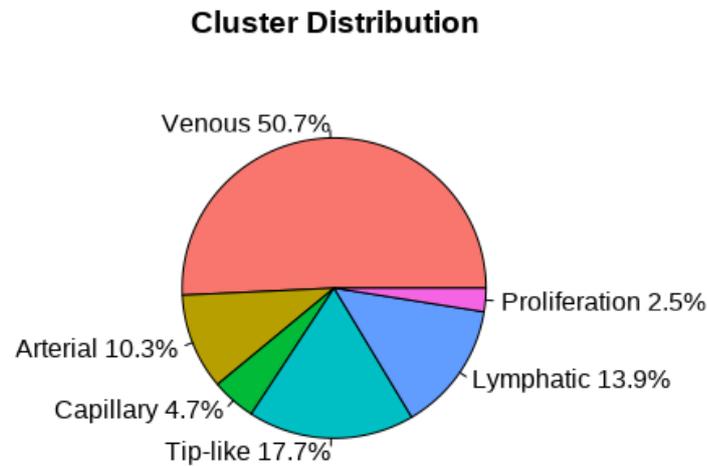
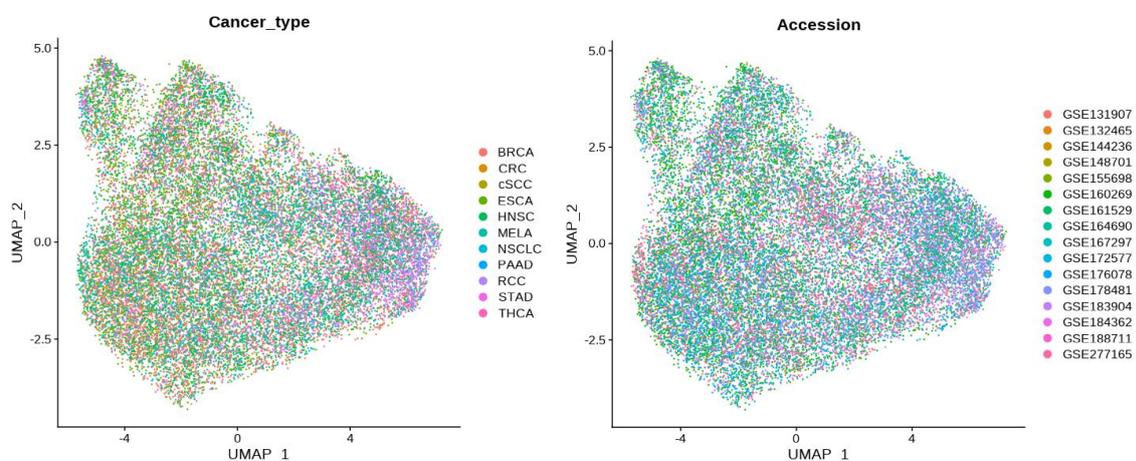


Supplementary Figures

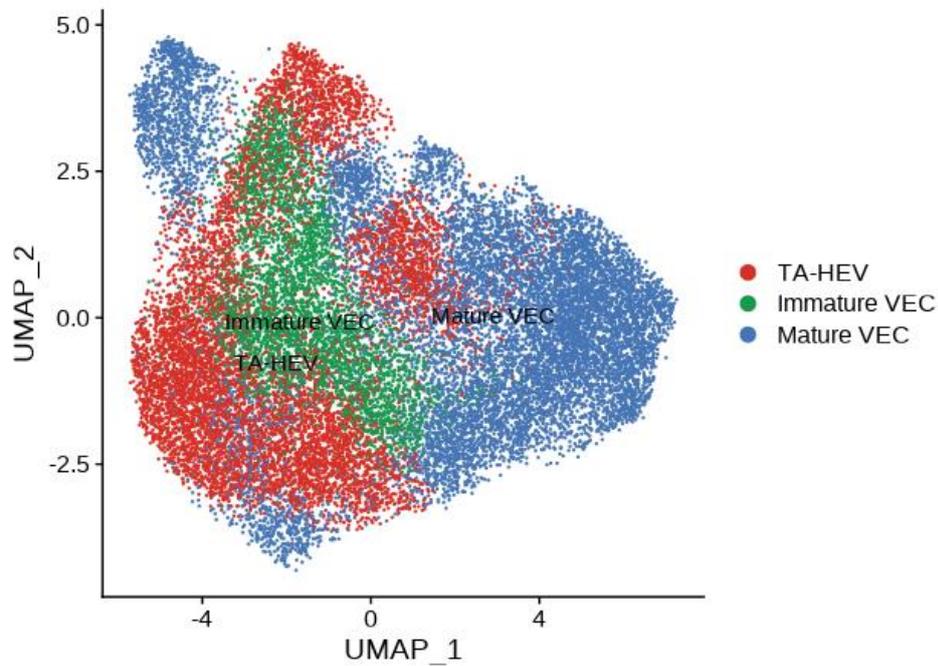
Supplementary Figure 1. Distribution of endothelial cell (EC) subtypes within tumor-associated endothelial cells.



Supplementary Figure 2. UMAP visualization shows even distribution of venous EC subclusters across tumor types and datasets.



Supplementary Figure 3. UMAP visualization of venous EC subclusters classified as tumor-associated high endothelial venule (TA-HEV), immature, and mature venous ECs (VECs).



Supplementary Figure 4. Subcluster 0 shows significantly higher IL6 expression among TA-HEV subclusters. (Student's t-test, $*p < 0.05$, $**p < 0.01$, $***p < 0.001$, $****p < 0.0001$)

