected	Days after last vaccine
B1	1983-04-08	M	A/A/A/P	2022-07-15	2023-03-08	236
B2	1991-12-03	F	A/A/P/P	2022-06-22	2023-03-08	259
B3	1990-08-22	M	A/A/P/A	2022-10-17	2023-03-08	142
B4	1997-02-15	M	A/A/P/P	2022-11-16	2023-03-08	122
B5	1980-12-11	F	A/A/P/J	2022-06-09	2023-03-08	303
B6	1977-08-03	F	A/A/P	2022-01-10	2023-03-08	401
B7	1992-04-09	F	A/A/P/A	2022-06-20	2023-03-08	261

*A= Astrazeneca viral vector vaccine; P = Pfizer Spike mRNA vaccine; J = Janssen virus-based technology vaccine
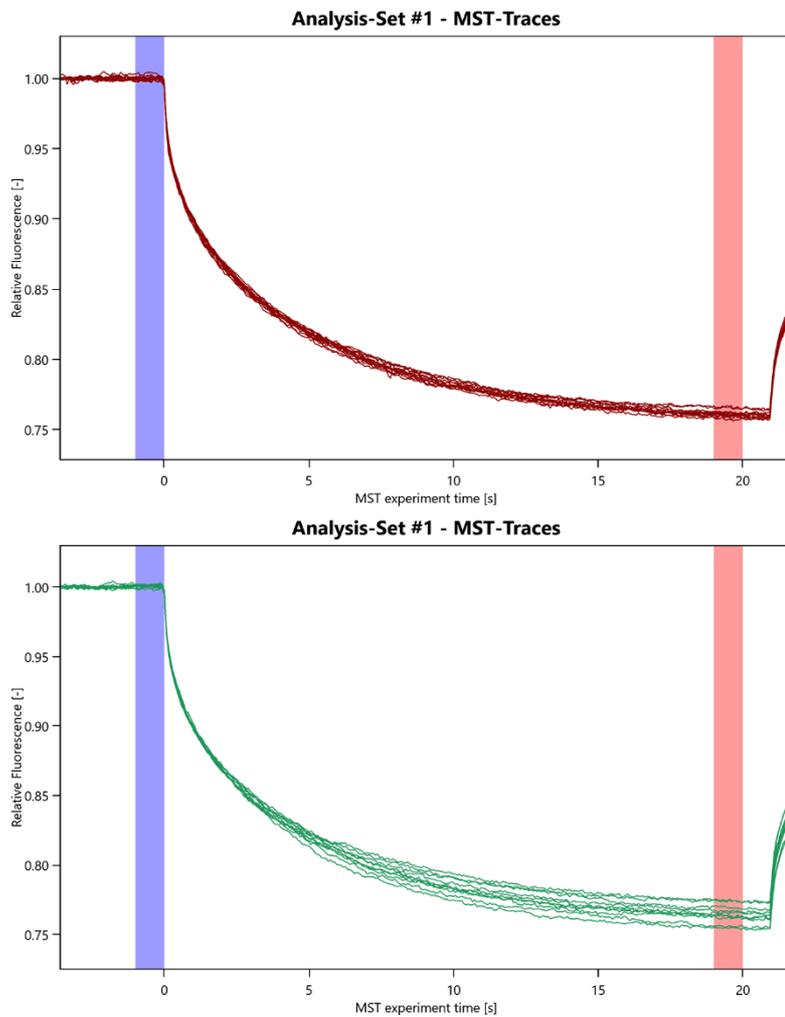
Figure S2: Microscale thermophoresis (MST) traces of anti-RBM antibodies binding to different concentrations of S1WT (red) and S2WT (green) peptides by MicroScale Thermophoresis (MST). Relative fluorescence (RF) between the bound and unbound state was determined over a time of 21s with 20s MST-on time for evaluation. The blue bar indicates the ΔRF before the temperature gradient was applied, whereas the red bar shows the ΔRF during the thermophoresis. For interaction experiments, the amount of NT.647-labeled antibodies was kept constant, while the concentration of unlabeled peptides varied from 0.5 µg/mL–0.12 ng/mL. The assay was performed in PBS containing 0.05% Tween 20 and after a short incubation period, the samples were analyzed in standard glass MST NT.115 capillaries.
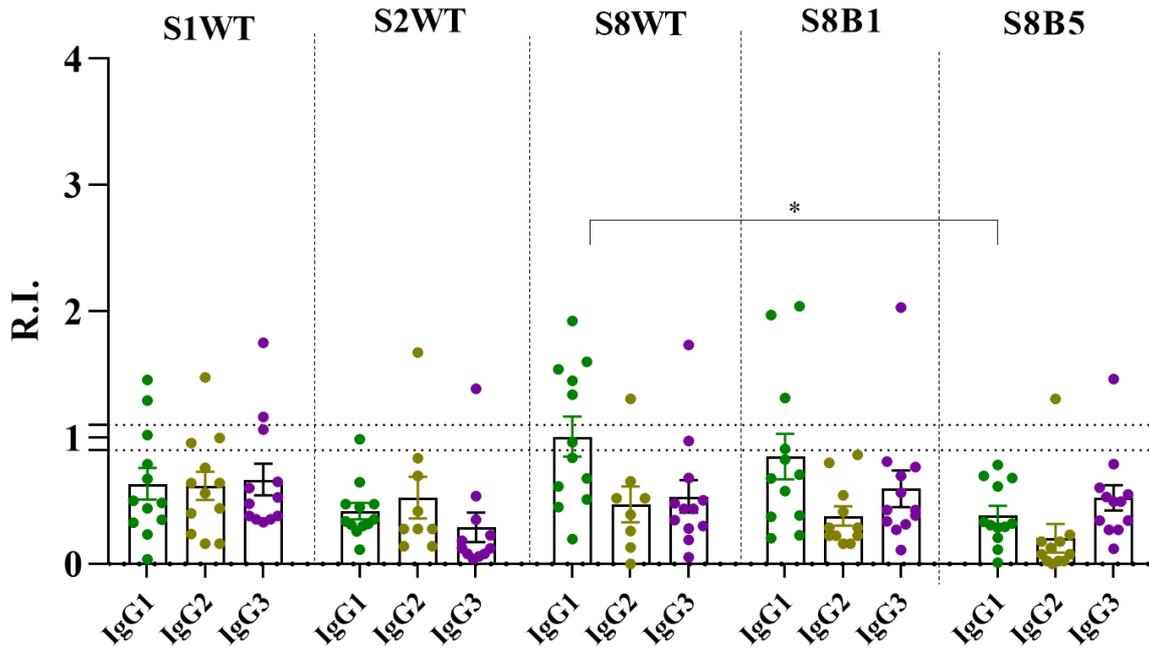
Figure S3: IgG subclass neutralizing response against RBM peptides in vaccinated sera. Subclass Immunoglobulin subclasses reactivity of RBM peptides S1WT, S2WT, S8WT, S8BA1, and S8BA5 using a cohort of vaccinated individuals positives for IgG and with the first dose of Oxford-AstraZeneca (n=12) and booster doses. For analysis purposes were done multiple comparisons using Tukey's multiple comparisons test where a $p < 0.05$ was considered a significant difference (* = $p < 0.05$).