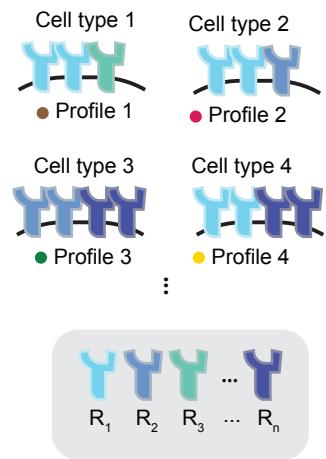


Figure 1: Pathway expression profiles could recur across diverse cell types

A

Receptor expression profiles



B

Pathway profiles could be...

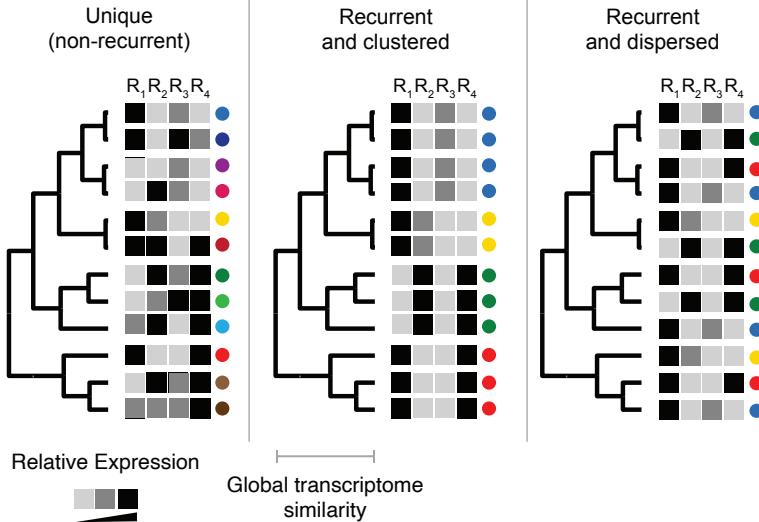
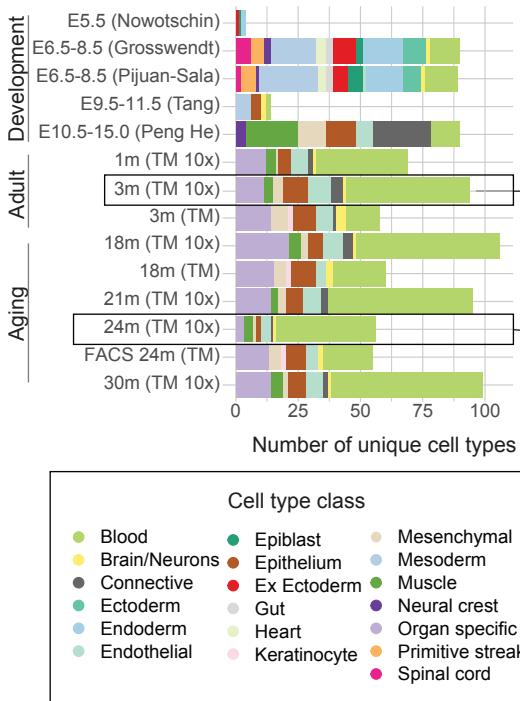


Figure 2: Pathway expression profiles could recur across diverse cell types

A

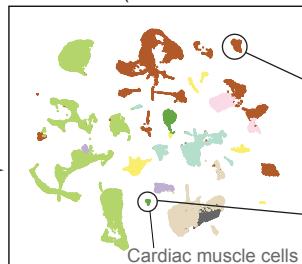
Multiple mouse cell atlas datasets



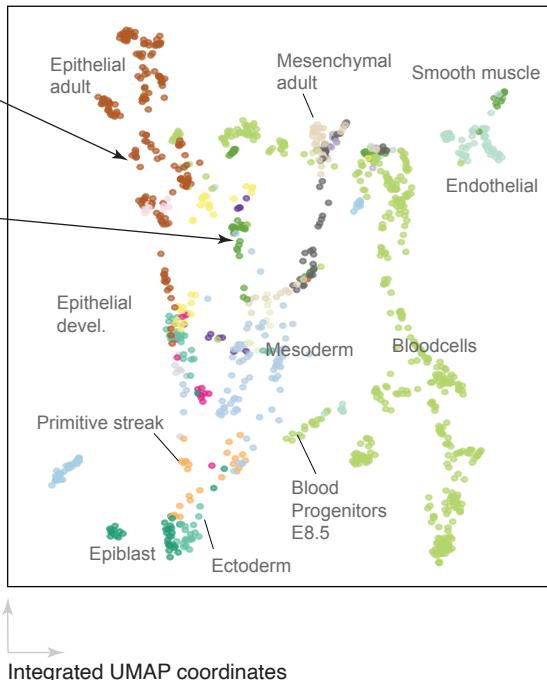
B

Individual cell atlases  
Single-cell transcriptome profiles  
1 dot = 1 cell

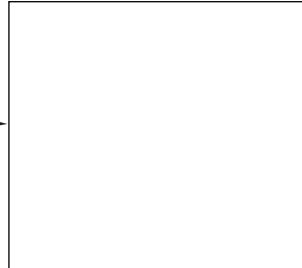
Tabula muris (3 month old mouse)



Integrated cell state atlas  
Global cluster-averaged profiles  
All data sets in (C)  
1 dot = 1 cell cluster

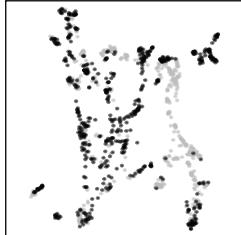


Tabula senis (24 month old mouse)



C

TGF- $\beta$   
52% of cell clusters



Min. # of genes exp: 2  
Threshold for exp.: 0.2

Notch  
37% of cell clusters



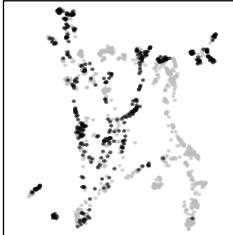
Min. # of genes exp: 2  
Threshold for exp.: 0.2

Eph-ephrin  
36% of cell clusters



Min. # of genes exp: 2  
Threshold for exp.: 0.3

Wnt  
31% of cell clusters

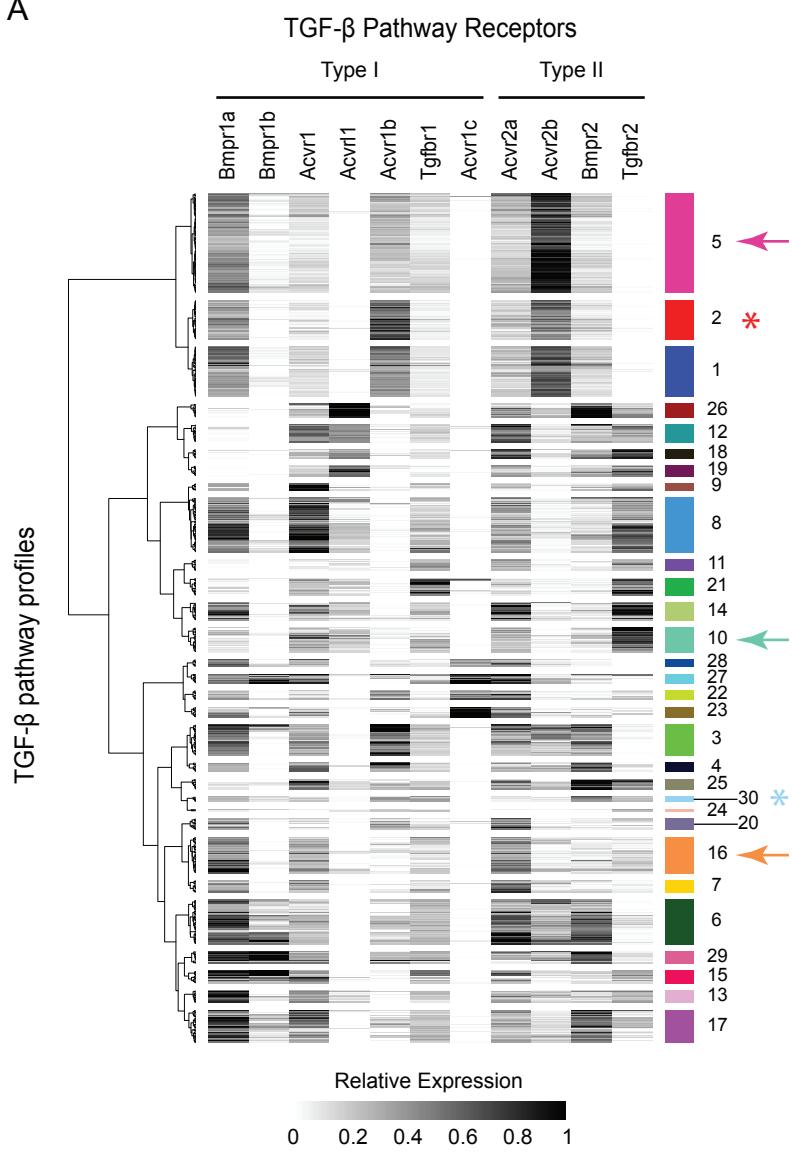


Min. # of genes exp: 2  
Threshold for exp.: 0.3

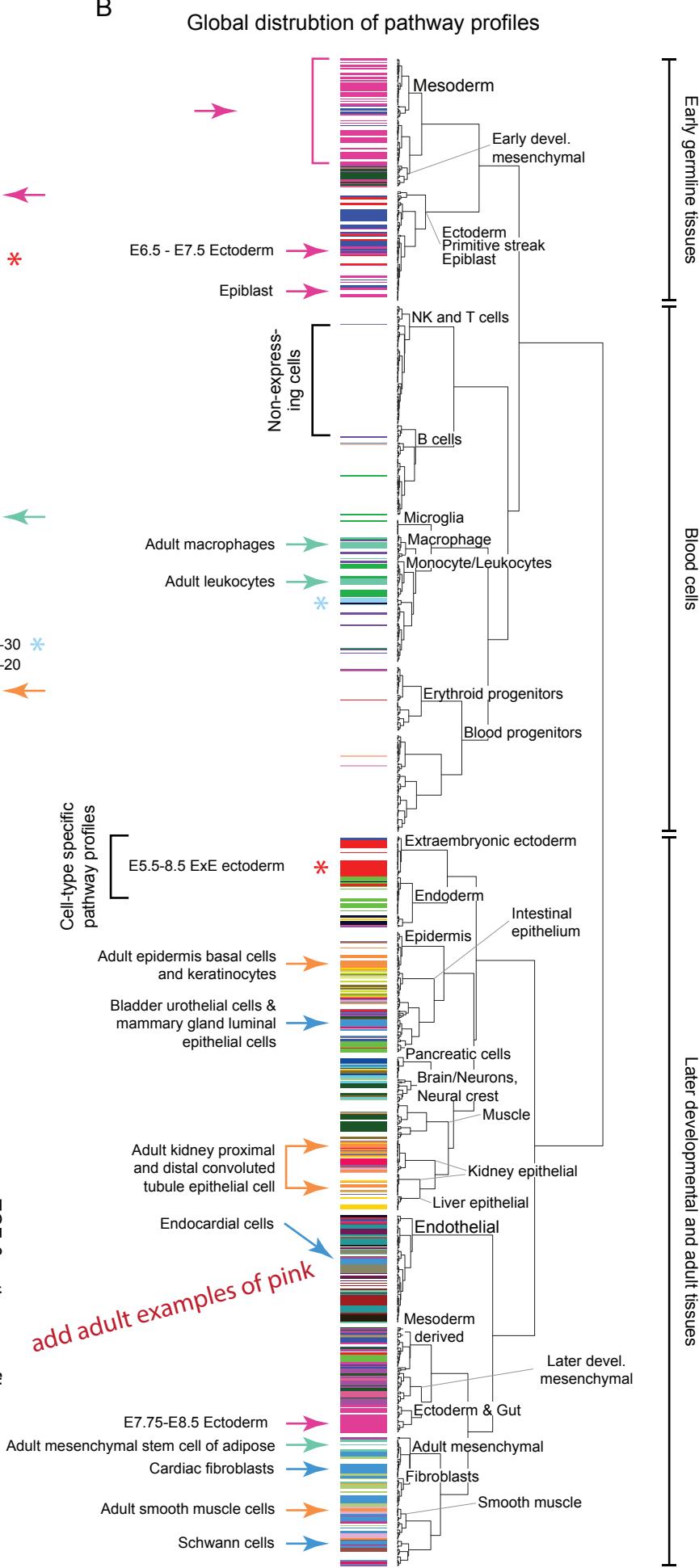
Dataset UMAP coordinates

Figure 3: TGF- $\beta$  Receptors exhibit distinct and recurrent pathway expression profiles

A



B



C

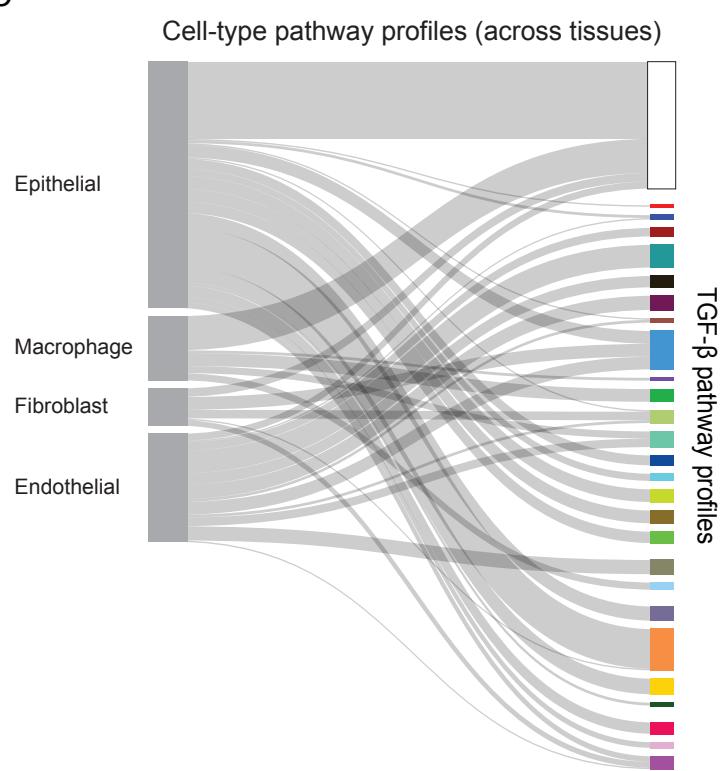
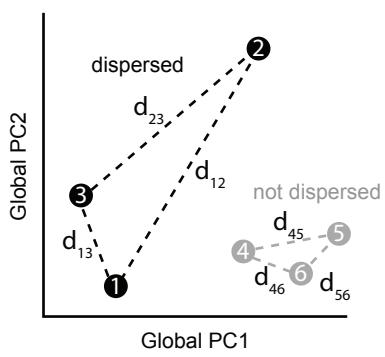
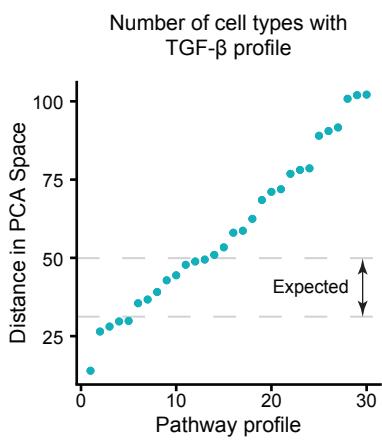


Figure 4: TGF- $\beta$  expression motifs are dispersed across cell types and organs

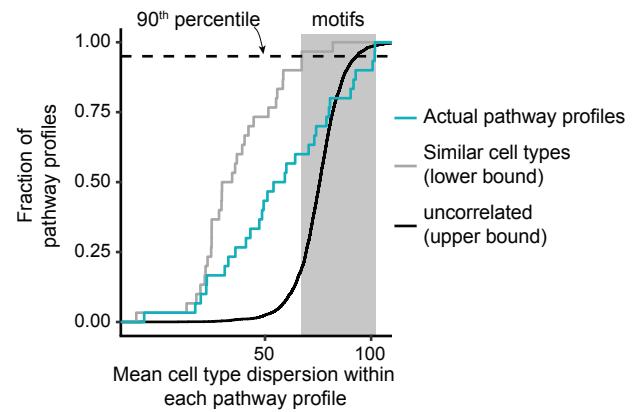
A Pairwise distance computation (schematic)  
(Actual computation occurs in 100-dimensional PCA space)



B

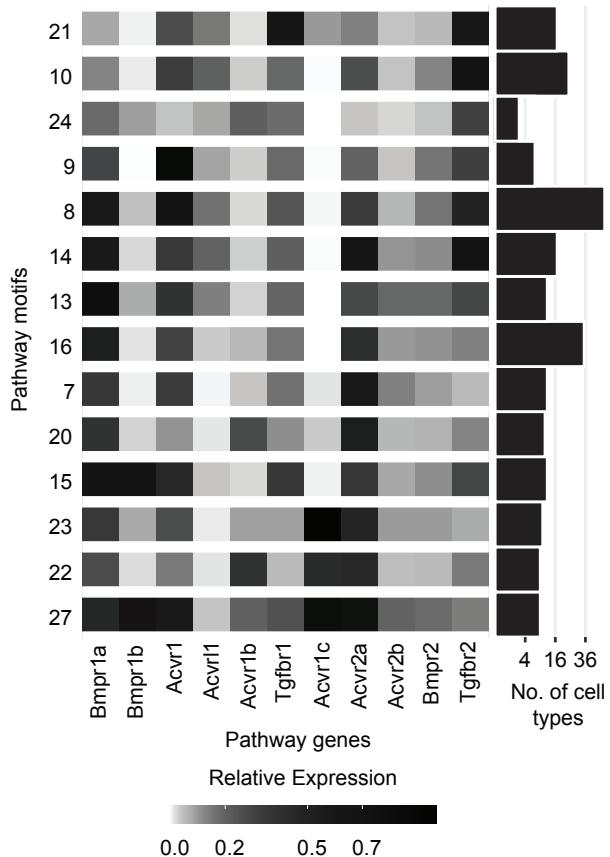


C



D

#### Broadly Dispersed TGF- $\beta$ Motifs



E

#### Broadly Dispersed TGF- $\beta$ Motifs

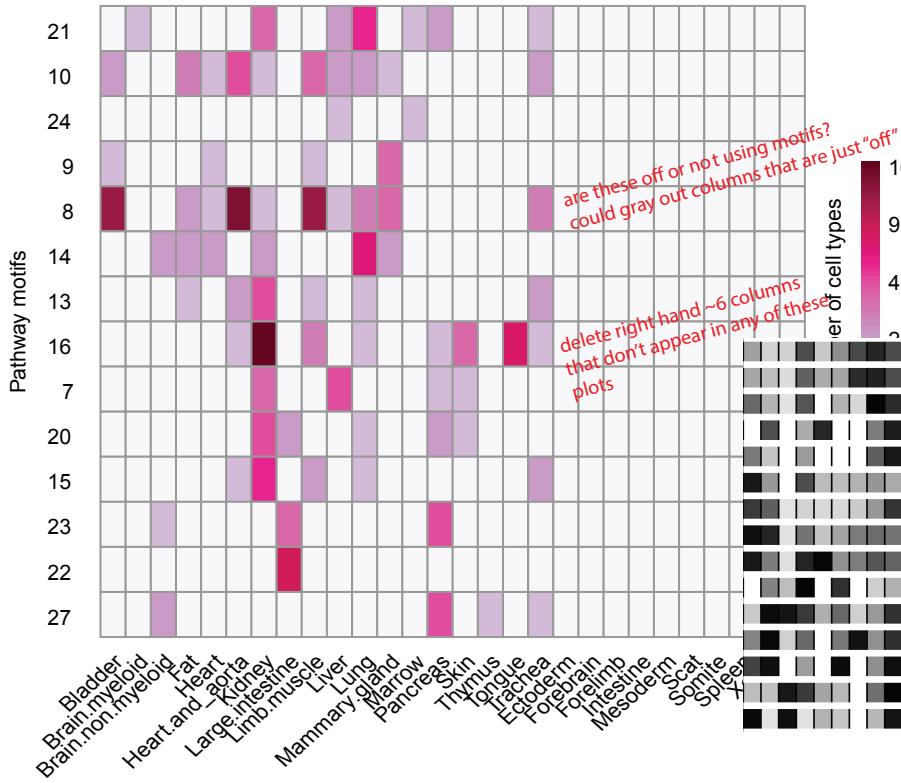


Figure 5: Other signaling pathways also exhibit recurrent expression profiles

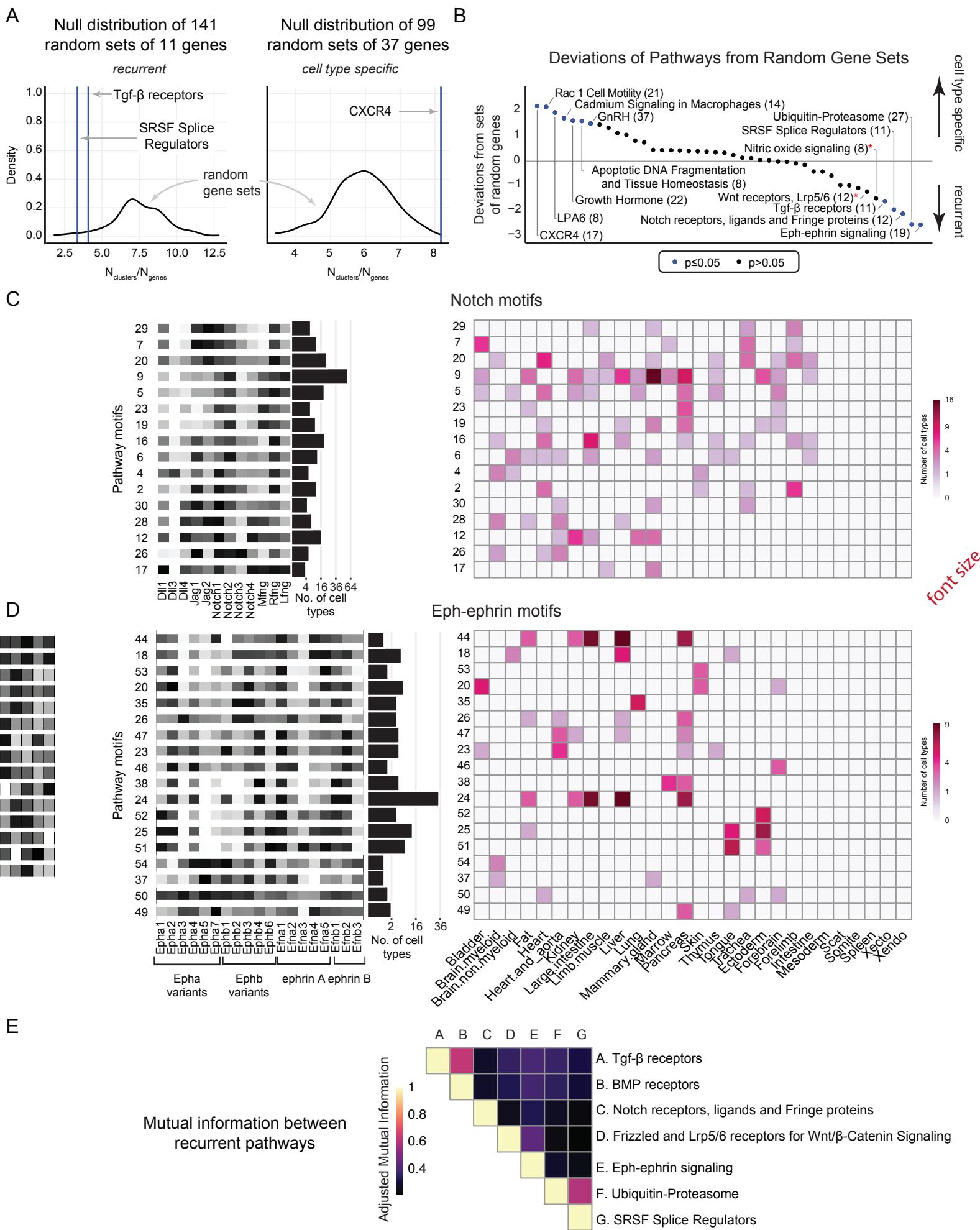
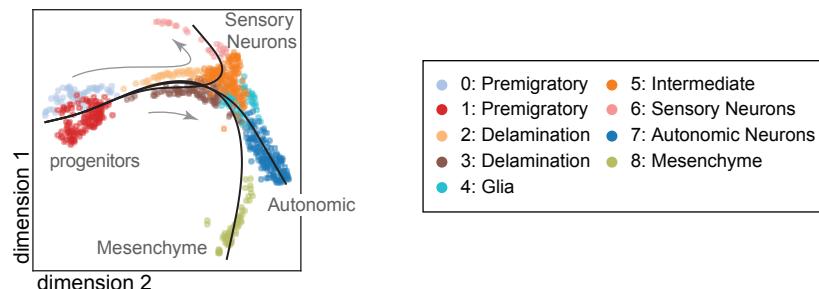
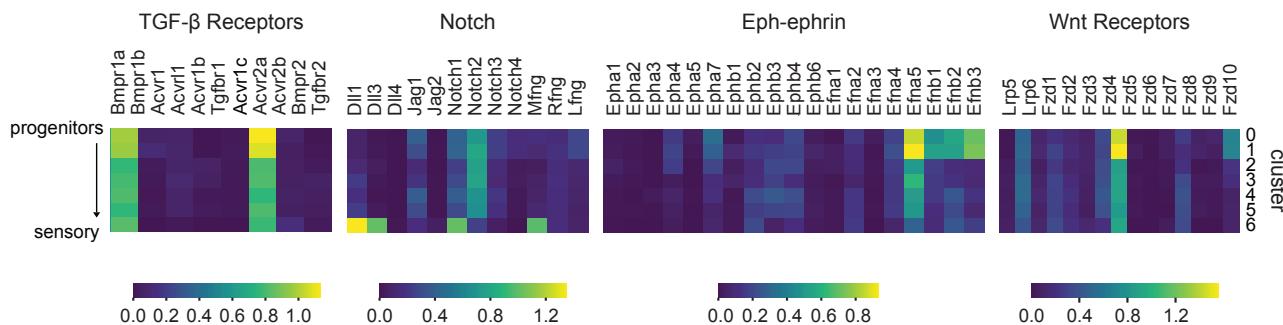


Figure 6: Title

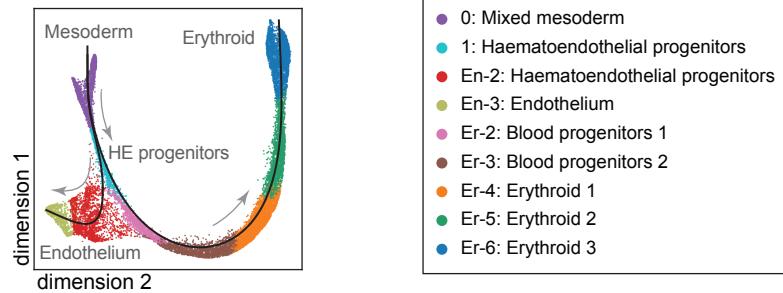
A Trunk Neural Crest (E9.5)



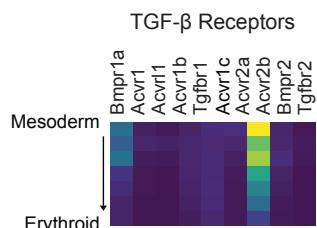
B



C Early vascular differentiation



D



E

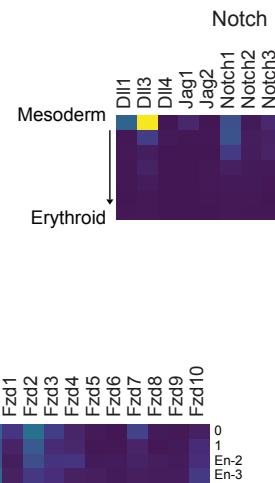
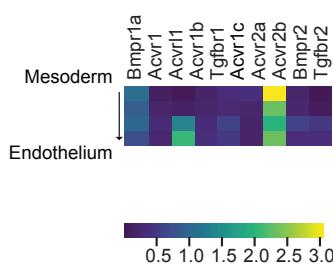
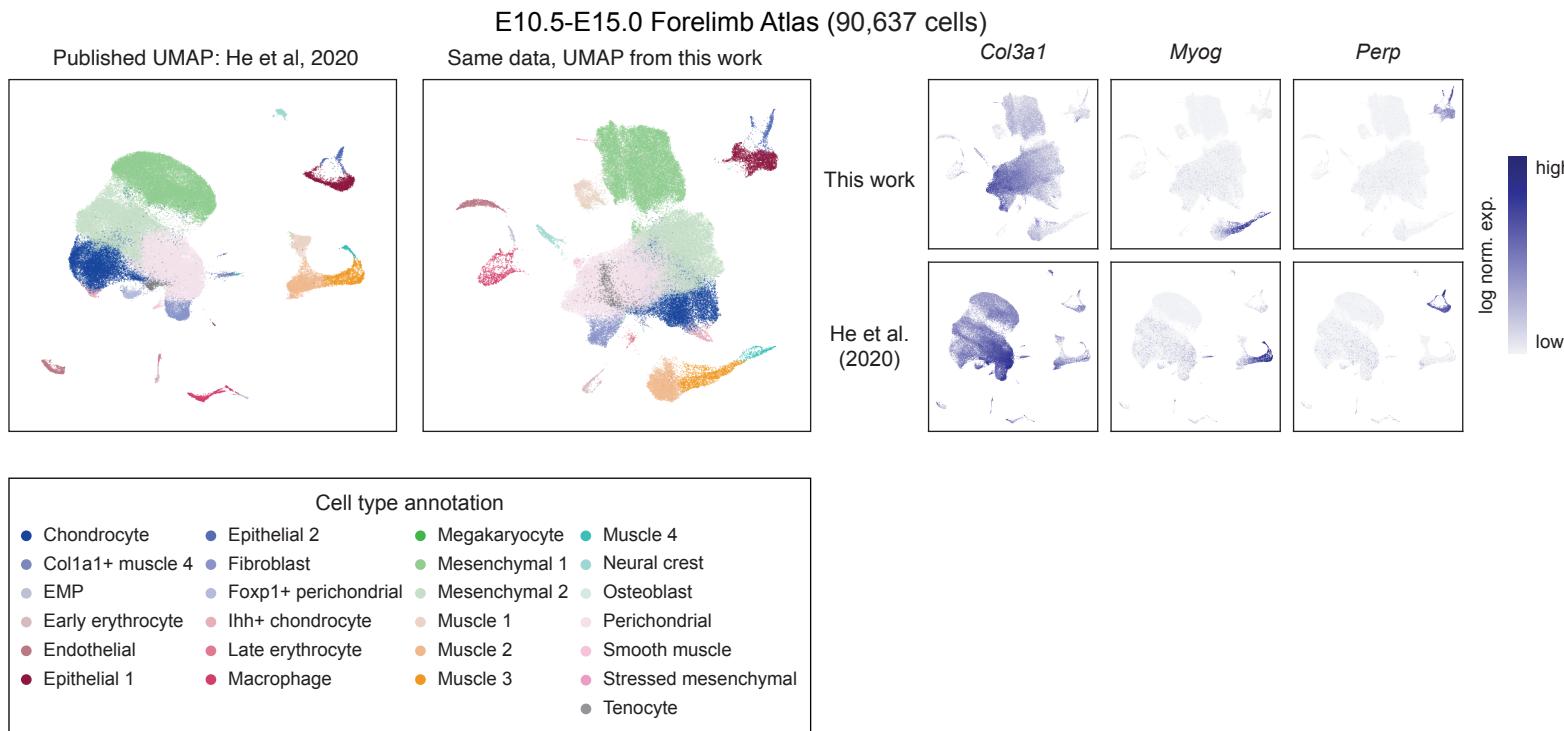
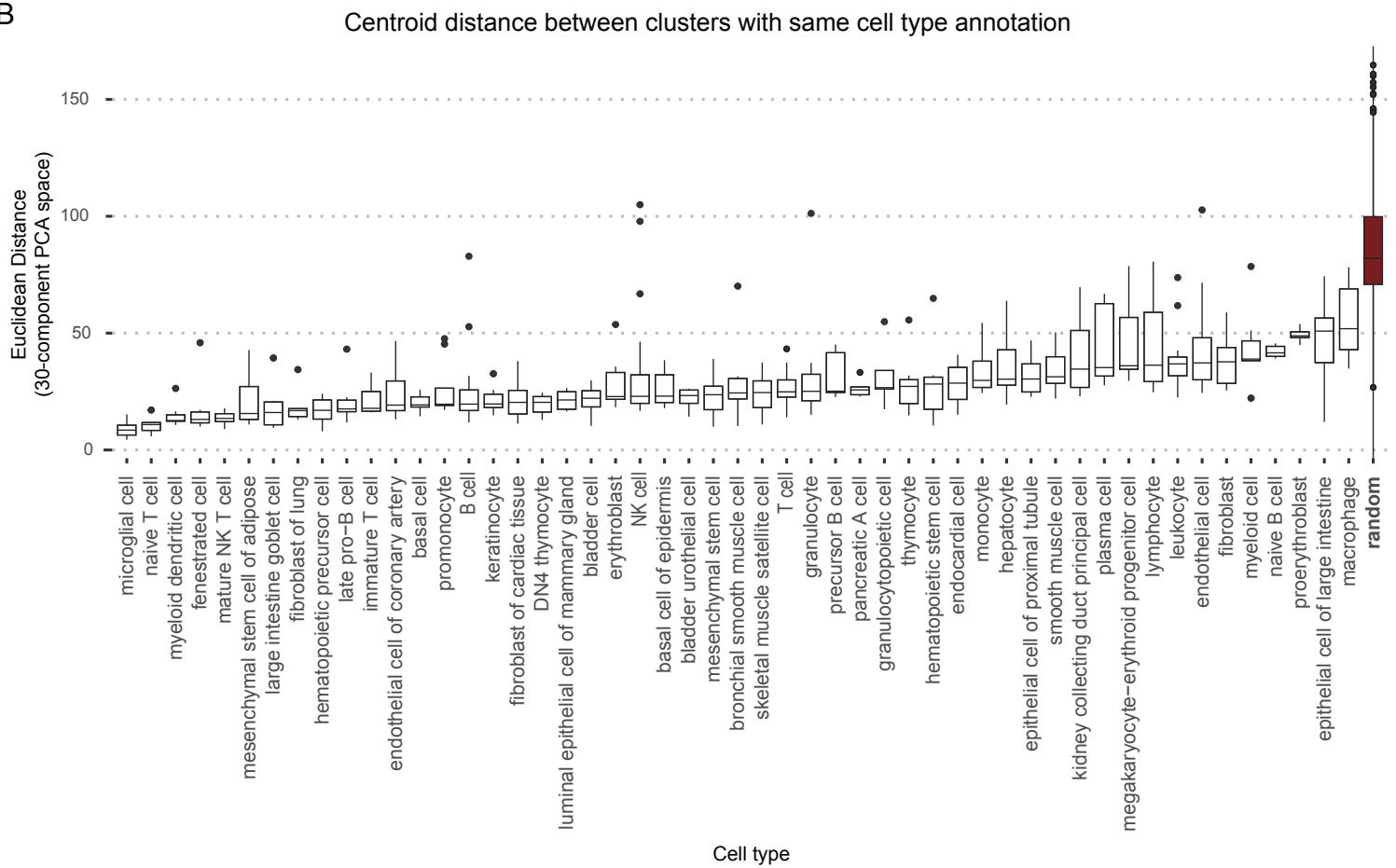


Figure 2, Supplement 1

A



B



C

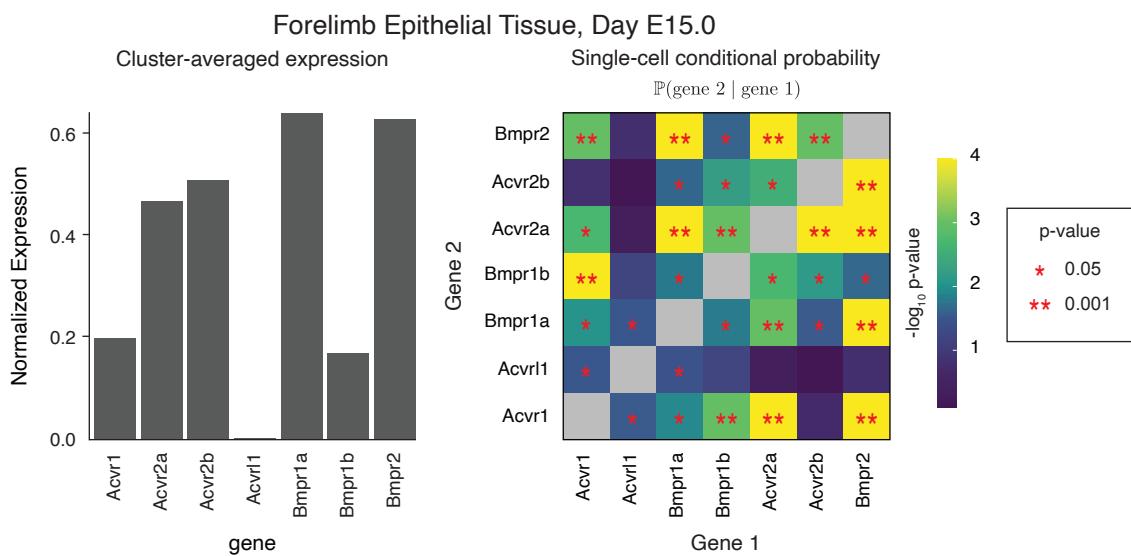
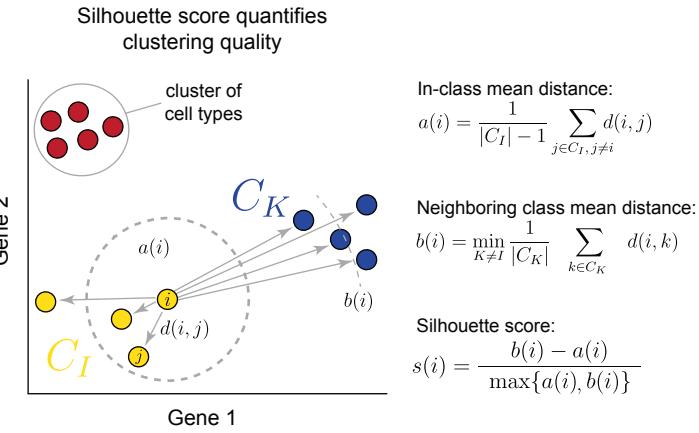


Figure 3-figure supplement 2

A



B

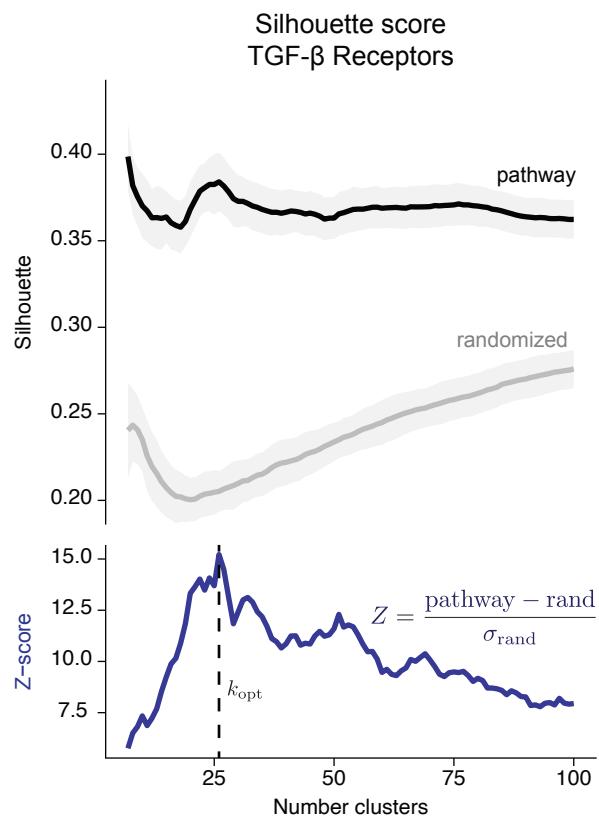
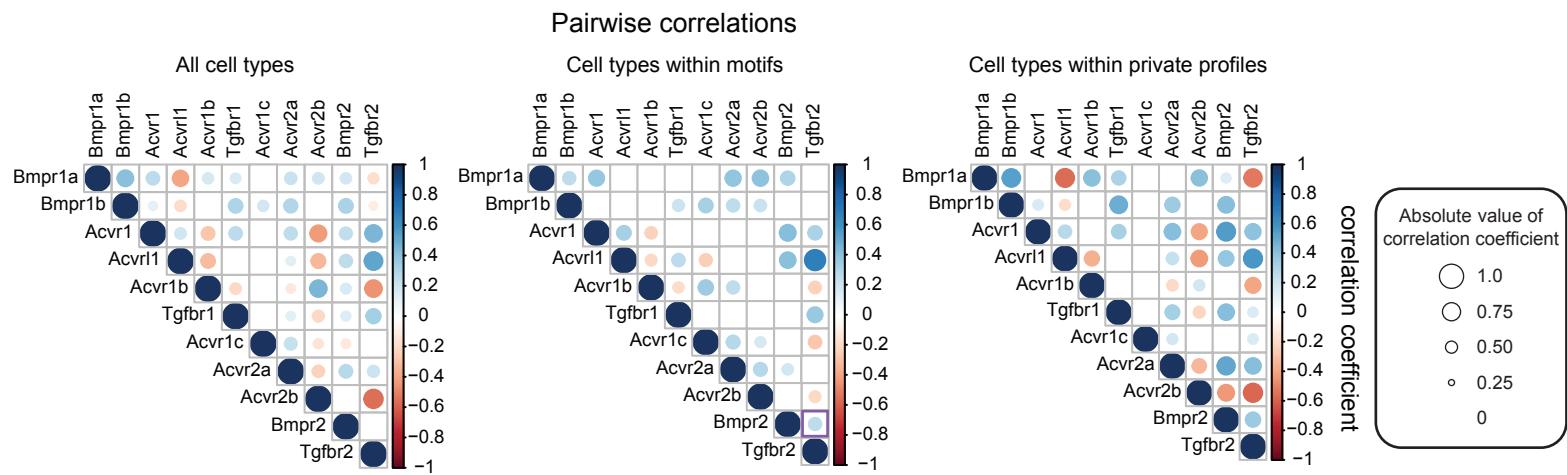


Figure 4, Supplement 1

A



B

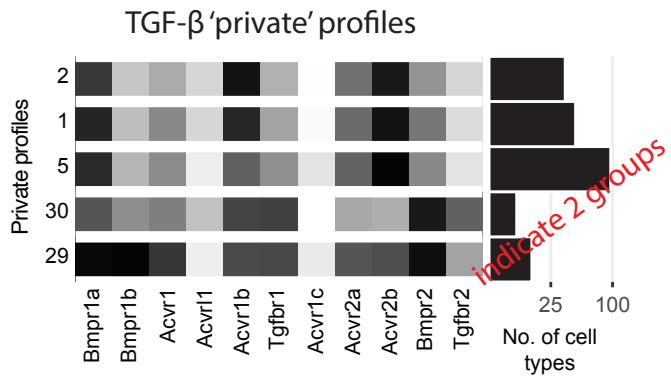
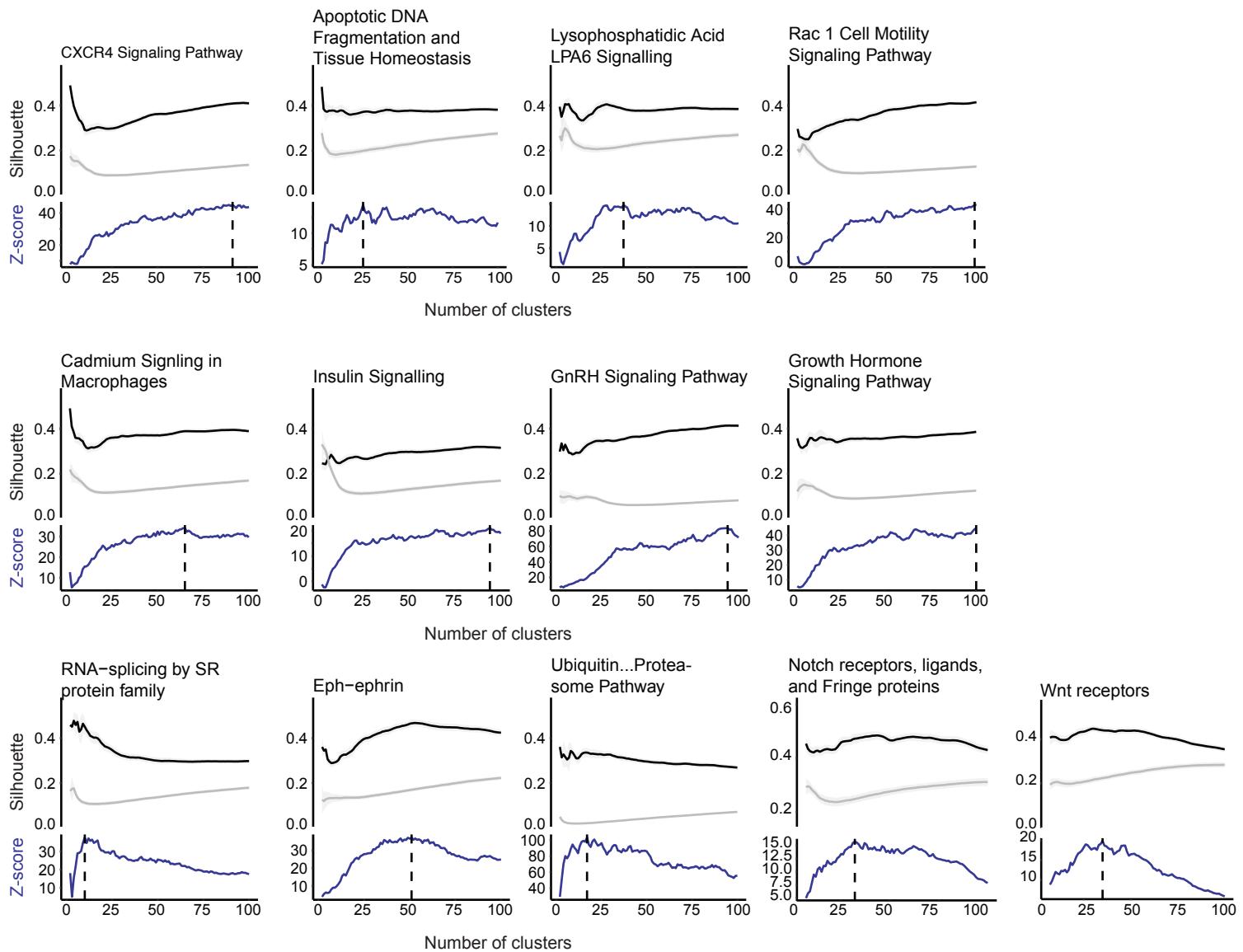
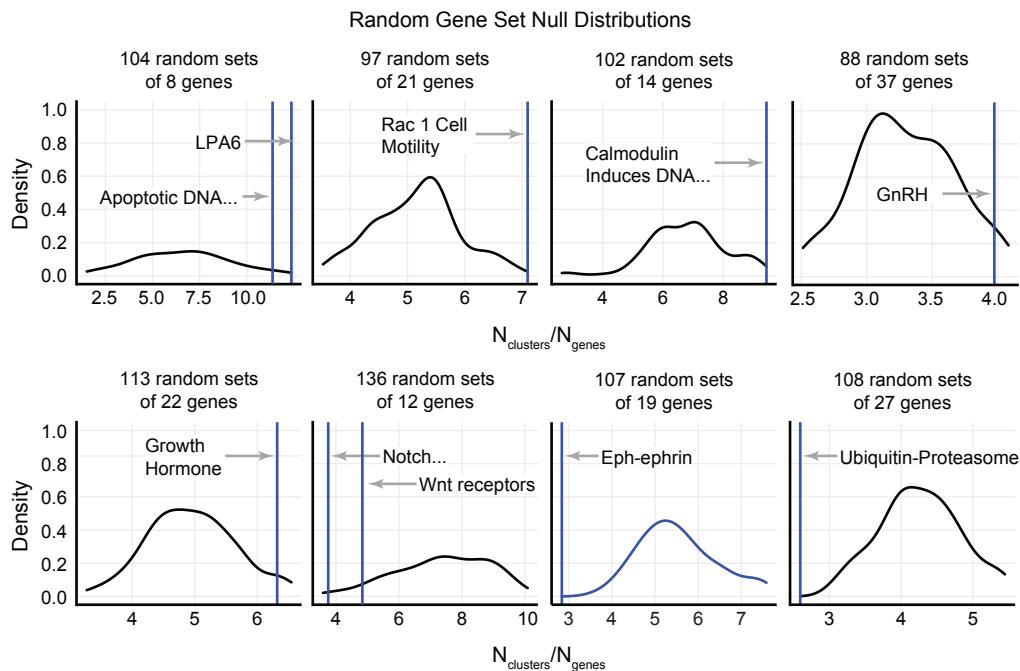


Figure 5—figure supplement 1

A

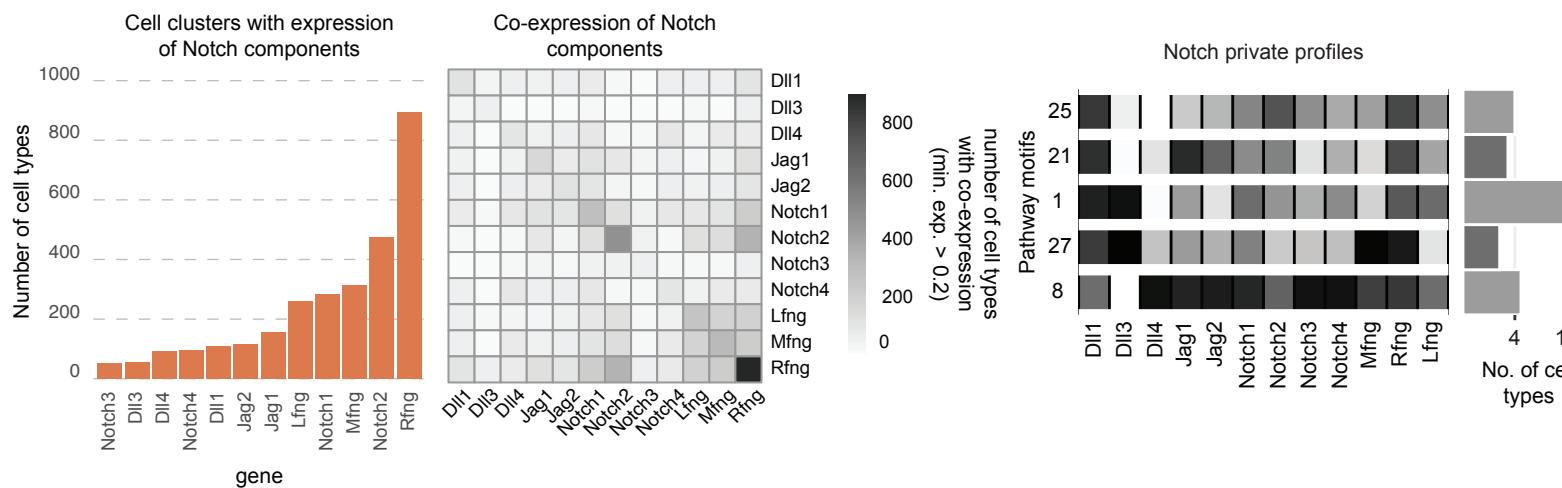


B

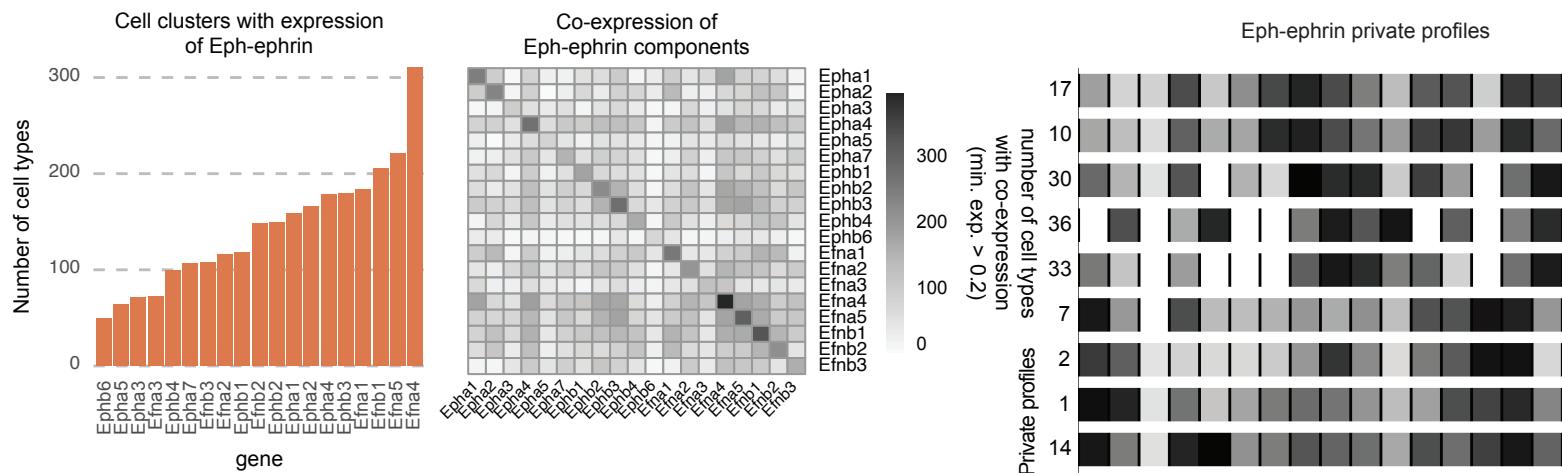


## Figure 5–figure supplement 2

A



B



#

C

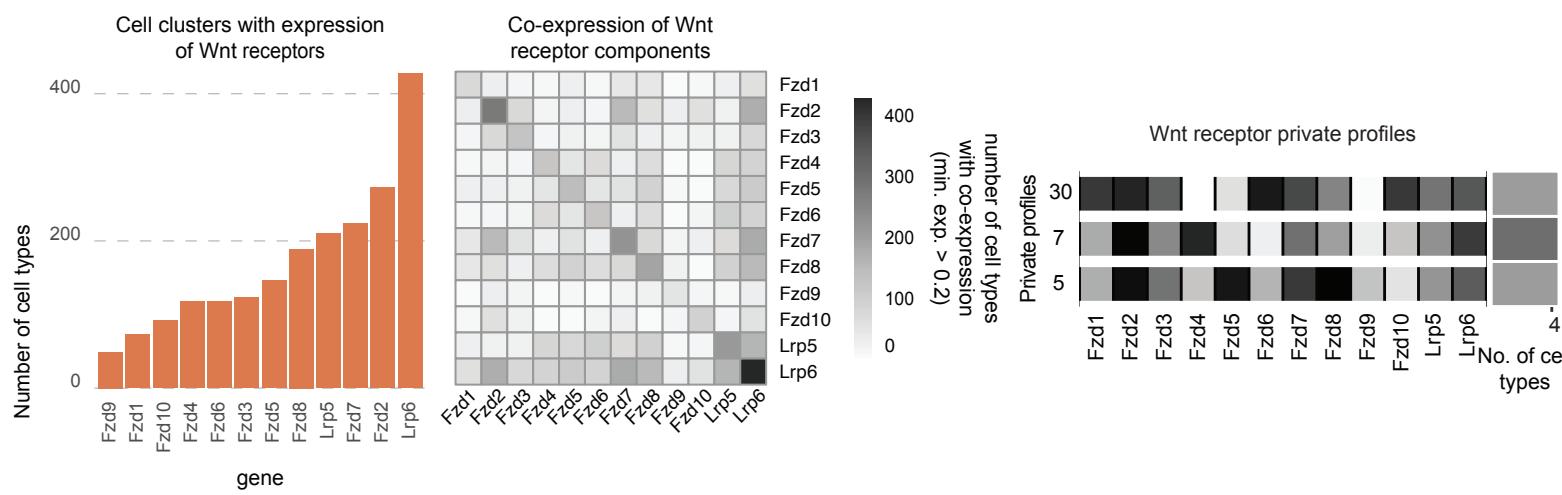


Figure 3, Supplement 1

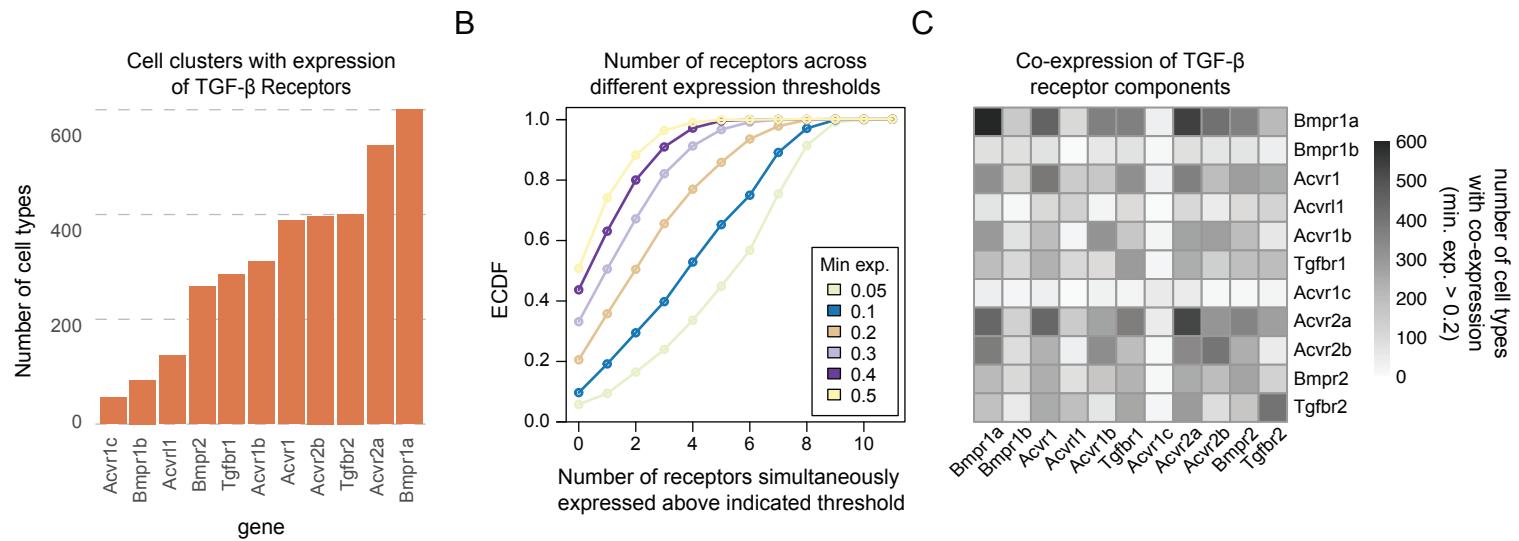
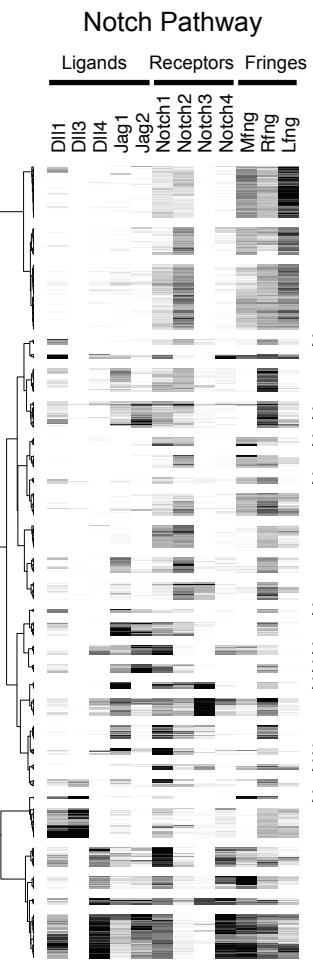
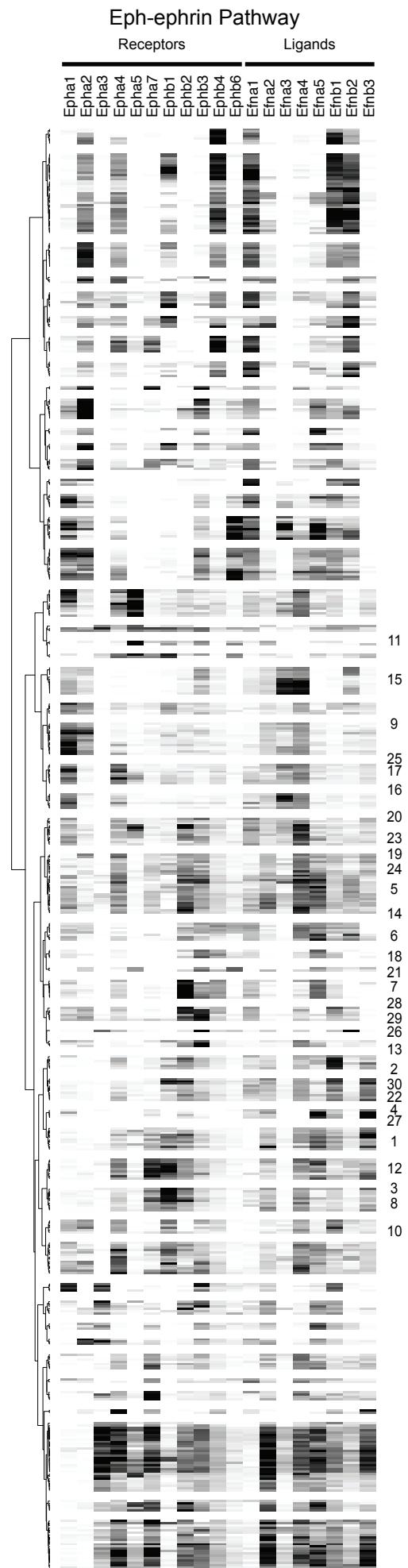


Figure 5—figure supplement 3

A



B



C

