

Figure S1 Landscape of PCD gene variants in OV patients. (A) The volcano plot shows DEGs related to PCD in GTEx and TCGA-OV patients, with blue indicating down-regulation, red indicating up-regulation, and grey indicating no significant difference in TCGA-OV patients who undergo surgery. (B) GO and KEGG pathway enrichment analysis based on DEGs related to PCD. (C) Venn diagram showing the overlap between DEGs related to PCD and PCD genes associated with patient prognosis. (D) Circos plot shows the expression of 28 PCD genes in TCGA-OV, GSE9891, GSE26712, GSE49997 and GSE63885 cohorts. (E) The location and CNV level of 28 PCD-related DEGs in the TCGA-OV cohort. PCD, programmed cell death; DEGs, differentially expressed genes; PCDI, programmed cell death index; CNV, copy number variation; GTEx, Genotype-Tissue Expression; TCGA-OV, The Cancer Genome Atlas-Ovarian Cancer.

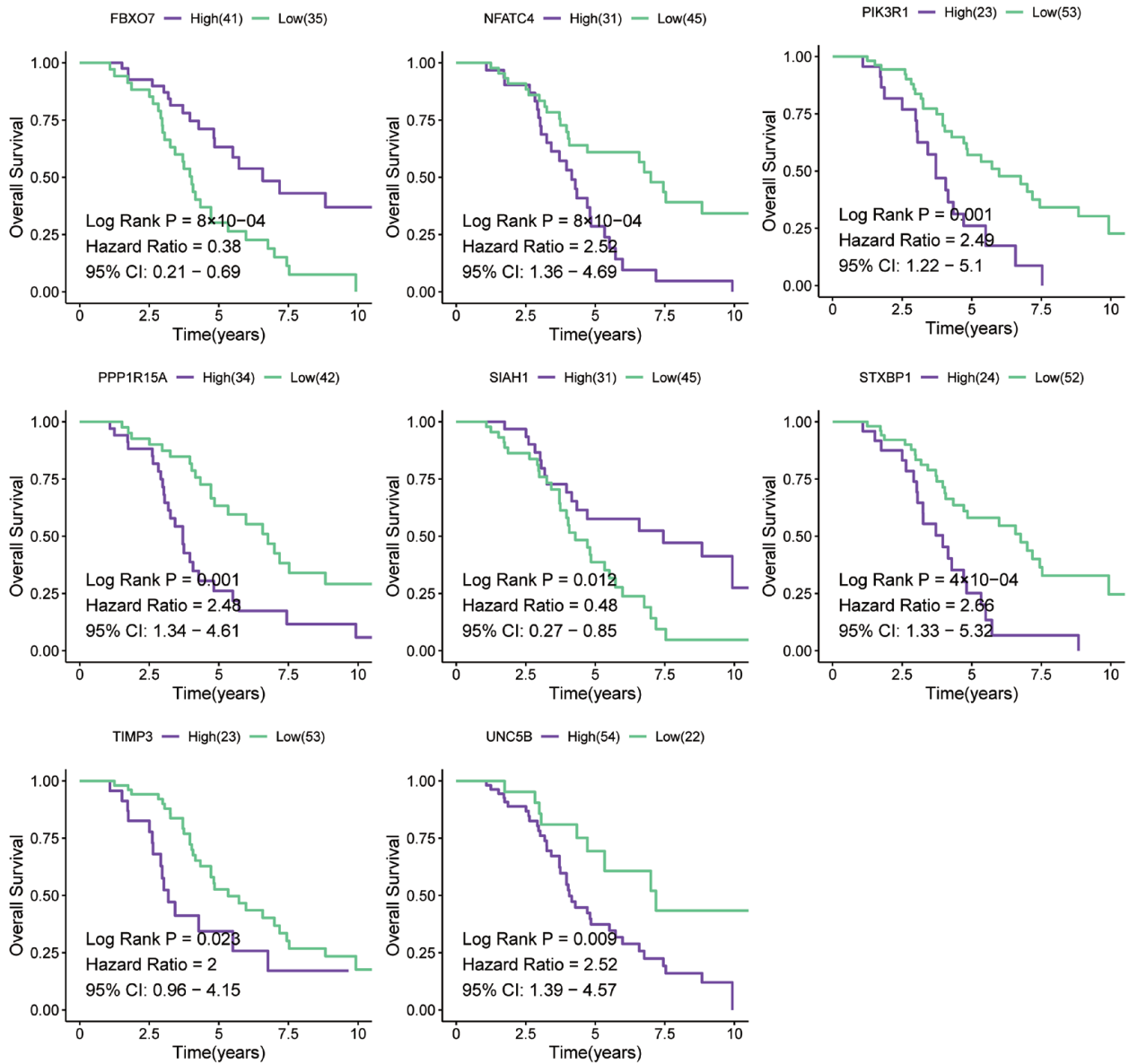


Figure S2 Investigation of the prognostic correlation between PCD-related genes in this model. (A) Kaplan-Meier of 8 PCD associated genes in model. PCD, programmed cell death.

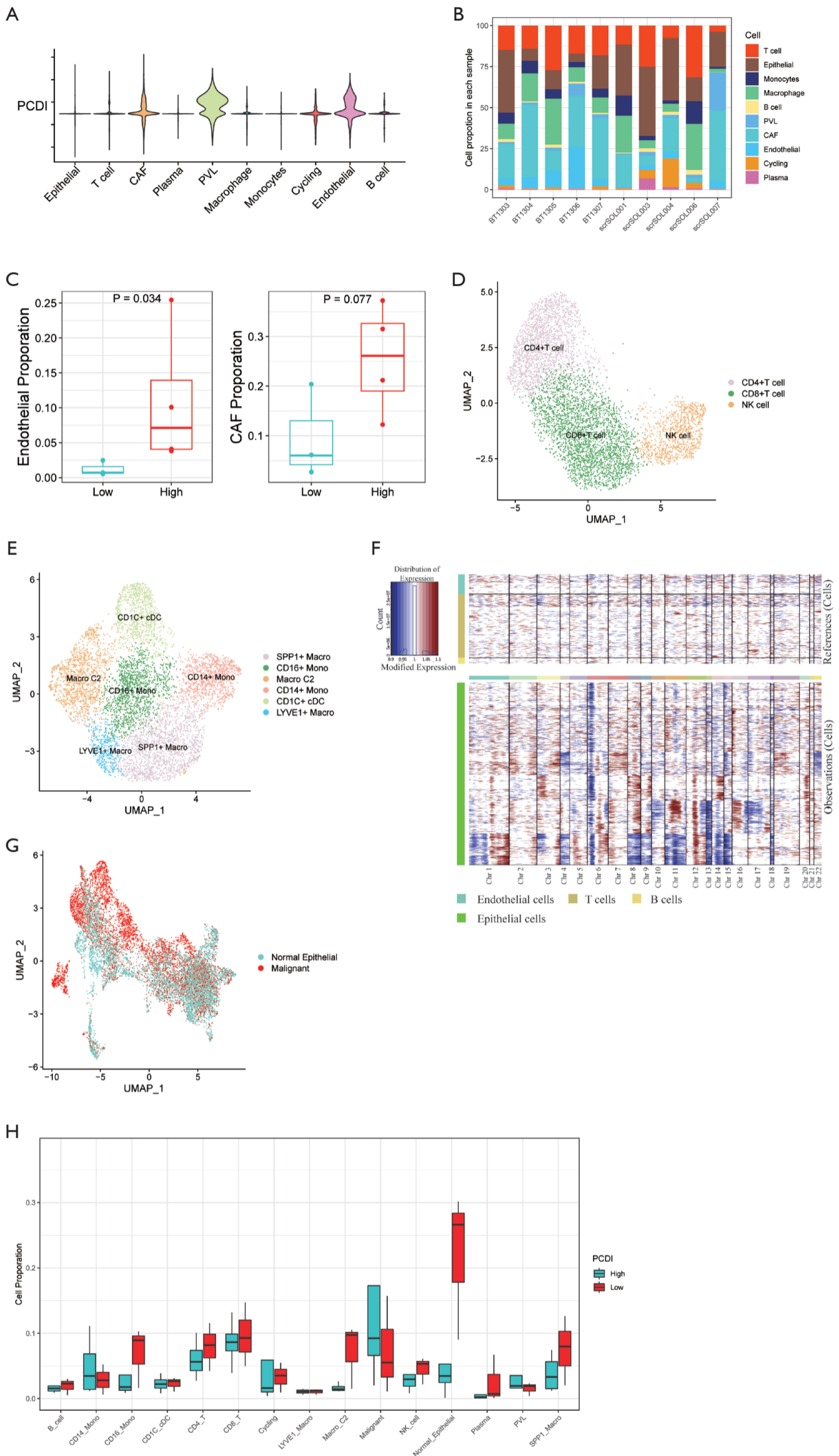


Figure S3 Single-cell analysis reveals the association between the PCD index and the immune microenvironment. (A) The PCDI for each cell types. (B) Bar plot indicating the proportion of each cell type in each sample. (C) Box plots comparing the proportion of Endothelial and CAF in high- vs. low-PCDI groups. (D) UMAP plot showing the composition of three min cell types divided from T & NK cell group. (E) UMAP plot showing the composition of six min cell types divided from macrophage & monocytes cell group. (F) InferCNV identification malignant epithelial cells from epithelial cell group. (G) UMAP plot showing the distribution of malignant and normal epithelial cells. (H) Box plots comparing different cell types in high- vs. low-PCDI groups. PCD, programmed cell death; PCDI, programmed cell death index; UMAP, Uniform Manifold Approximation and Projection; CAF, cancer associated fibroblast; PVL, perivascular-like cell.

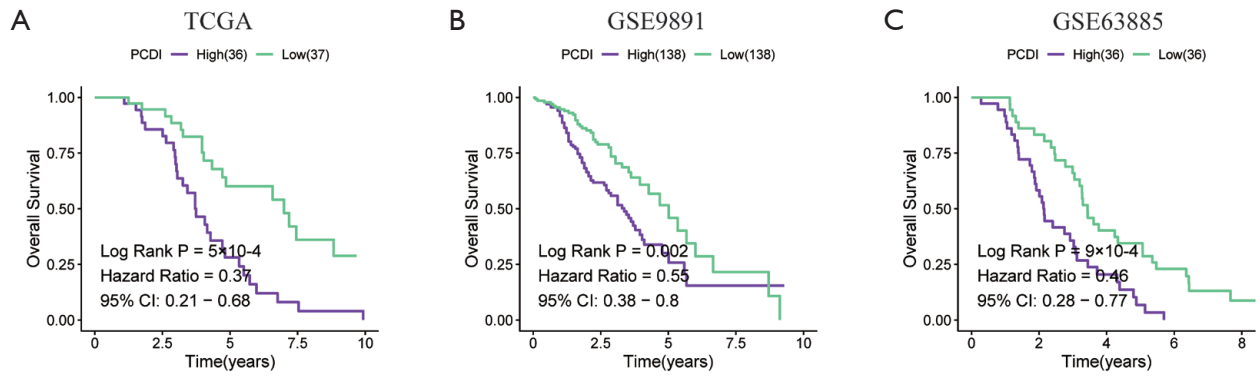


Figure S4 Validation of the model's accuracy using median PCD score. Kaplan-Meier of PCDI in three cohorts: (A) TCGA dataset, (B) GSE9891 dataset, (C) GSE63885 dataset. PCD, programmed cell death; DEGs, differentially expressed genes; PCDI, programmed cell death index.