

Supplementary Material

corresponding to:

Single-cell transcriptomics defines Dot1L interacting partners and downstream target genes in the mouse molar dental pulp

ROSA GUZZO, BADAM ENKHMANDAKH, TIMOTHY BECKER, PUJAN JOSHI, PAUL ROBSON,
ANUSHREE VIJAYKUMAR, MINA MINA, DONG-GUK SHIN, DASHZEVEG BAYARSAIHAN

Supplemental Figure 1. Expression patterns of representative genes that define clusters 1 to 15. Violin plots of the genes *Lmo4*, *Lef1*, *Tcf3*, *Tcf4*, *Tcf7*, *Sp7*, *Runx2*, *Alpl*, *Col1a1*, *Cebpb*, *Sp1*, *Tgfb2*, *Bmpr1a*, *Fgfr2*, *Fgfr3* and *Wnt5a*.

Supplemental Figure 2. Expression patterns of the neural crest master regulator genes. Violin plots of the genes *Dlx5*, *Dlx6*, *Snai1*, *Snai2*, *Twist1*, *Twist2*, *Msx1*, *Msx2*, *Sox5*, *Sox9*, *Ets1*, *Myc*, *Id1*, *Id2*, *Id4* and *Ebf1*.

Supplemental Figure 3. Expression patterns of representative genes that define odontoblasts. UMAP visualization of *Bglap*, *Dmp1* and *Dspp* genes. *Dmp1* is also weakly expressed in pericytes (cluster 12), whereas *Dspp* is present in ameloblasts (cluster 14).

Supplemental Figure 4. Expression patterns of representative genes that may define dental pulp stem cells. Violin plots of the genes *Plp1*, *Cspg4*, *Gli1*, and *Sox2* (left). UMAP visualization of these genes (right).

Supplemental Figure 5. Expression patterns of representative genes that define immune cells (cluster 11). Violin plots of the genes *Fcer1g*, *Tyrbp*, *Csf1r* and *Pf4* (left). UMAP visualization of these genes (right).

Supplemental Figure 6. Expression patterns of representative genes that define pericytes (cluster 12). Violin plots of the genes *Rgs5*, *Ndufa4l2*, *Casq2* and *Acta2* (left). UMAP visualization of these genes (right).

Supplemental Figure 7. Expression patterns of representative genes that define mitotic MSCs (cluster 13). Violin plots of the genes *Mxd*, *Nusap1*, *Spc25* and *Birc5* (left). UMAP visualization of these genes (right).

Supplemental Figure 8. Expression patterns of representative genes that define ameloblasts (cluster 14). Violin plots of the genes *Amelx*, *Enam*, *Krt5* and *Krt14* genes (left). UMAP visualization of these genes (right).

Supplemental Figure 9. Expression patterns of representative genes that define endothelial cells (cluster 15). Violin plots of the genes *Cdh5*, *Plvap*, *Emcn* and *Gpihbp1* (left). UMAP visualization of these genes (right).

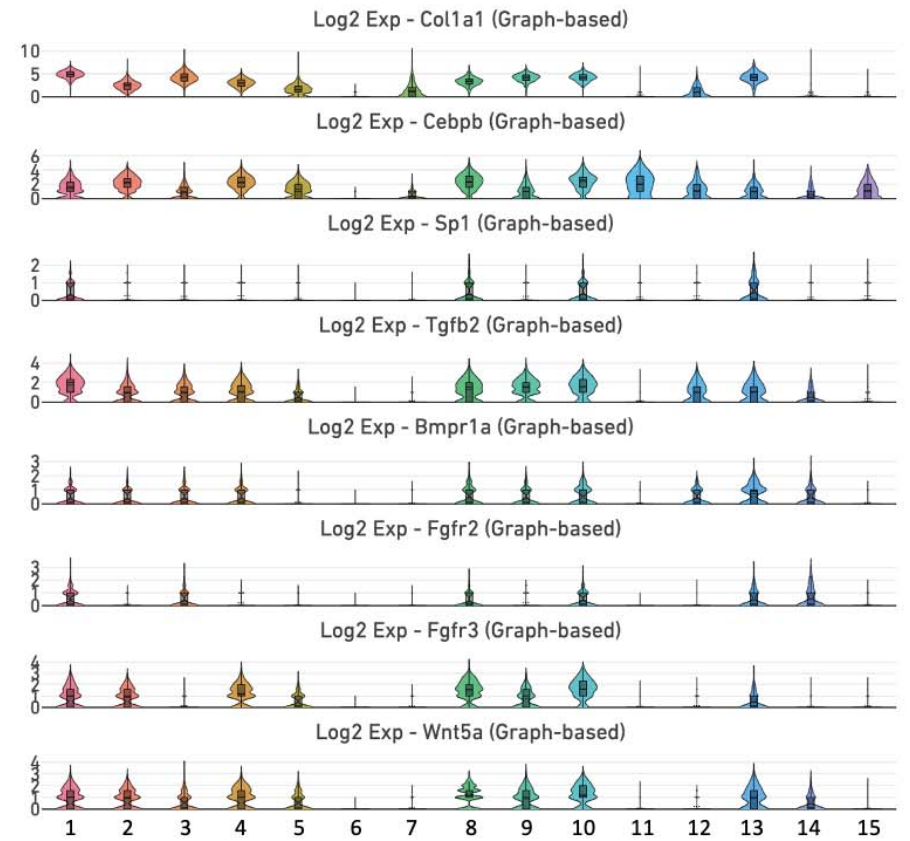
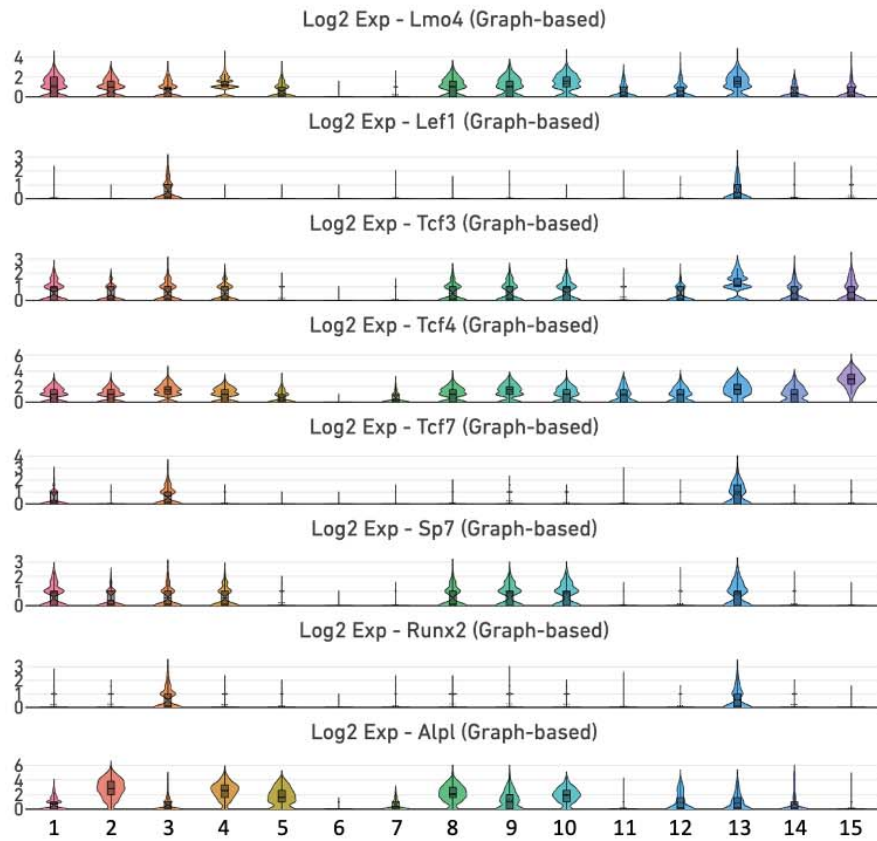
Supplemental Figure 10. Expression patterns of representative genes encoding Dot1L interacting partners. UMAP visualization of *Dot1L*, *Setd2*, *Sirt1*, *Brd4*, *Iws1*, and *Bptf* genes.

Supplemental Figure 11. Expression patterns of representative genes encoding Dot1L interacting partners. UMAP visualization of the genes *Suv39h1*, *Cbx3*, *Dnmt1*, *Eed*, *Mllt1* and *Mllt6*.

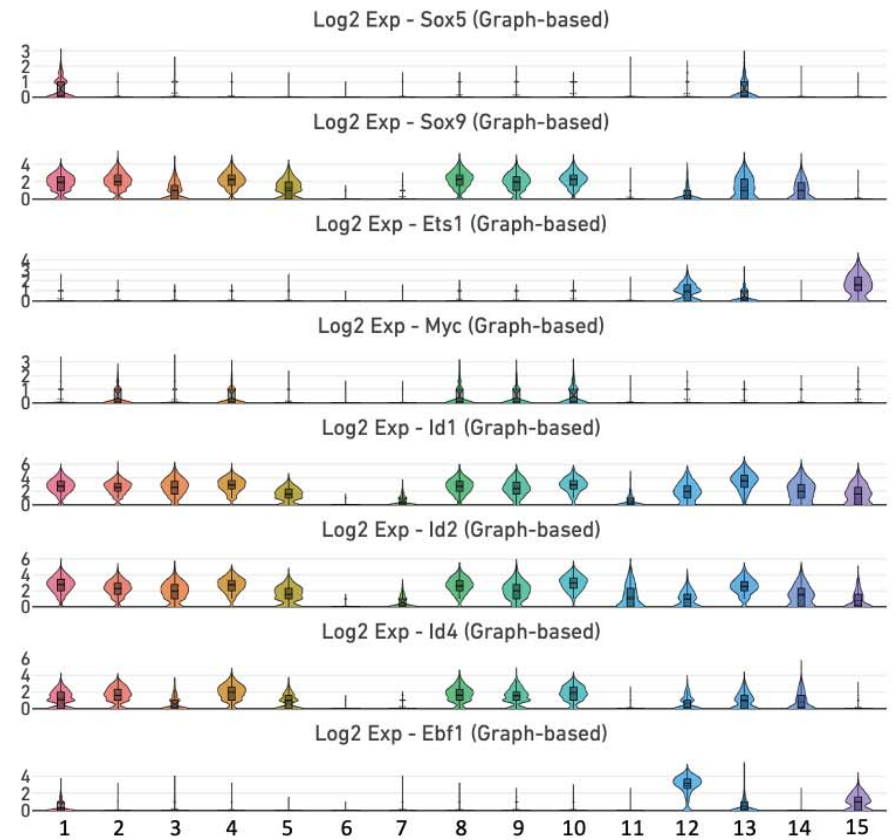
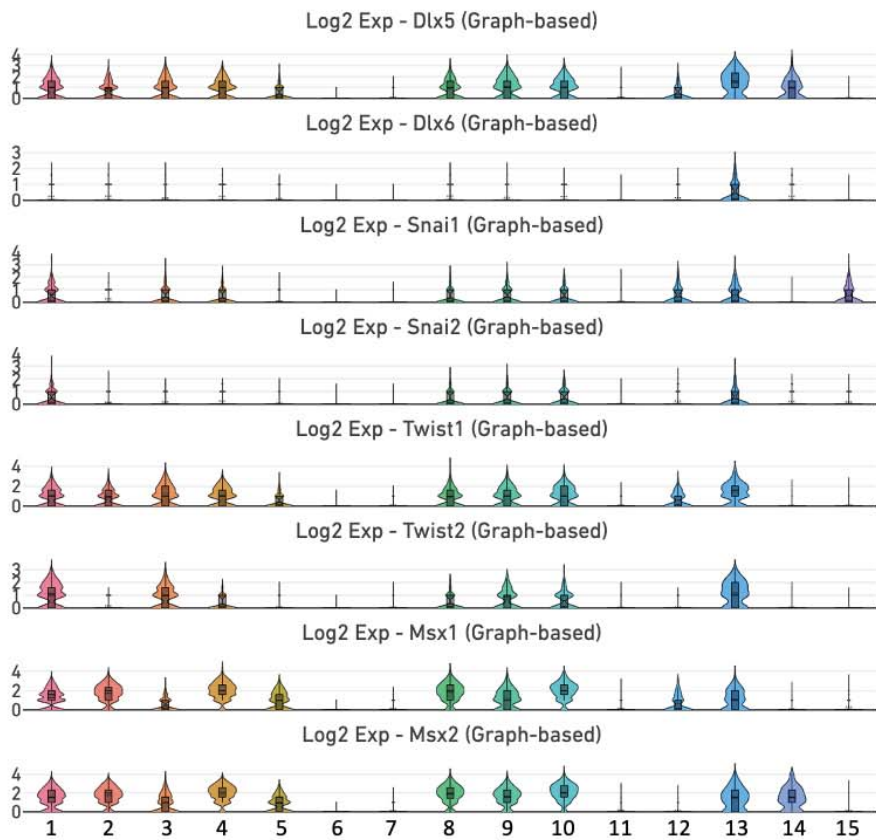
Supplemental Figure 12. Expression patterns of representative genes encoding Dot1L interacting partners. UMAP visualization of the genes *Mllt10*, *Aff1*, *Cdk9*, *Ccnt1*, *Pcna* and *Cdk1*.

Supplemental Figure 13. Expression patterns of representative genes encoding Dot1L interacting partners. UMAP visualization of the genes *Cdk4*, *E2f1* and *E2f8*.

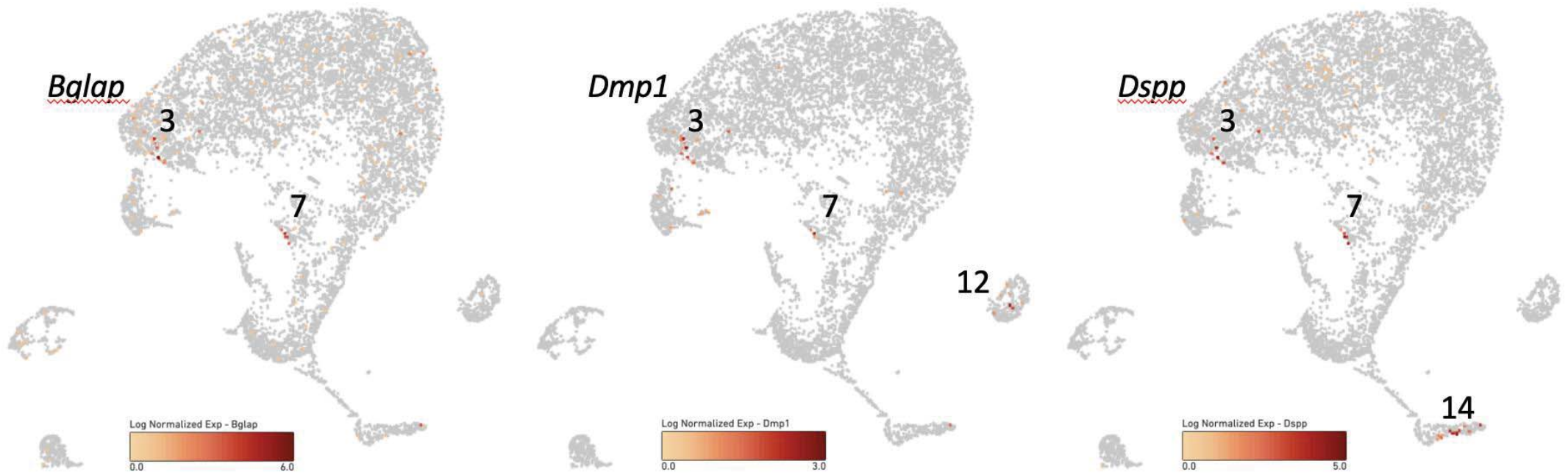
Supplemental Table 1. Representative list of genes from the 15 cell clusters of the mouse molar dental pulp.



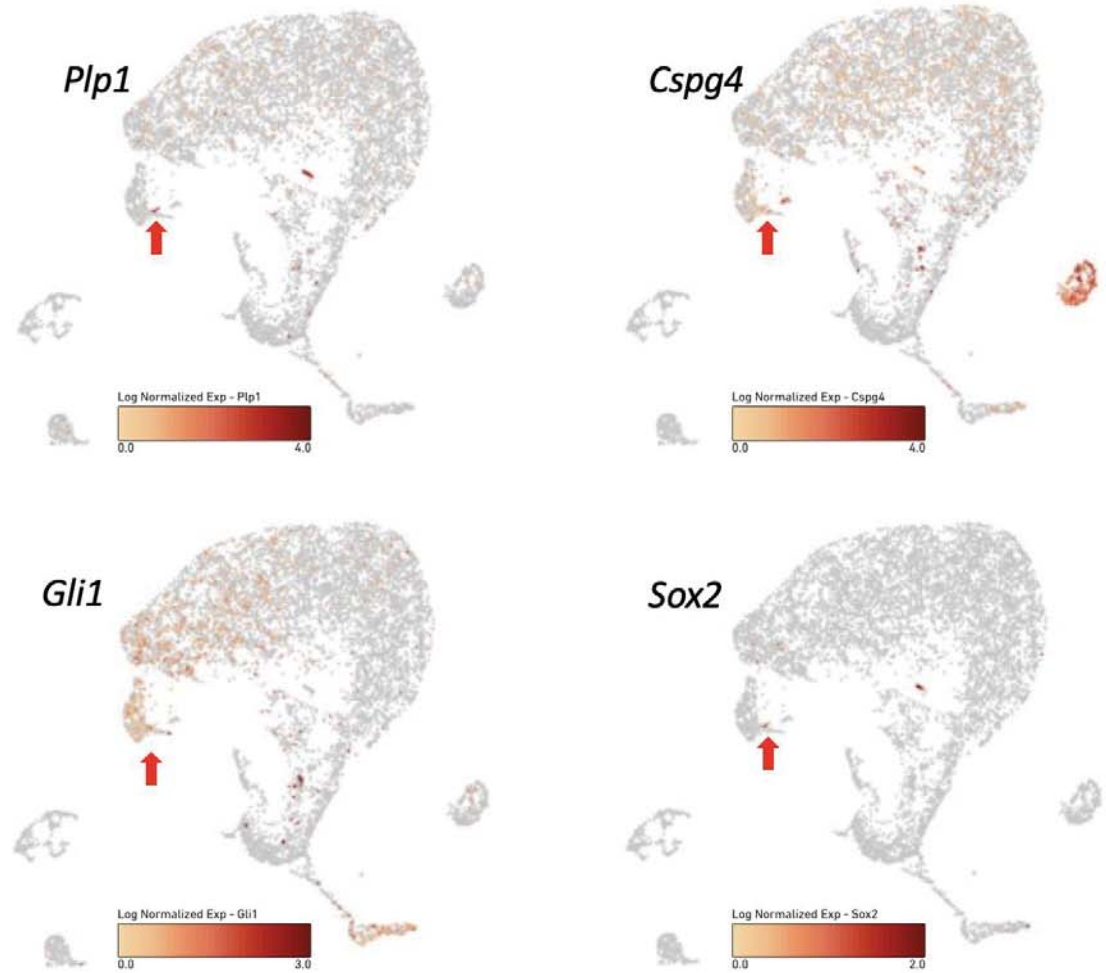
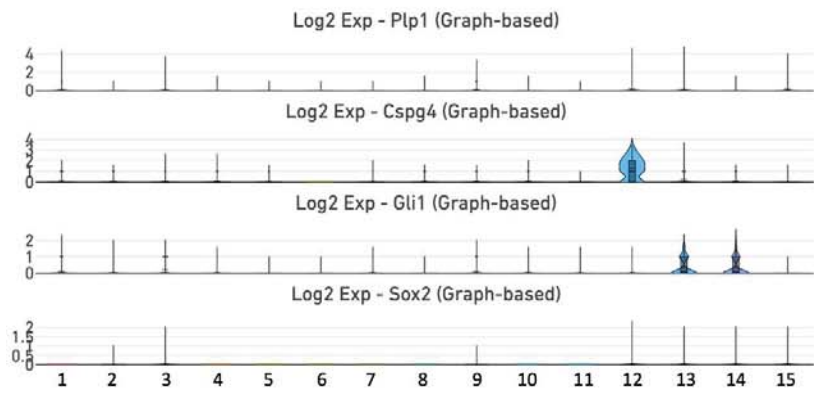
Supplemental Figure 1



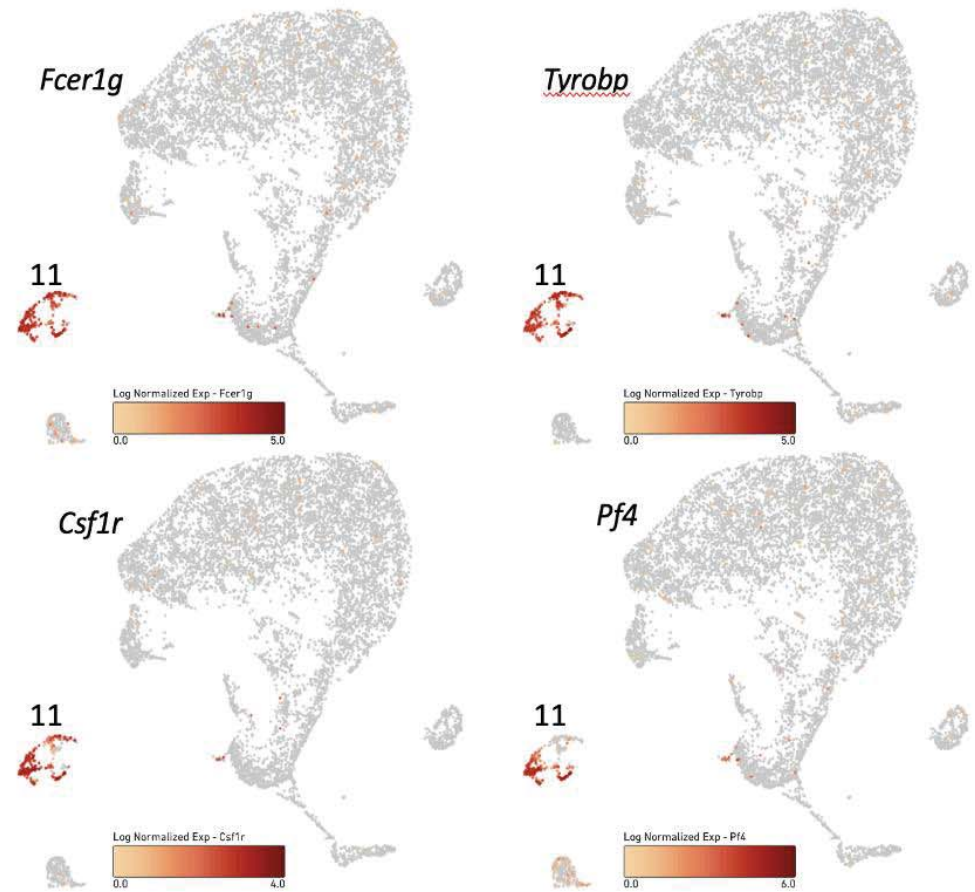
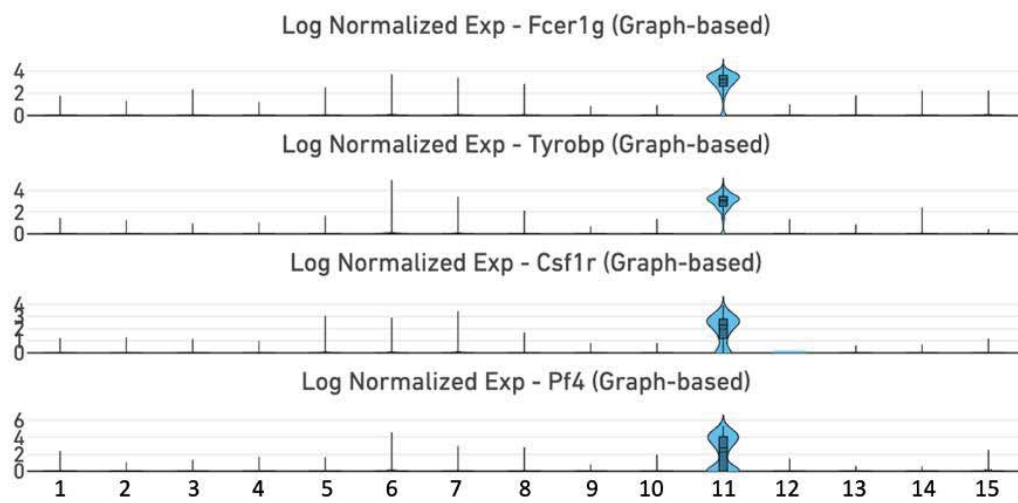
Supplemental Figure 2



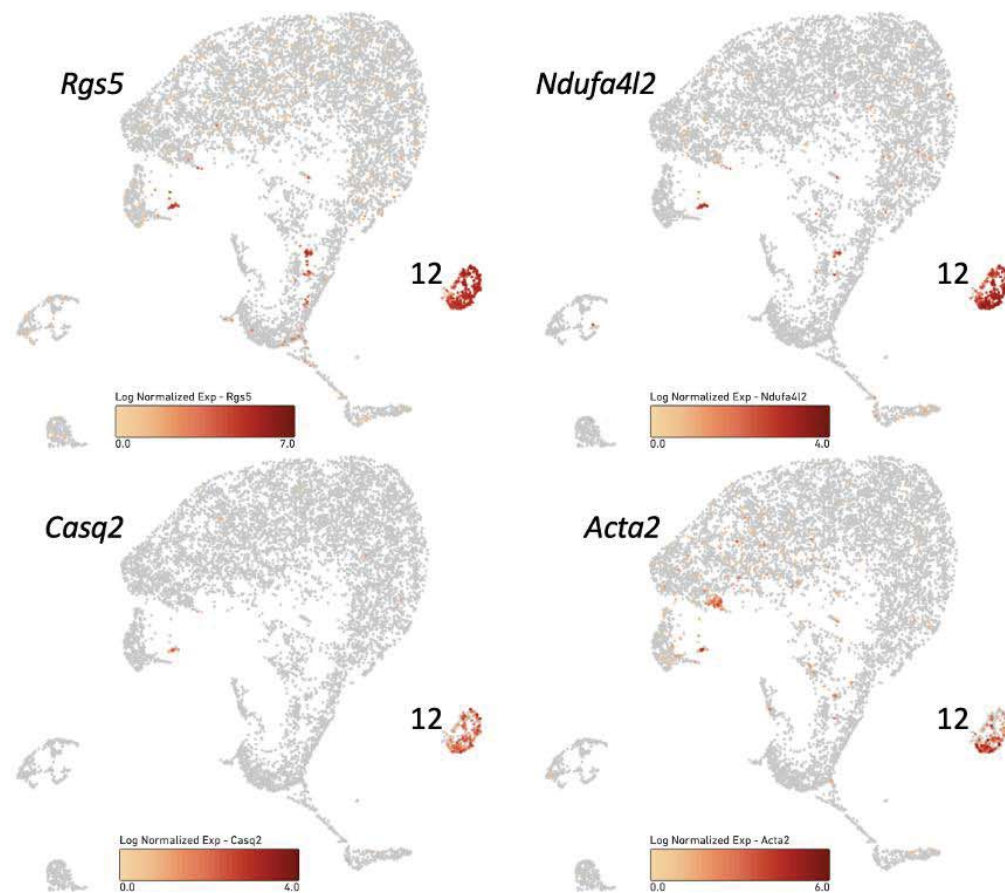
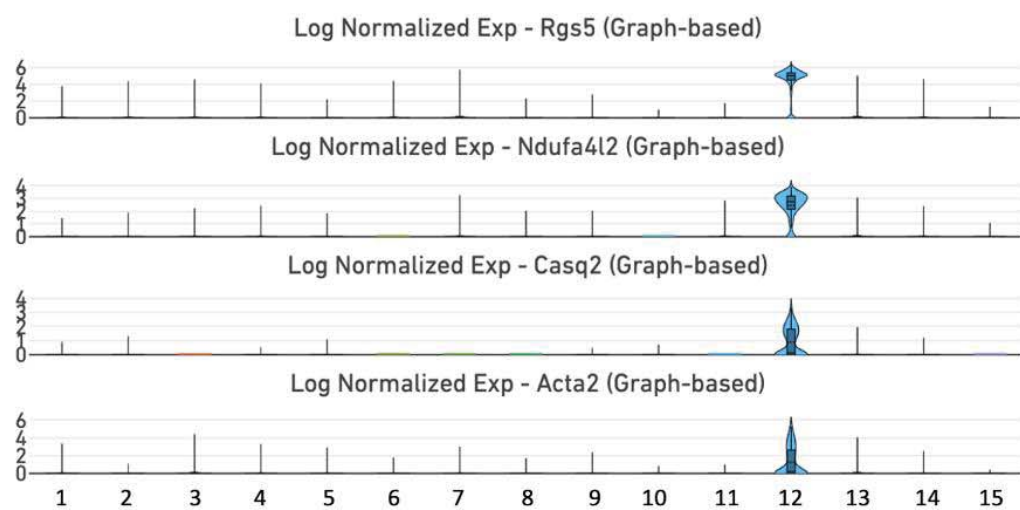
Supplemental Figure 3



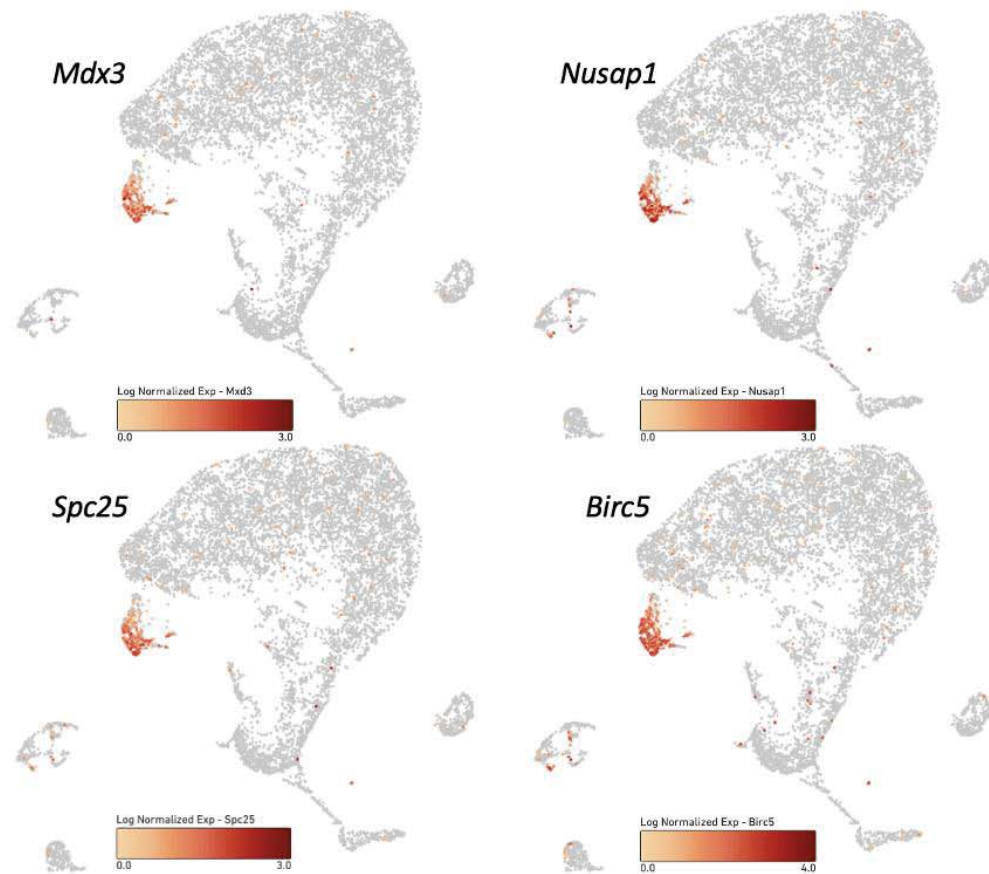
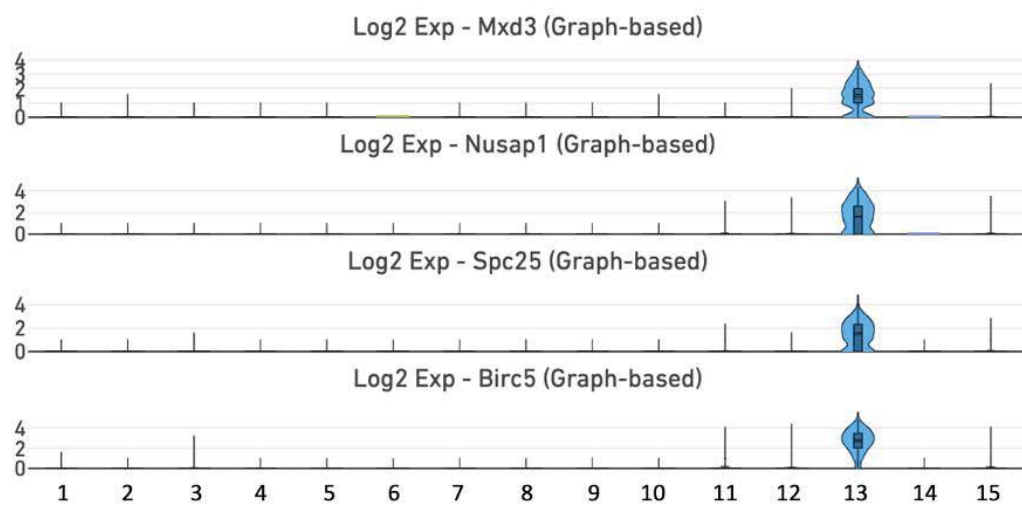
Supplemental Figure 4



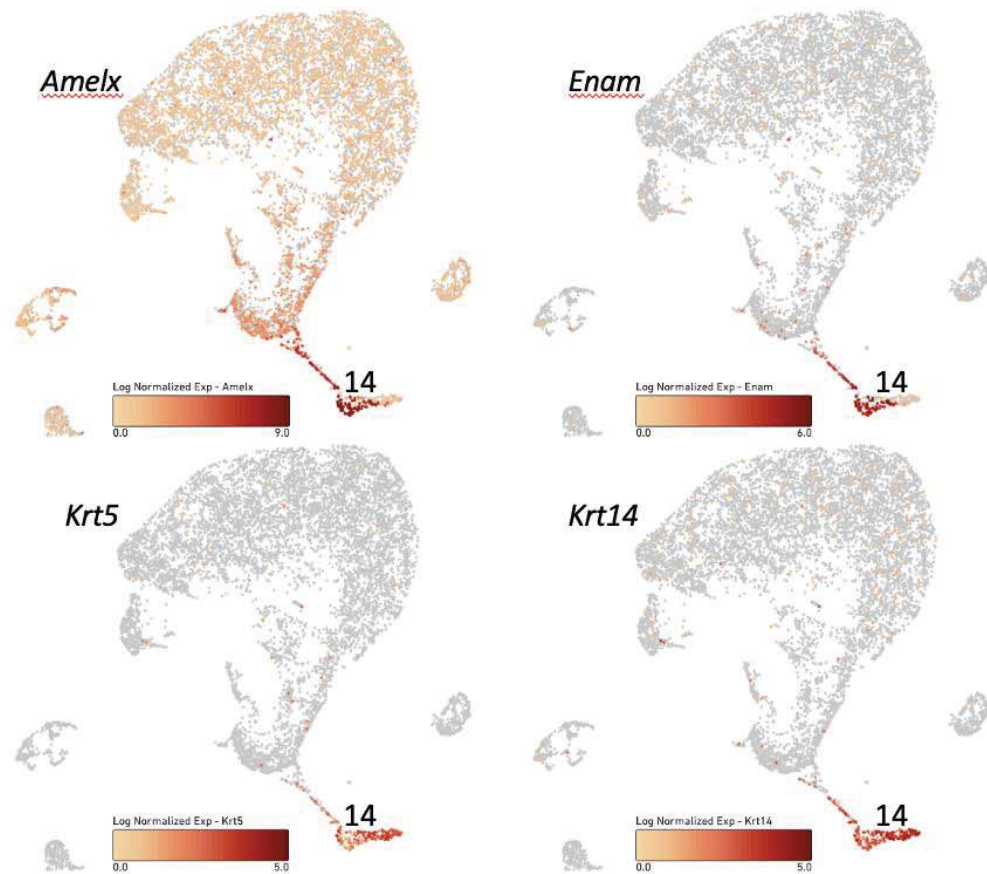
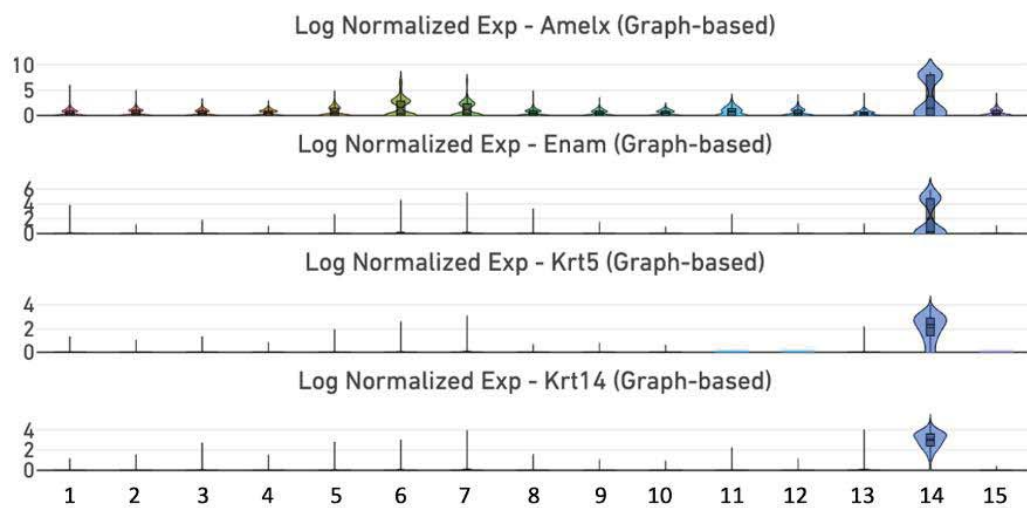
Supplemental Figure 5



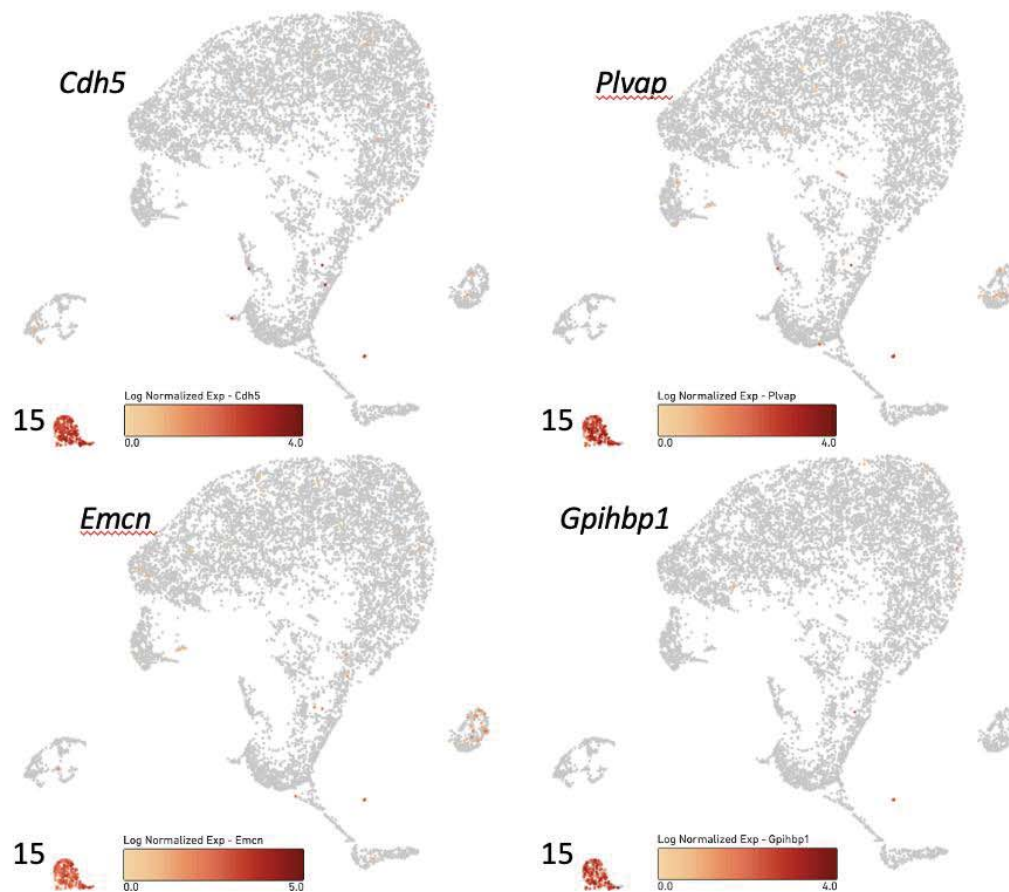
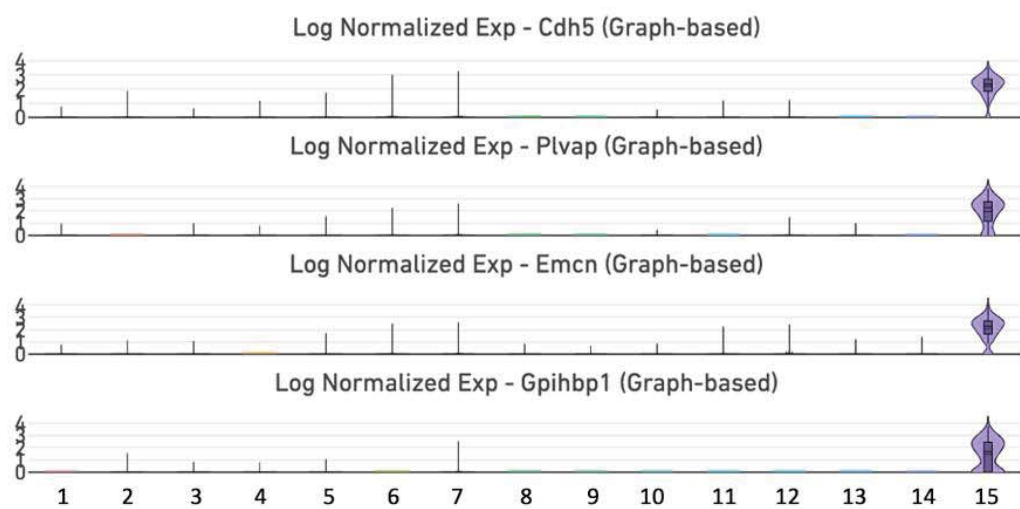
Supplemental Figure 6



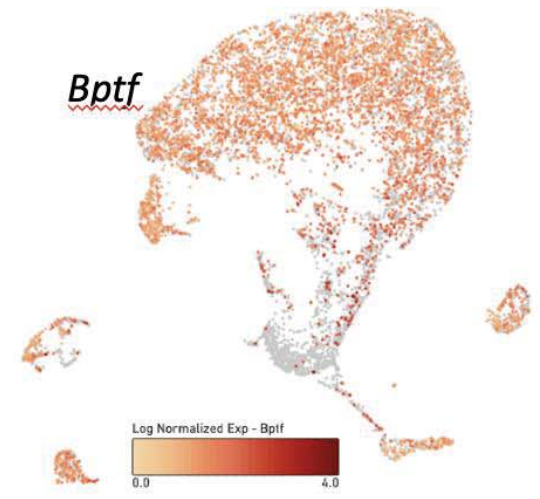
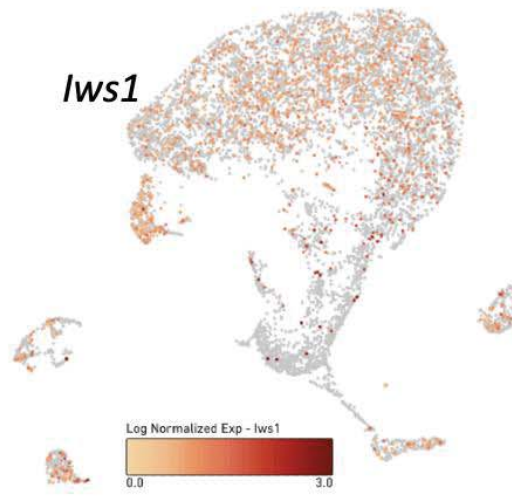
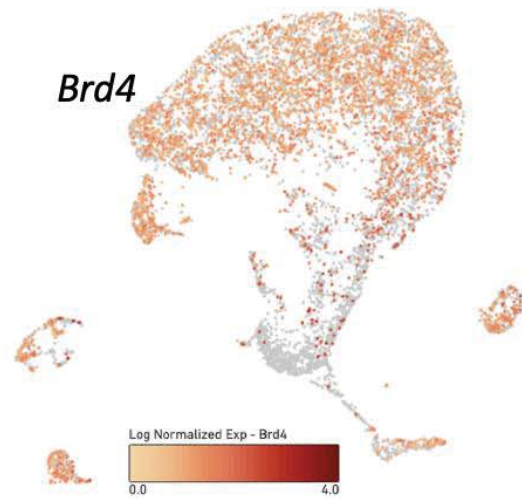
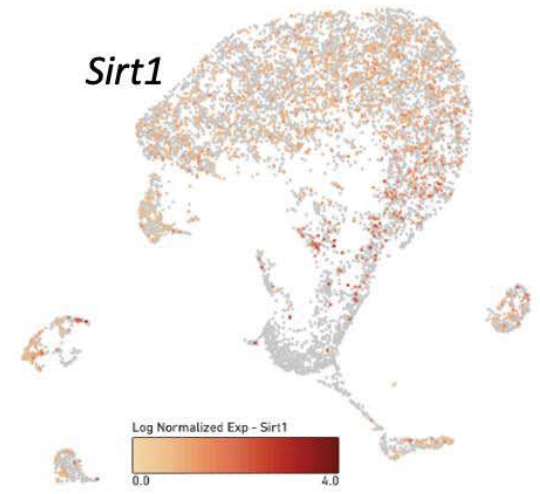
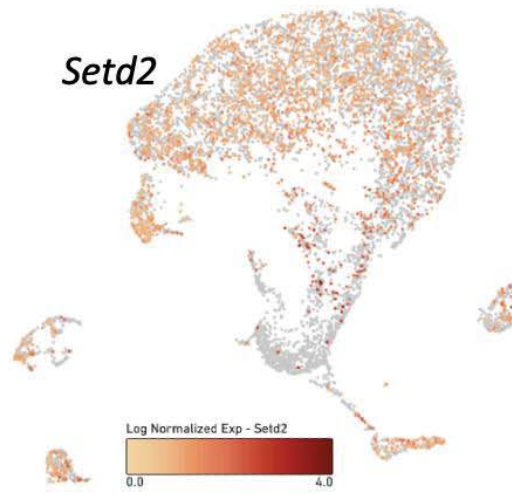
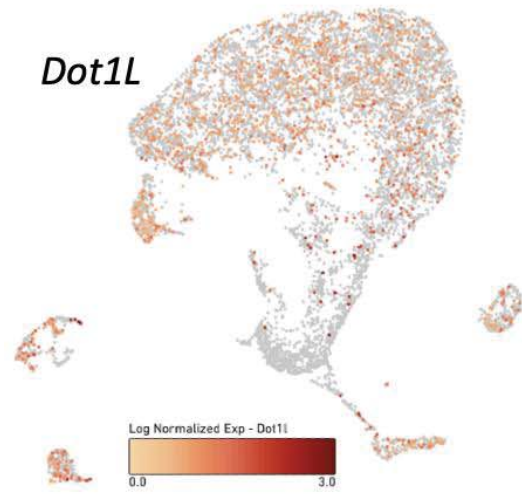
Supplemental Figure 7



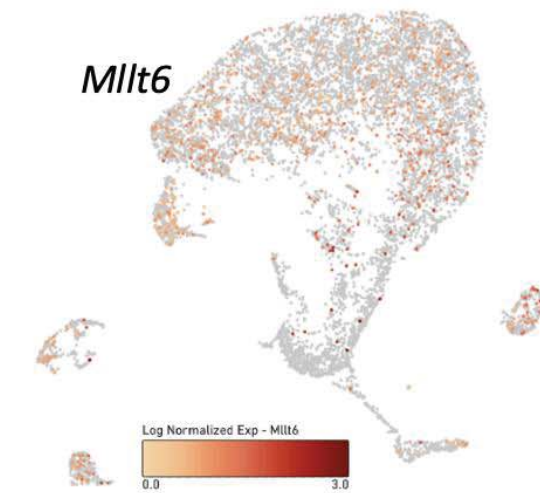
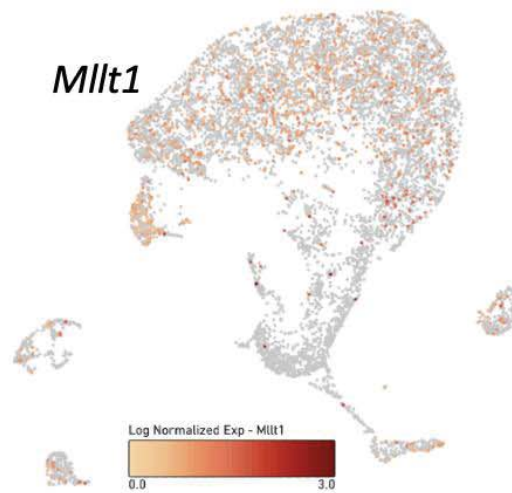
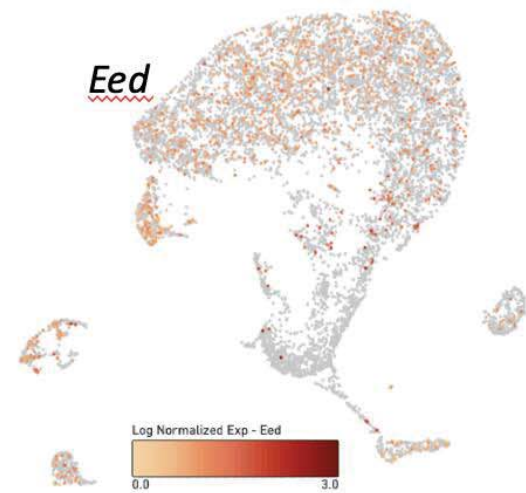
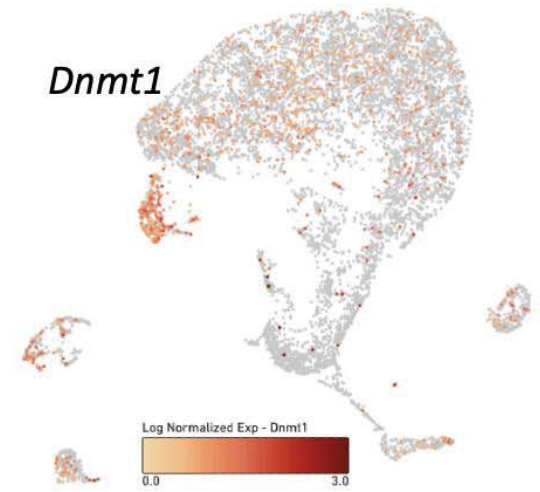
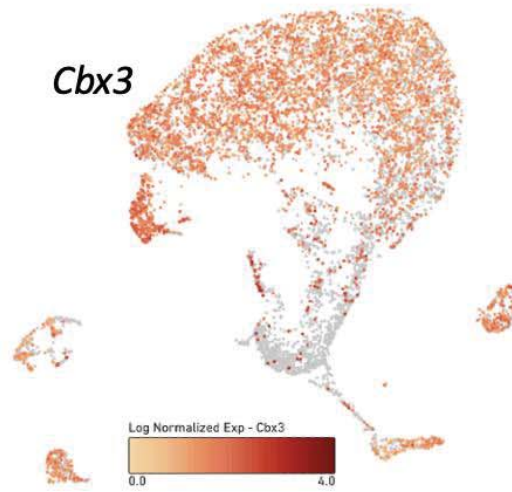
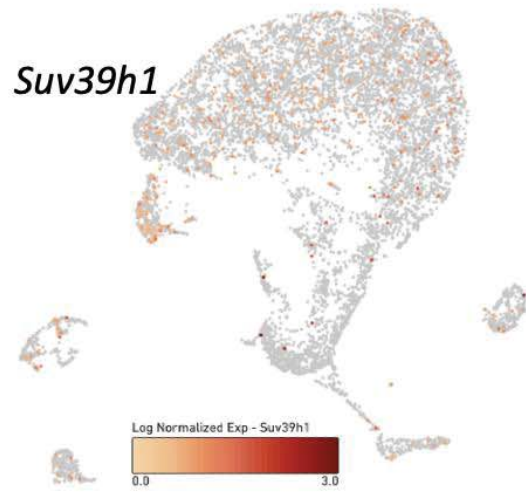
Supplemental Figure 8



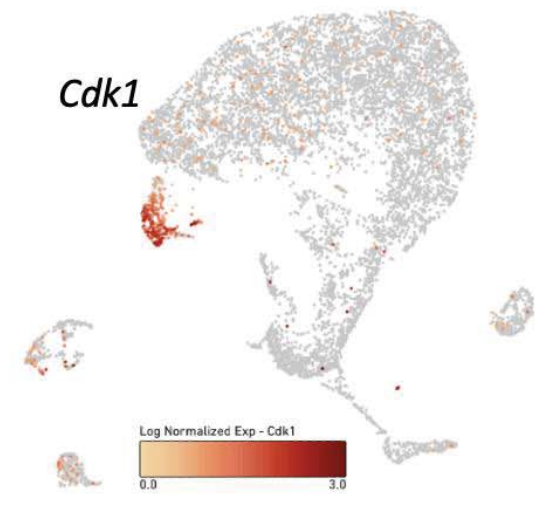
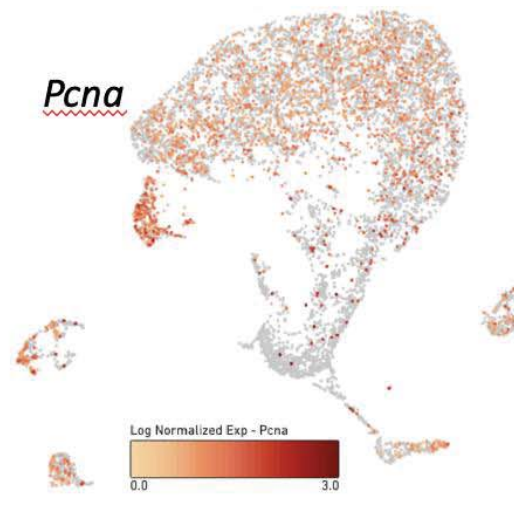
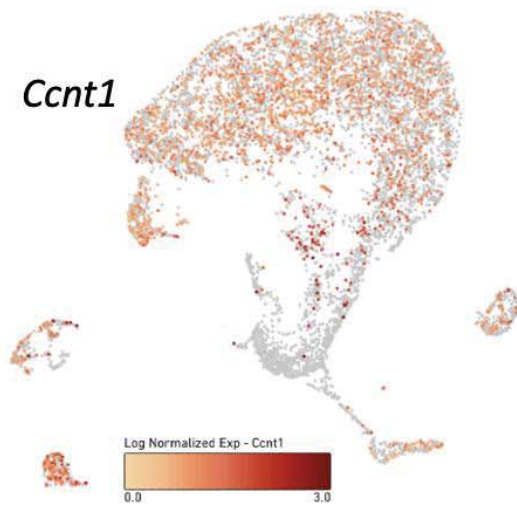
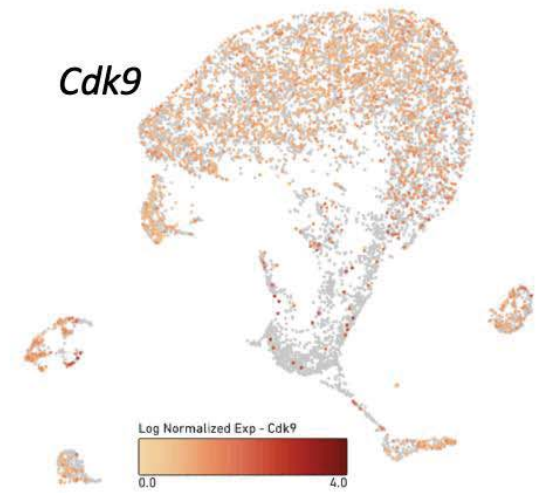
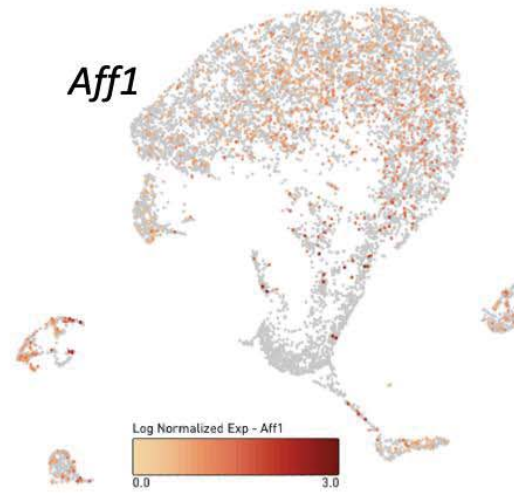
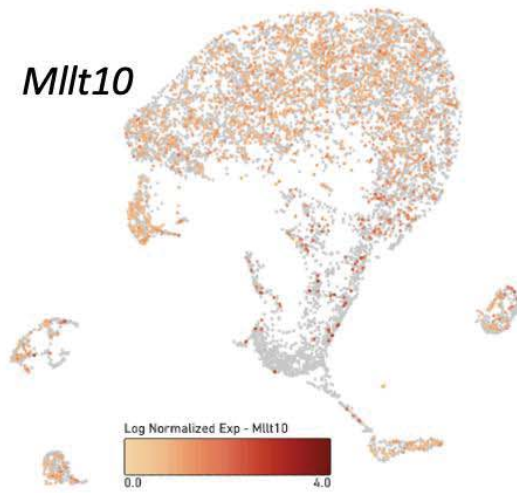
Supplemental Figure 9



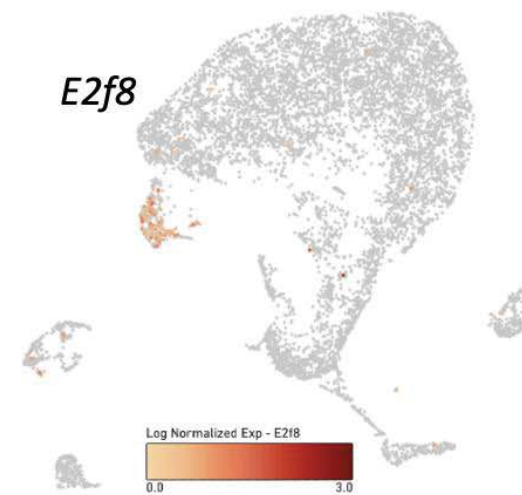
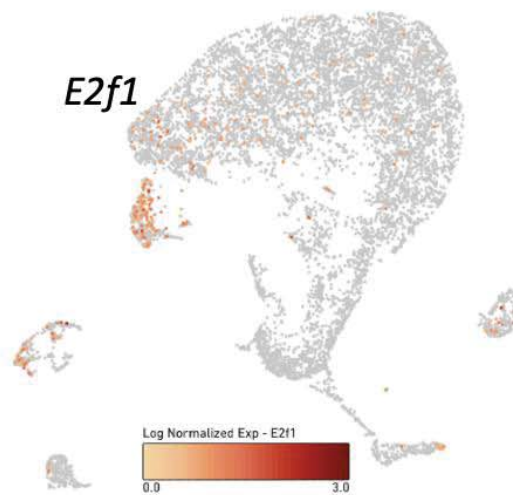
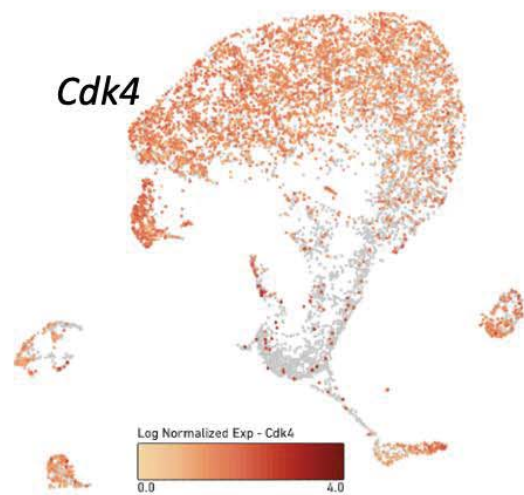
Supplemental Figure 10



Supplemental Figure 11



Supplemental Figure 12



Supplemental Figure 13

Cluster 1. MSCs #1 (p<0.001)

Cnmd, Col9a1, Dlk1, Angpt4, Col9a3, Grik1, Nqo1, Dio3, Col16a1, Cntn6

Cluster 2. MSCs #2 (p<0.001)

Dmkn, Cyfp2, Nav3, C2, Kcnk2, Cxadr, Atf5, Sod3, Slitrk6, Prep

Cluster 3. MSC #3 (p<0.001)

Tac1, Smpd3, Pcp4, Smoc2, Coch, Ptn, Crabp1, Mfap4, Tubb3, Col26a1

Cluster 4. MSCs #4 (p<0.001)

Cldn10, Stbd1, Ifitm1, Sod3, Stc2, Ldhb, Fjx1, Irx5, Khdrbs3, Enpp6

Cluster 5. MSCs #5 (p<0.001)

Cxadr, Thbd, Nav3, Slitrk6, Fap, Tnfaip2, C2, Cyfp2, Dmkn, Ctnnd2

Cluster 6. MSCs #6 (p>0.1)

Slc40a1, Cd55, Col3a1, Col5a2, Fgfr1, Satb2, Col9a2, Bmp1, Bmpr2, Tfgeb2

Cluster 7. MSCs #7 (p>0.1)

Alpl, Col3a1, Fgfr1, Satb2, Bmpr2, Bmp1, Tgfb2, Col7a1, Col9a2, Smad3

Cluster 8. MSCs #8 (p<0.001)

Stc2, Nrxn1, Fmod, Prep, Vdr, Prkca, Cxcl12, Sulf2, Hivep3, Akap12

Cluster 9. MSCs #9 (p<0.05)

Nell2, Cd59a, Omd, Lurap1l, Pkdcc, Vit, Prss35, Hacd1, Dcn, Mest

Cluster 10. MSCs #10 (p<0.001)

Cdkn1c, Rspo4, Nrxn1, Oan, Gap43, Ldhb, Col9a2, Fam19a5, Col25a1, Kcnj8

Cluster 11. Immune cells (p<0.001)

Fcer1g, Tyrobp, C1qb, C1qa, C1qc, Ctss, Csf1r, Laptm5, Pf4, Mrc1

Cluster 12. Pericytes (p<0.001)

Rgs5, Ndufa4l2, Casq2, Myh1l, Aoc3, Olfml2a, Ebf1, Itga1, Rgs7bp, Acta2

Cluster 13. Mitotic MSCs (p<0.001)

Mxd3, Nusap1, Spc25, Pbk, Birc5, Pclaf, Pimreg, Hmmr, Cdca3, Cenpf

Cluster 14. Ameloblasts (p<0.001)

Krt5, Amelx, Krt14, Fxyd3, Enam, Ckmt1, Mmp20, Acp4, Krt17, Ambn

Cluster 15. Vascular endothelial and blood cells (p<0.001)

Cdh5, Plvap, Ctla2a, Emcn, Cldn5, Gpihbp1, Pecam1, Cd34, Flt1, Ecscr

Supplemental Table 1