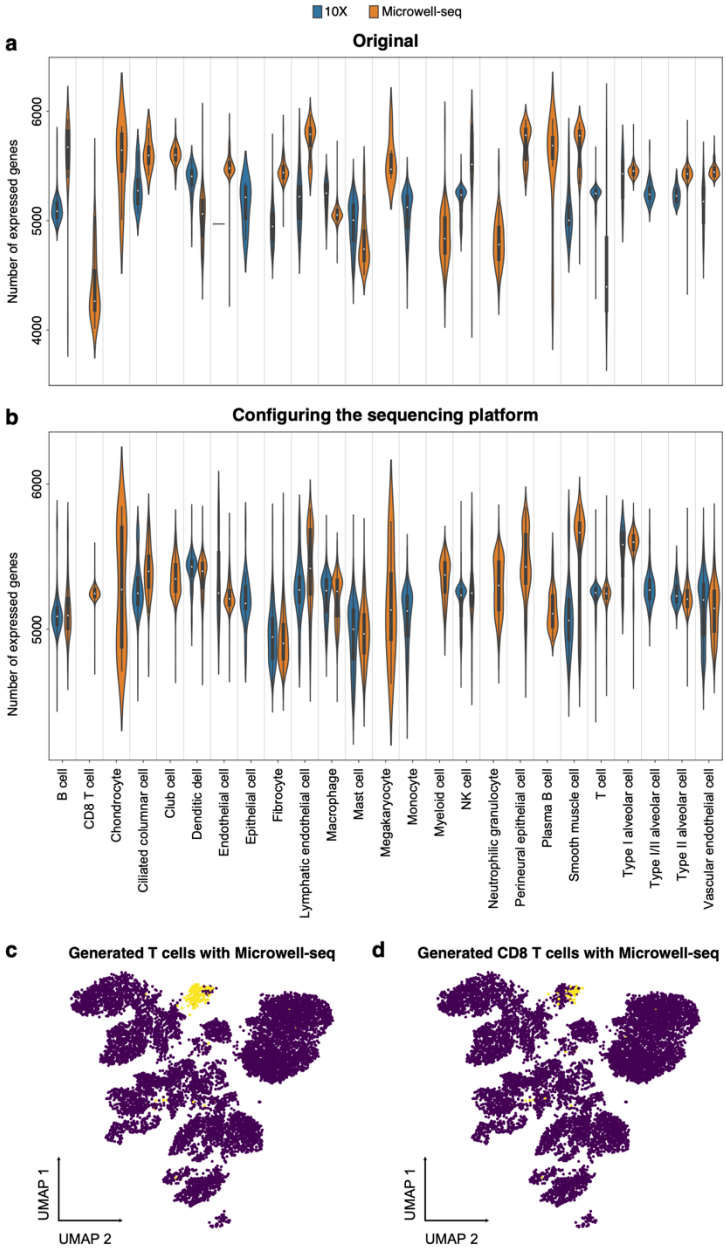
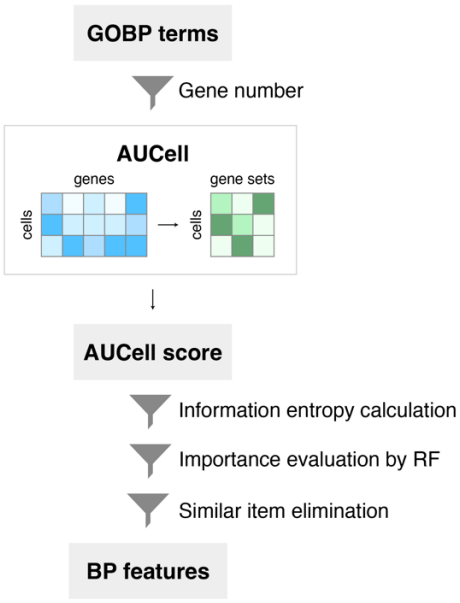
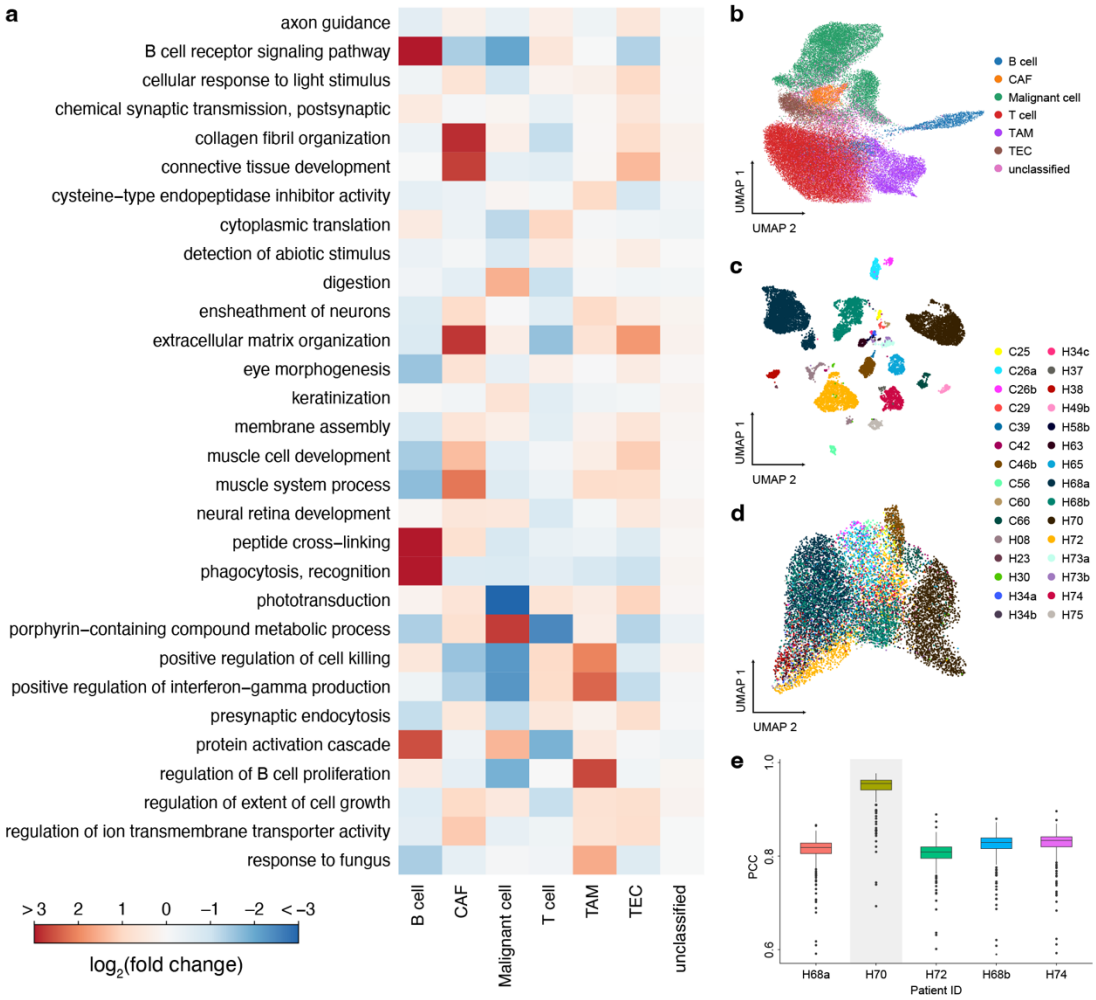
Supplemental Materials



Supplemental Figure 1. Distribution of the number of expressed genes with different sequencing platforms in the original cells (a) and cells with sequencing platformed reconfigured into 10X (b). (c) The UMAP plot of original cells (blue) and cells with the cell type reconfigured into T cells with Microwell-seq (yellow). (d) The UMAP plot of original cells (blue) and cells with the cell type reconfigured into CD8 T cells by Microwell-seq (yellow). For (c) and (d), for each generated cell, we calculated its nearest neighbor in the original dataset for visualization.



Supplemental Figure 2. The generation of BP features.



Supplemental Figure 3. (a) Fold changes of BP features of each cell type in the HCC dataset. (b) UMAP visualizations of the GOBP latent dimensions of the HCC dataset. Cells are colored by cell types. (c-d) The UMAP plot showing the landscape of the malignant cells in the HCC dataset, represented by PCA (c) and the pre-trained UniCoord model (d). Cells are colored by sample IDs. (e) PCCs between generated cells and the mean gene expression of malignant cells in each patient. The cells are generated by reconfiguring the patient ID of malignant cells from patient H72 as H70. The reconfigured target sample ID is shaded in grey.

Supplemental Table 1. The list of BP features.

BP features	number of genes
axon guidance	280
B cell receptor signaling pathway	153
cellular response to light stimulus	136
chemical synaptic transmission, postsynaptic	176
collagen fibril organization	106
connective tissue development	251
cysteine-type endopeptidase inhibitor activity	56
cytoplasmic translation	151
detection of abiotic stimulus	147
digestion	144
ensheathment of neurons	135
extracellular matrix organization	418
eye morphogenesis	150
keratinization	227
membrane assembly	202
muscle cell development	171
muscle system process	437
neural retina development	70
peptide cross-linking	102
phagocytosis, recognition	154
phototransduction	58
porphyrin-containing compound metabolic process	53
positive regulation of cell killing	72
positive regulation of interferon-gamma production	72
presynaptic endocytosis	64
protein activation cascade	229
regulation of B cell proliferation	63
regulation of extent of cell growth	110
regulation of ion transmembrane transporter activity	265
response to fungus	58