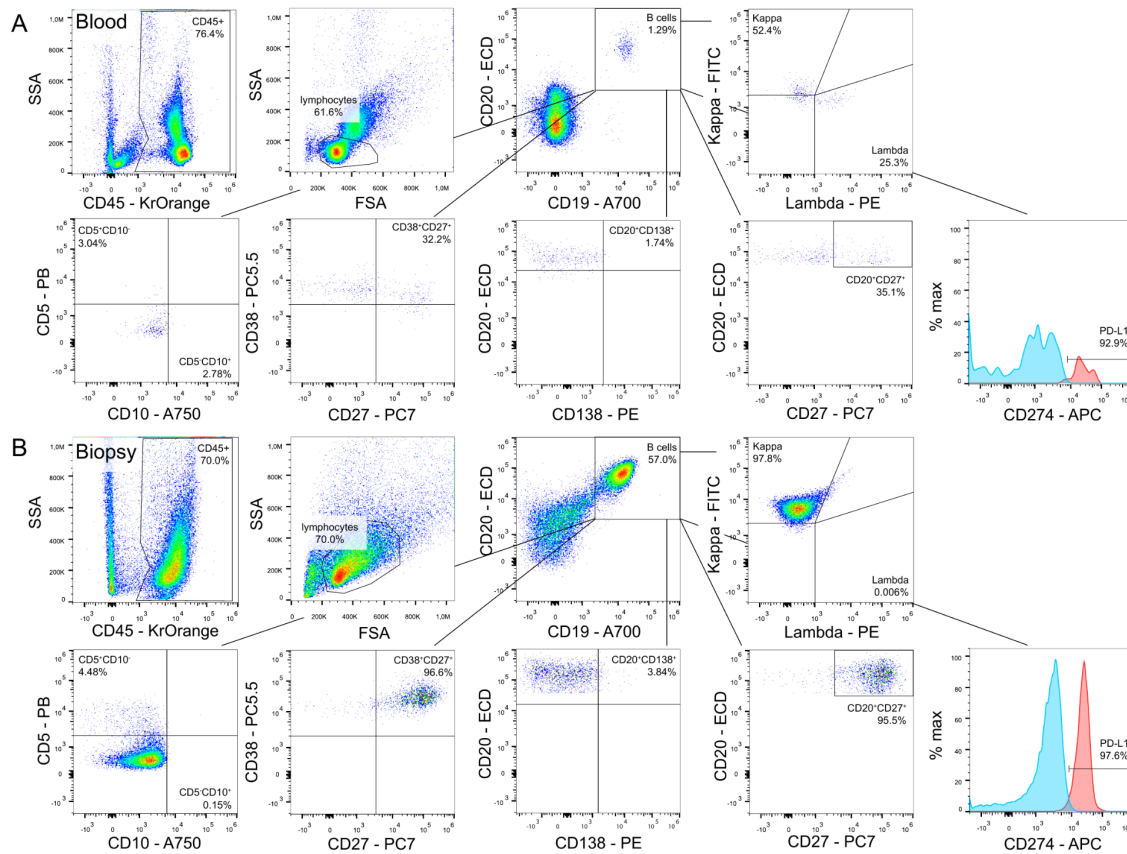


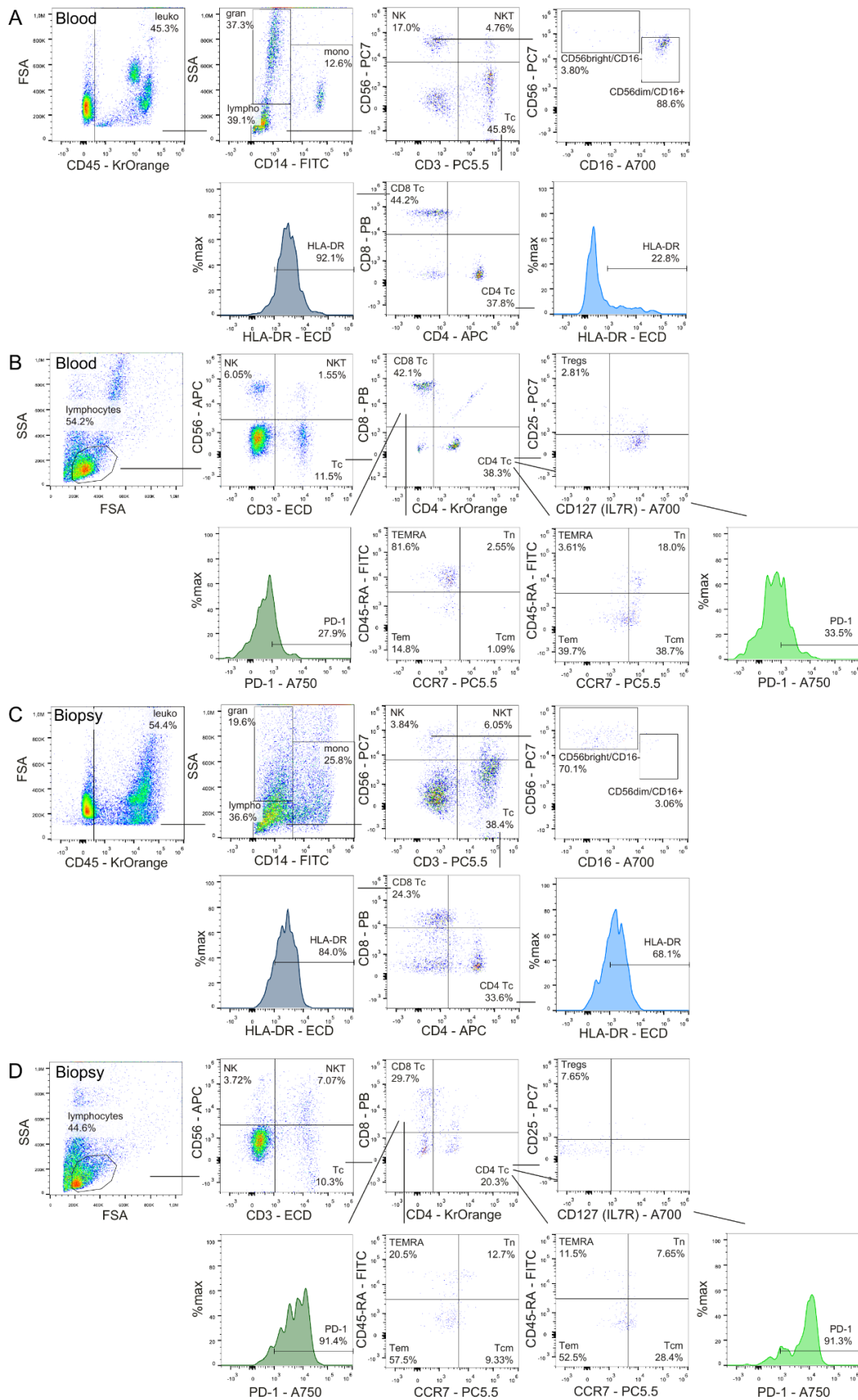
Additional file 4: Supplementary Figures 1-7

Supplementary Figure 1: Flow cytometry of B cells



(A-B) Representative flow cytometry staining (p2) of the B cell panel in blood (A) and biopsy (B) material.

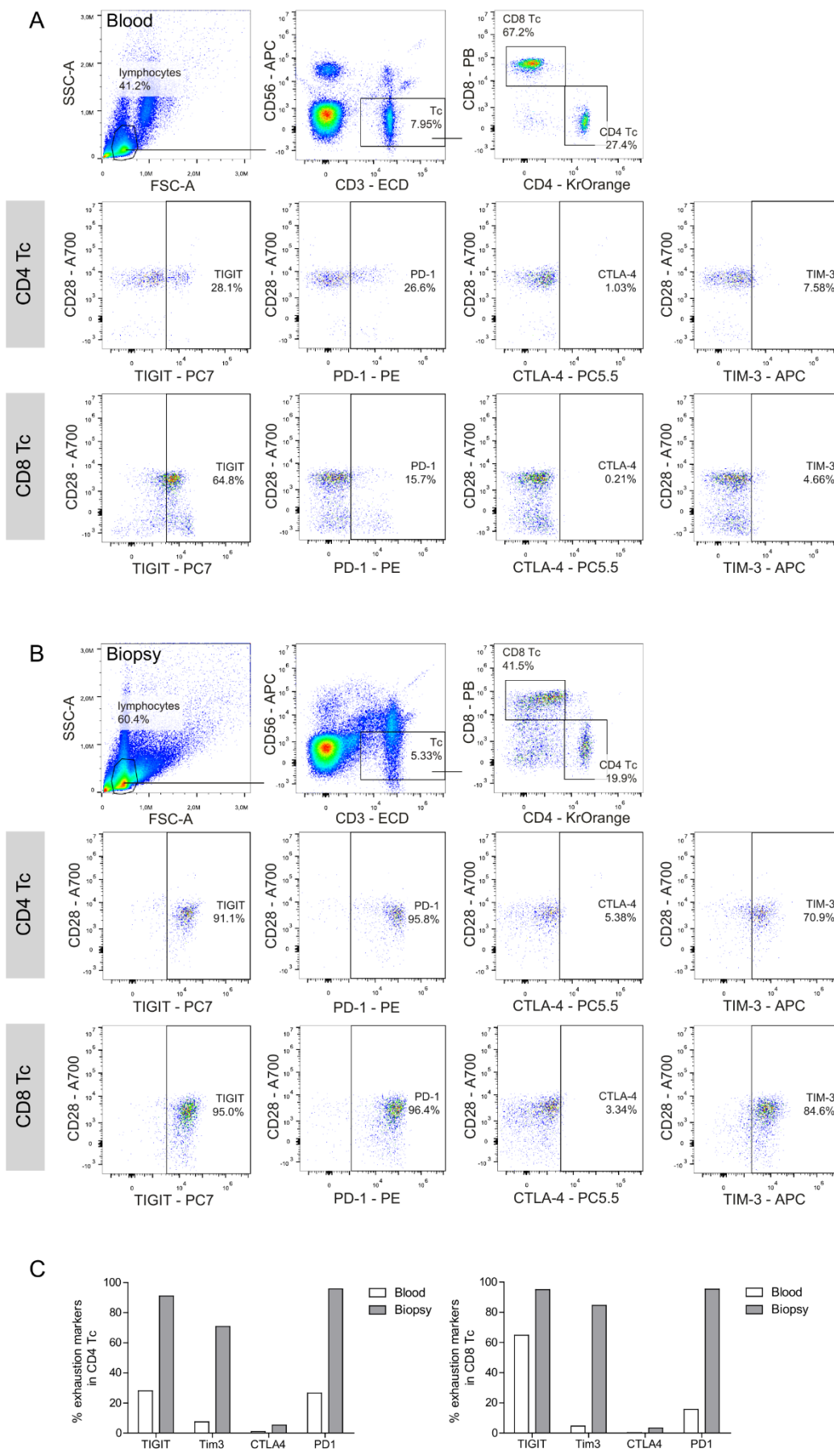
Supplementary Figure 2: Flow cytometry of T cells



(A-D) Representative flow cytometry staining (p2) of the T cell panel in blood (A-B) and biopsy (C-D) material.

Abbreviations: leuko - leukocytes; gran - granulocytes, lympho - lymphocytes; mono - monocytes; Tc - T cells; Tregs - regulatory T cells, Tcm - central memory T cells; Tem - effector memory T cells, TEMRA - effector memory recently activated T cells

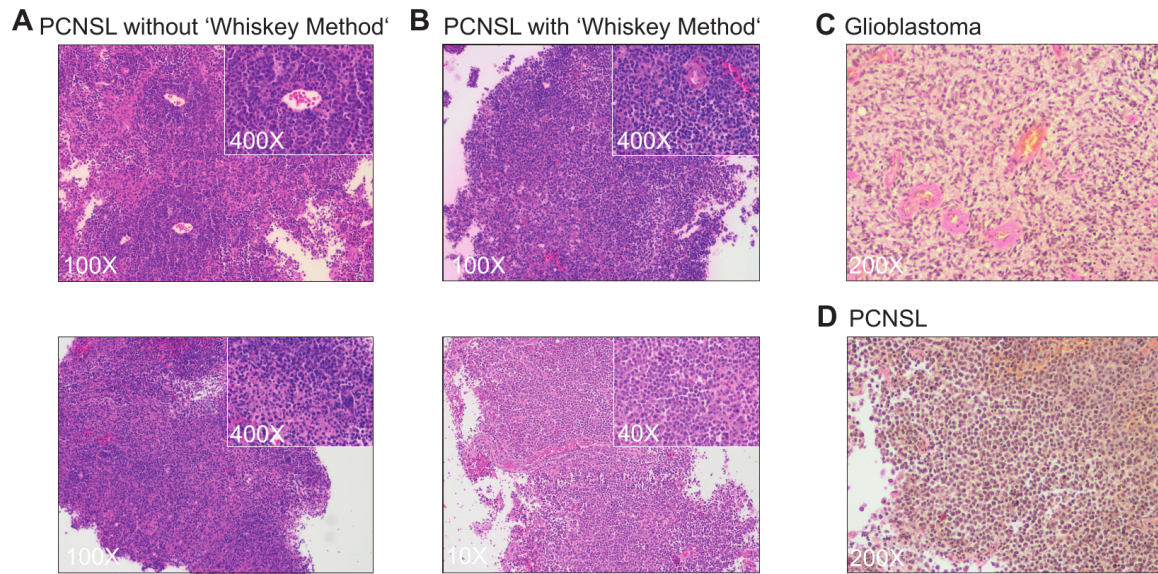
Supplementary Figure 3 : Flow cytometry of T cell exhaustion markers



(A-D) Representative flow cytometry staining (p2) of the T cell exhaustion panel in blood (A) and biopsy (B) material.

(C) Bar plots of the percentage of CD4⁺ or CD8⁺ T cells expressing T cell exhaustion markers.

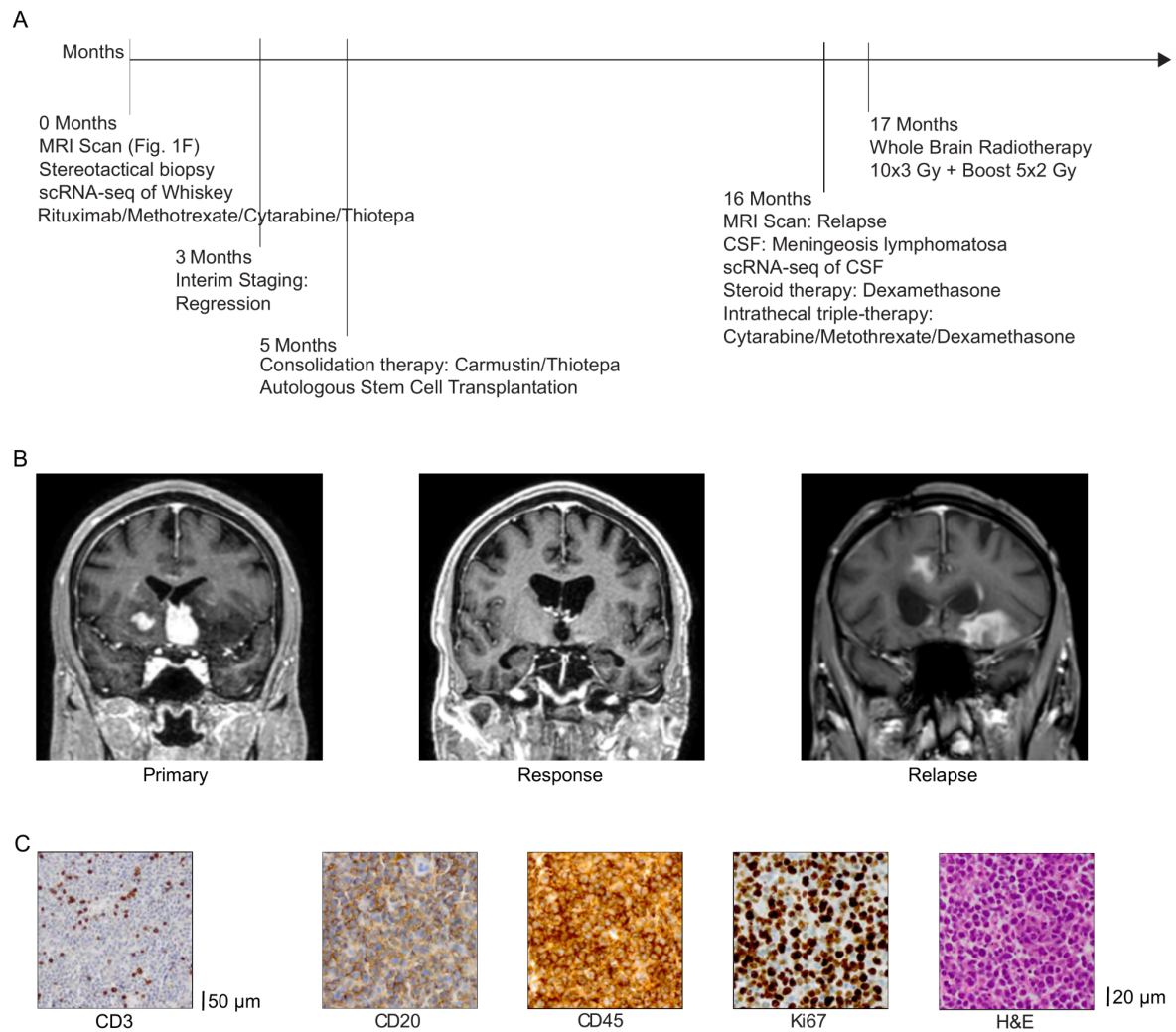
Supplementary Figure 4: Histologies of PCNSL and glioblastoma biopsies



(A-B) Hematoxylin-eosin staining of four PCNSL biopsies . In two cases, the “Whiskey method” was not performed ahead of immunohistochemistry (A) and in the other two cases, the “Whiskey Method” was carried out beforehand (B).

(C-D) Elastica-van-Giesson staining of a glioblastoma (C) and a PCNSL (D)

Supplementary Figure 5: Patient characteristics of patient 1

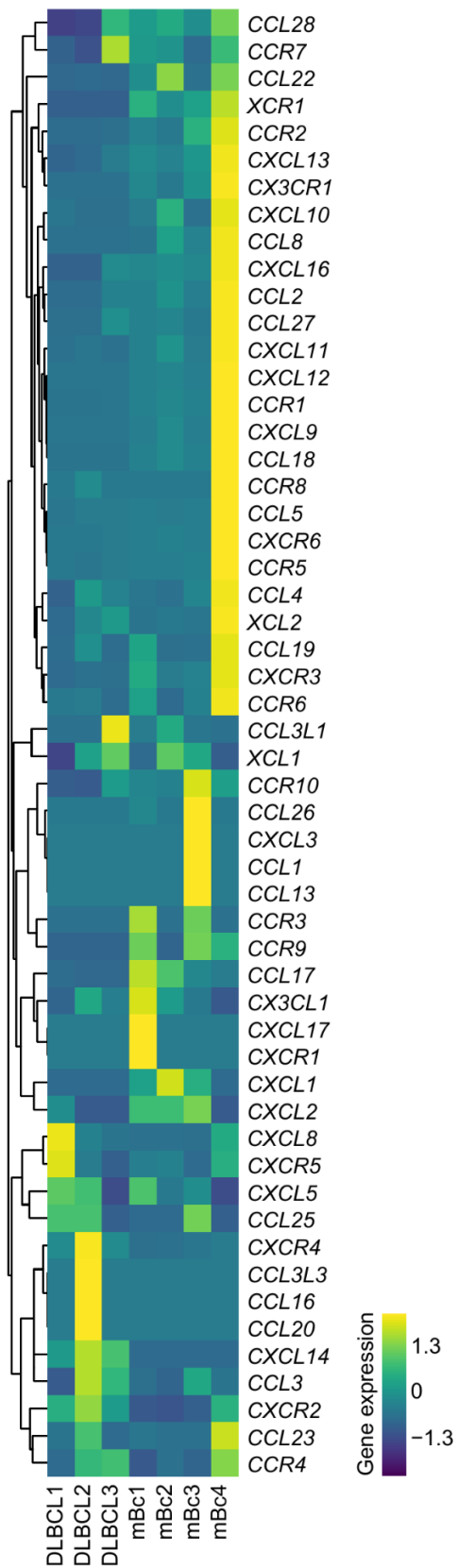


(A) Timeline of clinical course of p1.

(B) Gadolinium enhanced coronal T1 MR images of p1 at primary diagnosis, after response and at relapse.

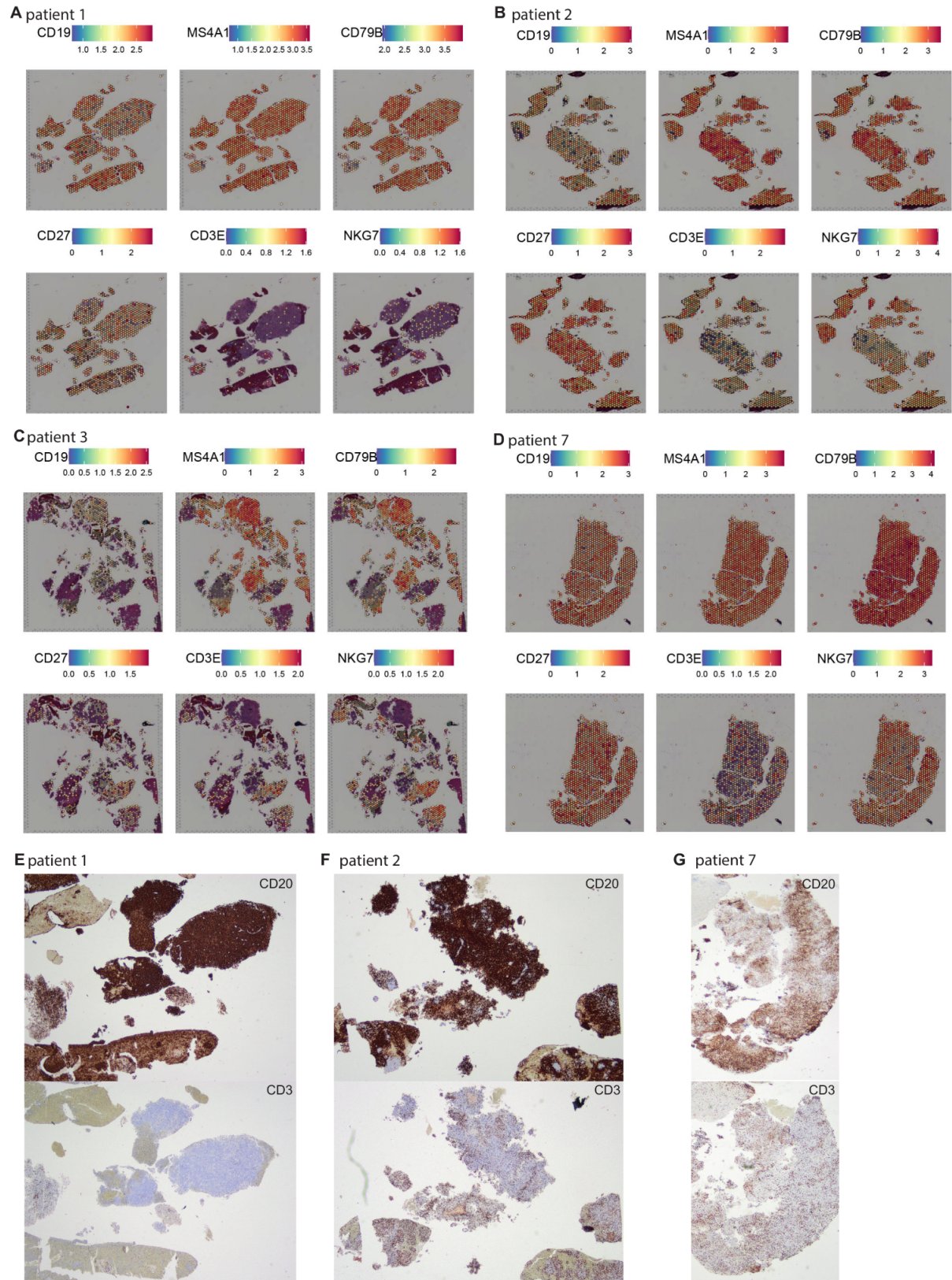
(C) Immunohistochemistry and hematoxylin-eosin staining of p1.

A



(A) Heatmap of chemokines and their receptors in three DLBCL samples from Roider et al. and malignant B cell clusters from this study. Values were scaled row-wise and color encodes gene expression.

Supplementary Figure 7: Spatial transcriptomics in PCNSL



(A-D) Spatial features plots of B cell and T cell markers in p1 (A), p2 (B), p3 (C) and p7 (D). Color and transparency encodes the gene expression.

(E-G) Immunohistochemical staining of B and T cell markers in p1 (E), p2 (F) and p7 (D).

(A-D) Spatial feature plots of the integrated malignant B cell clusters of patients 1 (A), 2 (B), 3 (C) and 7 (D). The transcriptional expression is overlaid on top of the tissue histology. The gene expression of the integrated clusters is encoded by color and transparency.

(E-H) Spatial feature plots of canonical T cell exhaustion markers of patients 1 (E), 2 (F), 3 (G) and 7 (H). The gene expression is encoded by color and transparency.

Gene name - alias: HAVCR2 - TIM3; PDCD1 - PD1

Abbreviations: mBc - malignant B cells; nm - non-malignant B cells