

Description of Additional Supplementary Files

Supplementary Data 1. All datasets collection in DeepMAPS.

Supplementary Data 2. Curated marker for cell cluster annotation in CITE-seq case study

Supplementary Data 3. UMAPs of all 128 embeddings of CITE-seq case data

Supplementary Data 4. Curated marker genes for cell cluster annotation in the scRNA ATAC-seq case study

Supplementary Data 5. Comparison of public single-cell analysis servers

Supplementary Data 6. Computing time comparison (h/m/s)