

Supplementary Table S1. Staining protocol for B cells and ASCs in peripheral blood samples.

Staining step	Name	Fluorochrome	Supplier	Clone	Cat#
1) Fc Block 10 min, RT	TruStain	-	BioLegend	-	422302
2) surface staining 30 min, RT	BV stain buffer	-	BD Biosciences	-	563794
	IgD	BUV395	BD Biosciences	IA6-2	563813
	CD45RA	BUV563	BD Biosciences	HI100	565703
	CD21	BUV661	BD Biosciences	B-ly4	741605
	CD19	BUV737	BD Biosciences	SJ25C1	612756
	BCMA	BV421	BioLegend	19F2	357520
	CD11c	BV605	BD Biosciences	B-ly6	563929
	CD27	BV650	BioLegend	O323	302828
	CD86	BV711	BD Biosciences	2331	563158
	RBD	Biotin	BioLegend	-	793906
	CD3	FITC	BD Biosciences	-	365764
	CD14	FITC	BD Biosciences	MφP9	345784
	CD24	PE-CF594	BioLegend	ML5	311134
	CD138	PE-Cy5	AAT Bioquest	MI15	113801M0
	CXCR3	PE-Cy7	BD Biosciences	1C6/CXCR3	560831
	CD20	AF700	BioLegend	2H7	302322
	CD38	APC-eF780	Invitrogen	HIT2	47-0389-42
	HLA-DR	PE-Fire810	BioLegend	L243	90000155
20 min, RT	Streptavidin	BV785	BioLegend	-	405249
3) viability staining 20 min, 4°C	fixable viability dye	eF506	ThermoFisher	-	65-0866-14
4) fixation/permeabilisation 30 min, 4°C	Foxp3 Fix/Perm buffer	-	eBioscience	-	00-5523-00
5) intracellular staining 30 min, 4°C	IL-10	eF450	ThermoFisher	JES3-9D7	48-7108-42
	IgG	BV480	BD Biosciences	G18-145	746341
	IgM	PerCP-Cy5.5	BD Biosciences	G20-127	561285
	EBI3	PerCP-eF710	Invitrogen	ebic6	46-7358-42
	BLIMP1	PE	BD Biosciences	6D3	564702
	MCL1	APC	Invitrogen	LVUBKM	17-9047-42
	T-Bet	eF660	Invitrogen	eBio4B10	50-5825-80

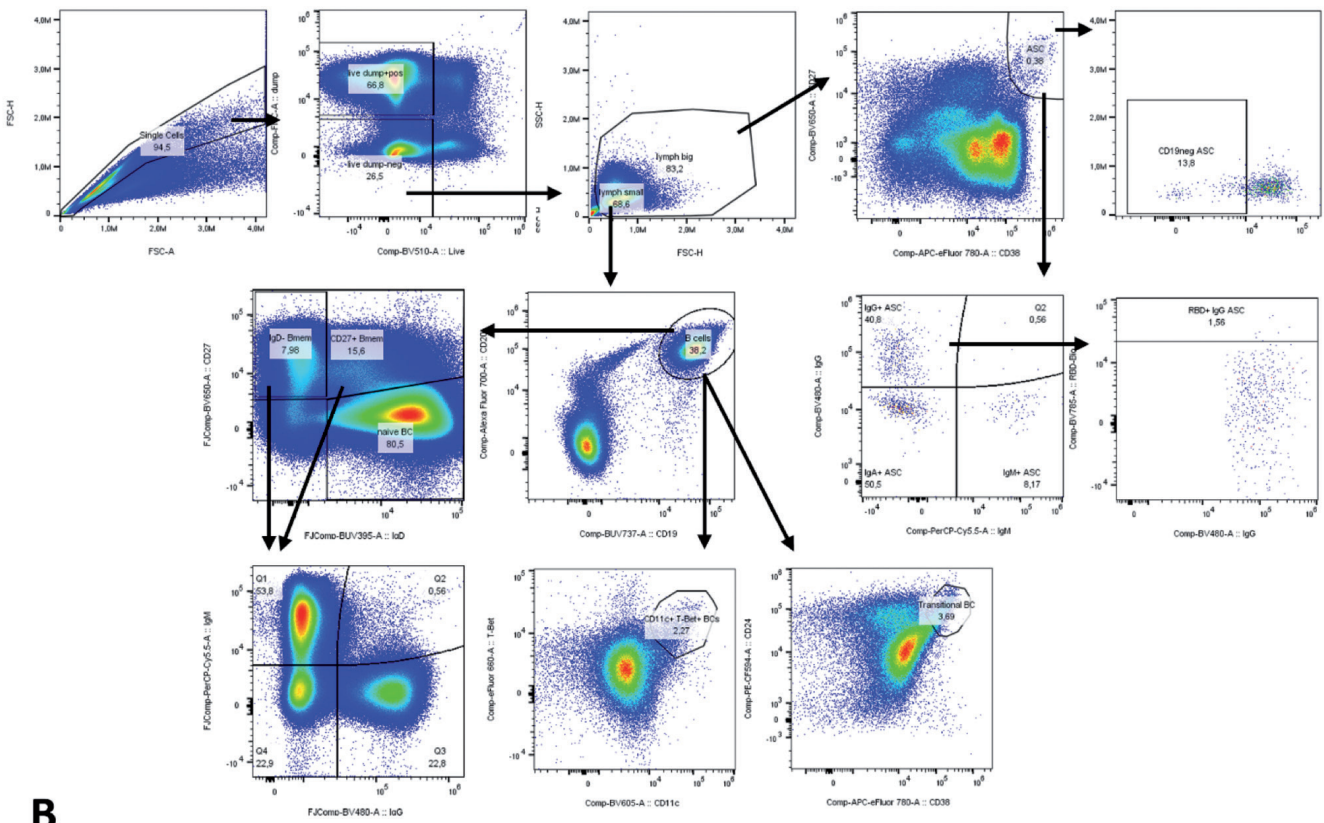
Cat#: catalogue number; min: minutes; RT: room temperature; Ig: immunoglobuline; BV: brilliant violet; CD: cluster of differentiation; BCMA: B cell maturation antigen; CXCR: cystein-X-cystein receptor; HLA: human leukocyte antigen; IL-10: interleukin 10; BLIMP1: B lymphocyte-induced maturation protein 1; MCL1: myeloid cell leukaemia 1; BUV: brilliant ultra violet; FITC: fluorescein isothiocyanate; PE: phycoerythrin; Cy: cyanine; AF: alexa fluor; APC: allophycocyanin; eF: eFluor; PerCP: peridinin chlorophyll.

Supplementary Table S2. Staining protocol for T cells in peripheral blood samples.

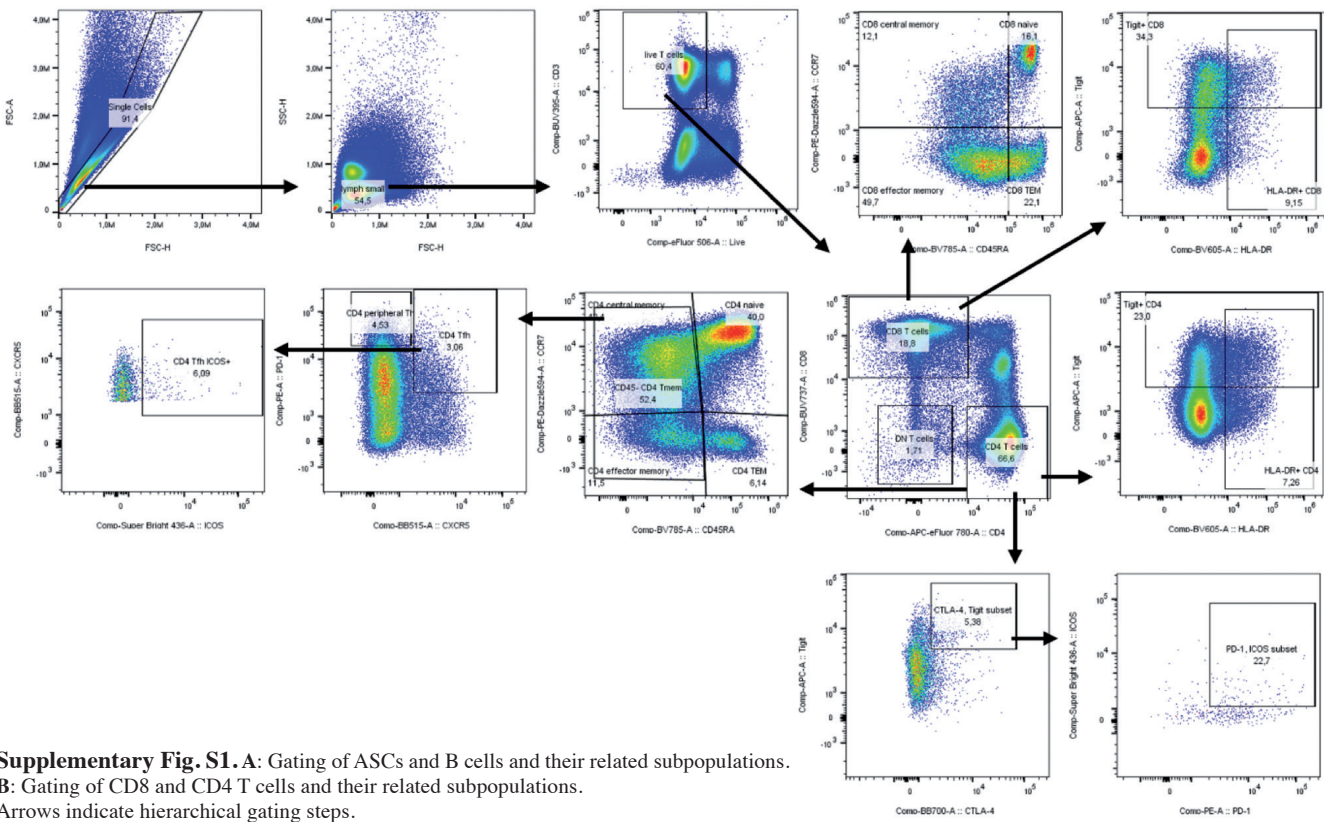
Staining step	Name	Fluorochrome	Supplier	Clone	Cat#
1) Fc Block 10 min, RT	TruStain	-	BioLegend	-	422302
2) surface staining 30 min, RT	BV stain buffer	-	BD Biosciences	-	563794
	CD3	BUV395	BD Biosciences	UCHT1	563546
	CD8	BUV737	BD Biosciences	SK1	612754
	ICOS	SB436	eBioscience	ISA-3	62-9948-42
	HLA-DR	BV605	BioLegend	L243	307640
	CD25	BV650	BioLegend	BC96	302634
	CD45RA	BV785	BioLegend	HI100	304140
	CXCR5	BB515	BD Biosciences	RF8B2	564624
	PD-1	PE	BD Biosciences	EH12.1	560795
	CCR7	PE-D594	BioLegend	G043H7	353236
	CXCR3	PE-Cy7	BD Biosciences	1C6/CXCR3	560831
	Tigit	APC	eBioscience	MBSA43	17-9500-42
	CD127	R718	BD Biosciences	HIL-7R-M21	566967
	CD4	APC-eF780	eBioscience	SK-3	47-0047-42
3) viability staining 20 min, 4°C	fixable viability dye	eF506	ThermoFisher	-	65-0866-14
4) fixation/permeabilisation 30 min, 4°C	Foxp3 Fix/Perm buffer	-	eBioscience	-	00-5523-00
5) intracellular staining 45 min, 4°C	CTLA-4	BB700	BD Biosciences	BNI3	566901

Cat#: catalogue number; min: minute; RT: room temperature; BV: brilliant violet; CD: cluster of differentiation; ICOS: inducible T-cell costimulator; HLA: human leukocyte antigen; CXCR: cystein-X-cystein receptor; PD: programmed cell death protein; Tigit: T cell immunoreceptor with Ig and ITIM domains; CTLA: cytotoxic T-lymphocyte-associated protein; BUV: brilliant ultra violet; SB: super bright; BB: brilliant blue; PE: phycoerythrin; Cy: cyanine; AF: alexa fluor; APC: allophycocyanin; eF: eFluor.

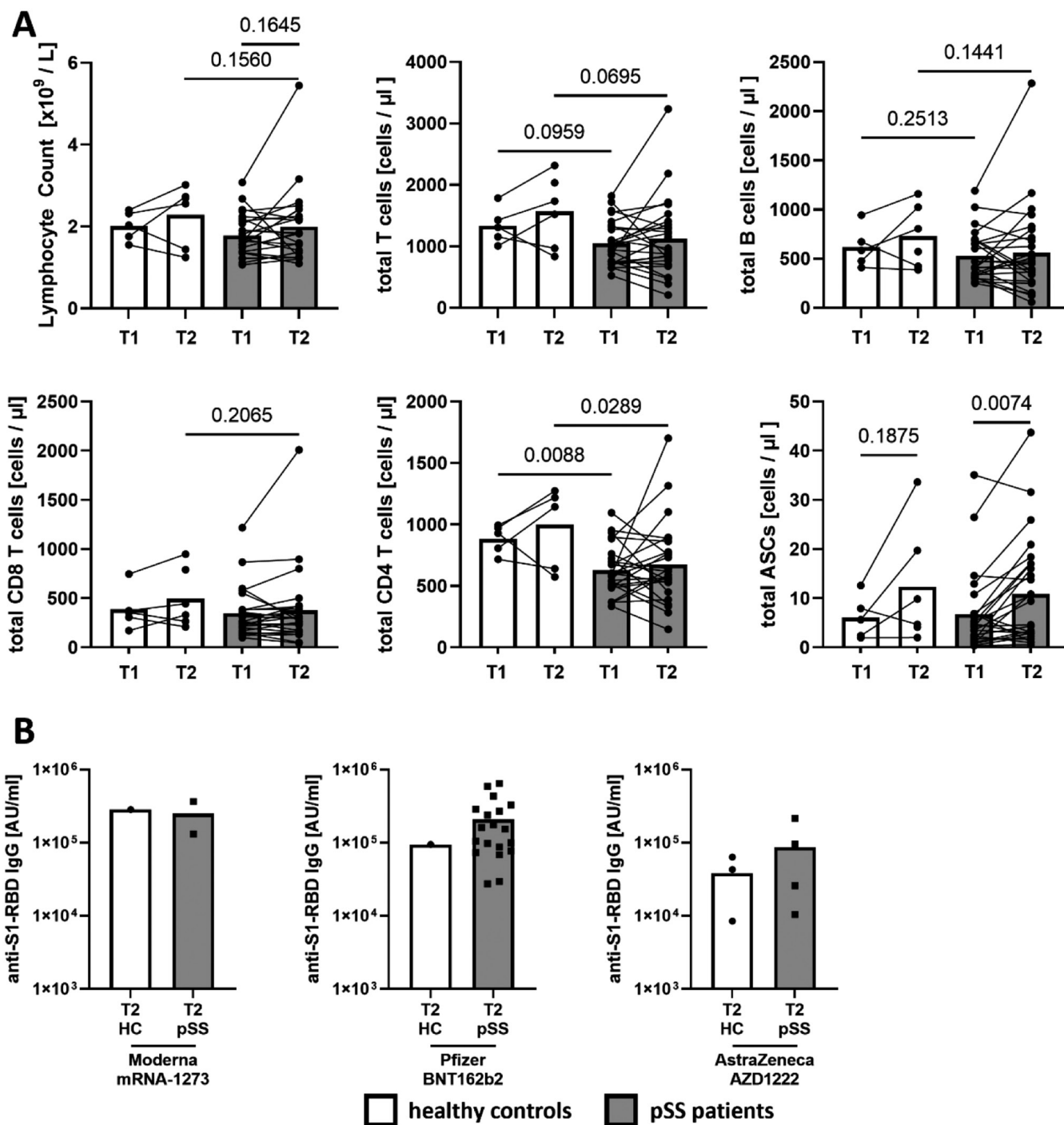
A



B



Supplementary Fig. S1. A: Gating of ASCs and B cells and their related subpopulations. **B:** Gating of CD8 and CD4 T cells and their related subpopulations. Arrows indicate hierarchical gating steps.



Supplementary Fig. S2. A: Total lymphocyte counts and total counts for T and B cells, CD8 T cells, CD4 T cells and ASCs. Bar charts with mean and individual data points; paired values connected by lines; *p*-values determined by Mann-Whitney U-test or Wilcoxon rank test according to pairing of data. **B:** anti-S1-RBD CoV-2 titres of pSS patients and healthy controls for individual vaccines after second vaccination.