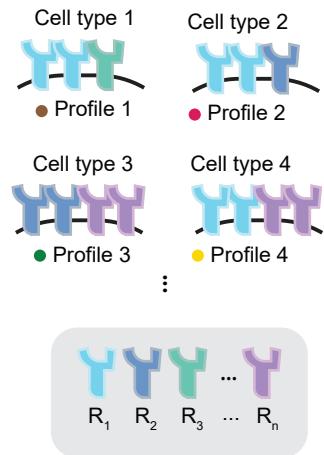


Figure 1: Pathway expression profiles could recur across diverse cell types

A

Receptor expression profiles



B

Pathway profiles could be...

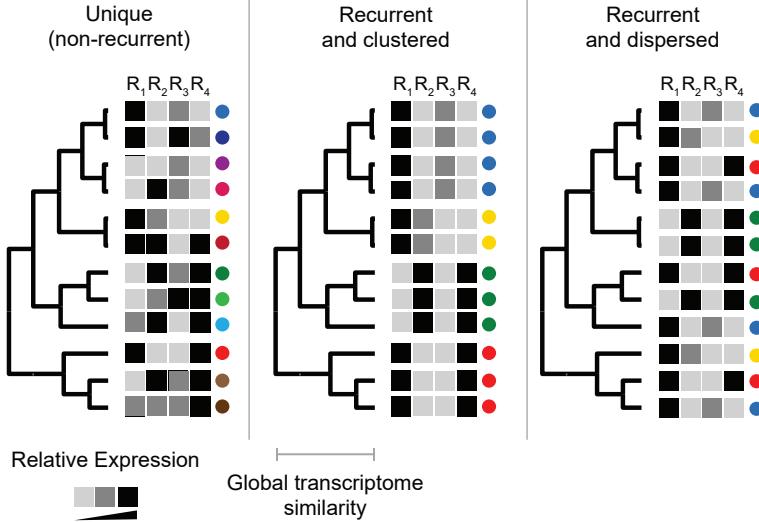
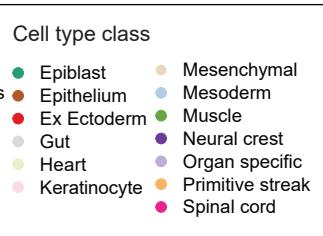
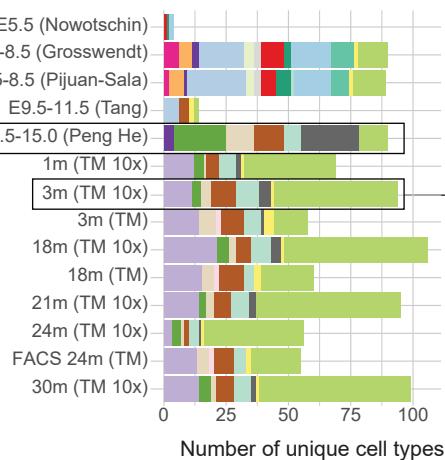


Figure 2: Pathway expression profiles could recur across diverse cell types

A

Multiple mouse cell atlas datasets

Development
Adult
Aging



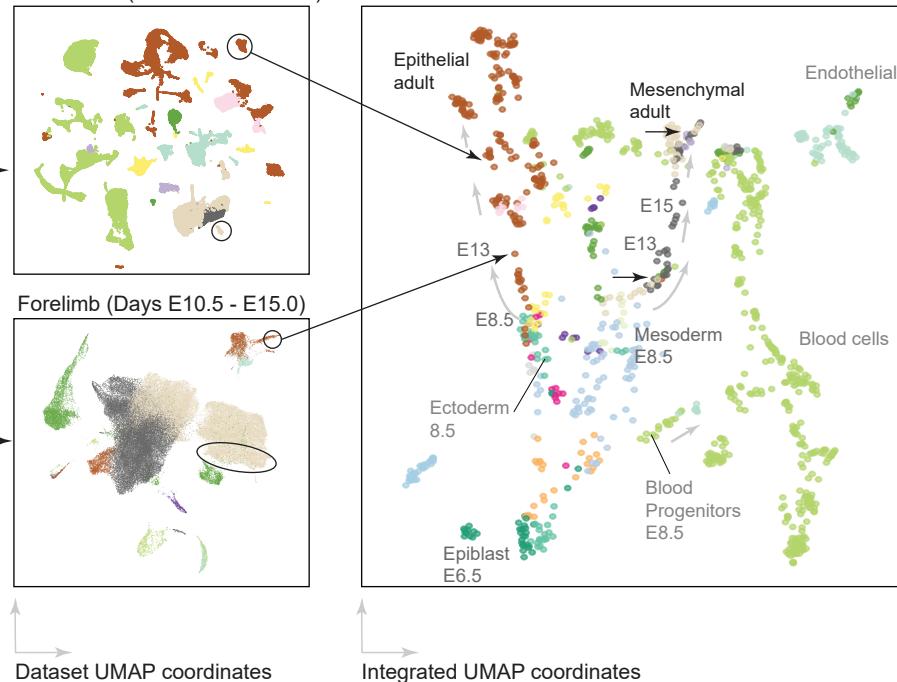
B

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

Tabula muris (3 month old mouse)

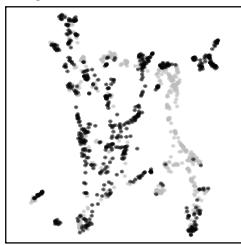
Forelimb (Days E10.5 - E15.0)

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

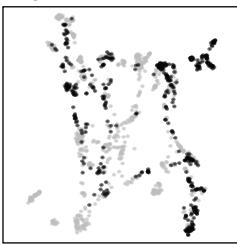


C

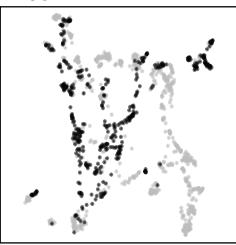
TGF- β
52% of cell clusters



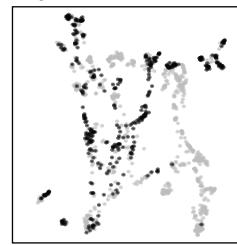
Notch
37% of cell clusters



Eph-ephrin
36% of cell clusters



Wnt
31% of cell clusters

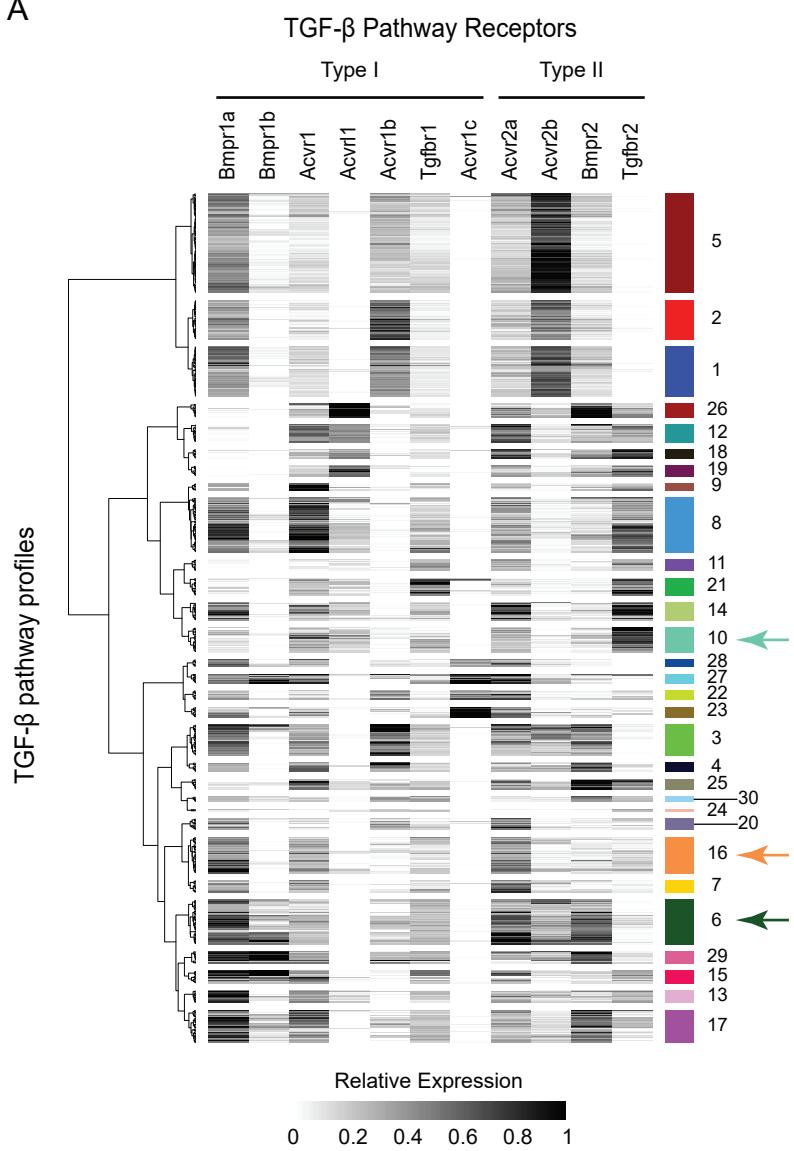


At least 2 genes expressing > 10% of their max dynamic range

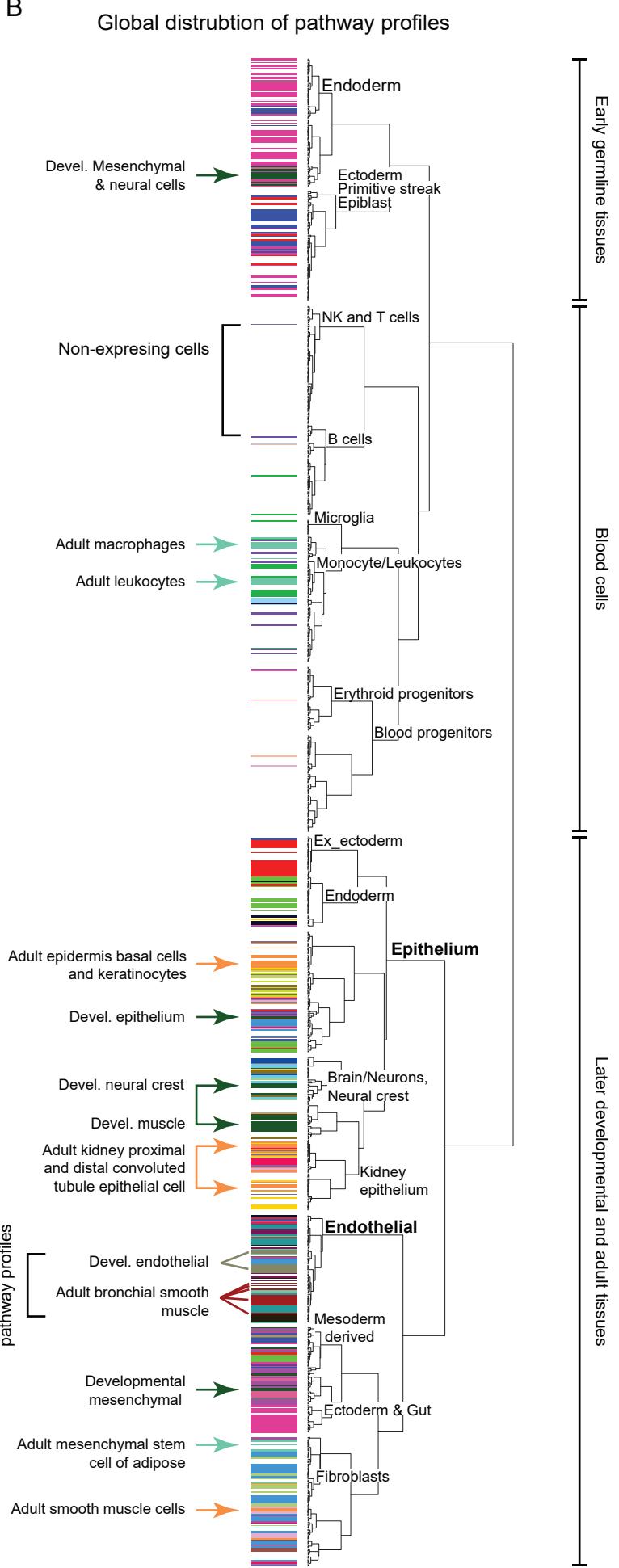
Dataset UMAP coordinates

Figure 3: TGF- β Receptors exhibit distinct and recurrent pathway expression profiles

A



B



C

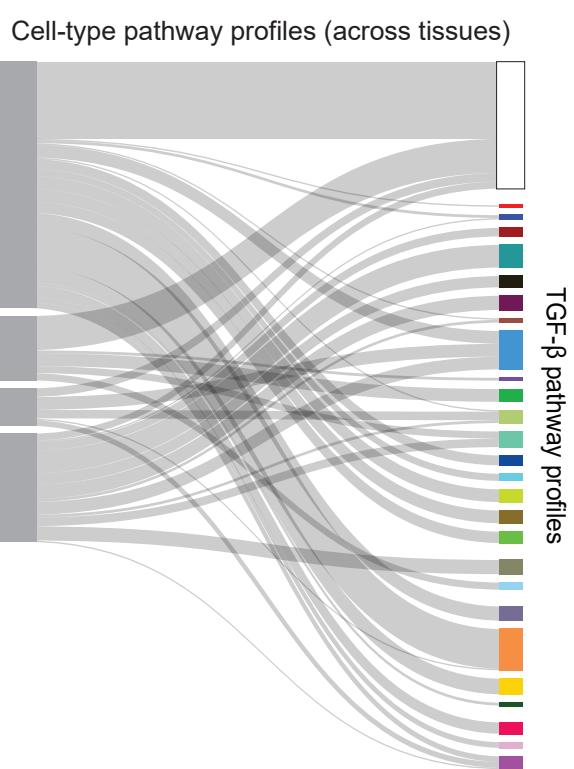
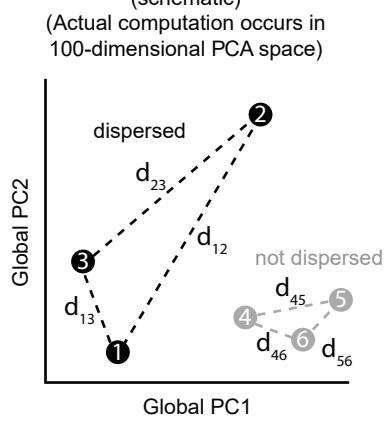
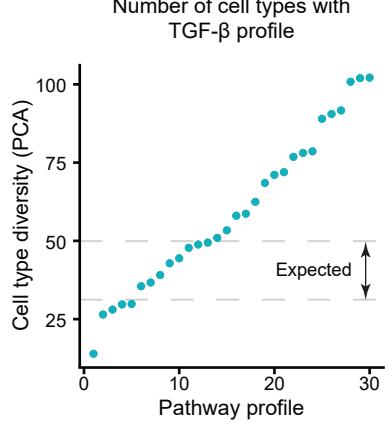


Figure 4: TGF- β expression motifs are dispersed across cell types and organs

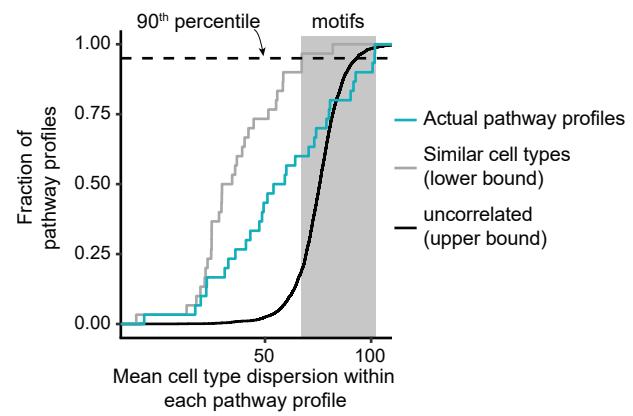
A Pairwise distance computation (schematic)
(Actual computation occurs in 100-dimensional PCA space)



B Number of cell types with TGF- β profile

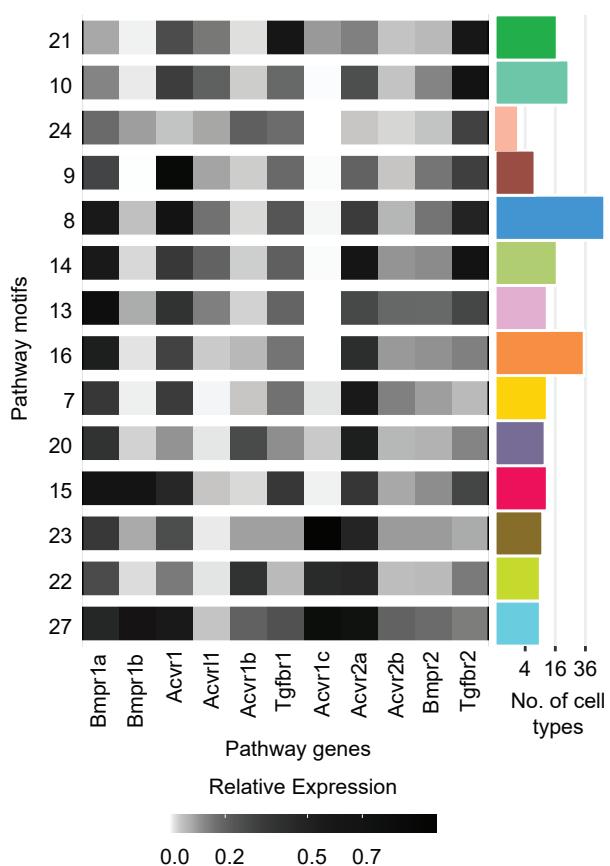


B



C

Broadly Dispersed TGF- β Motifs



D

Broadly Dispersed TGF- β Motifs

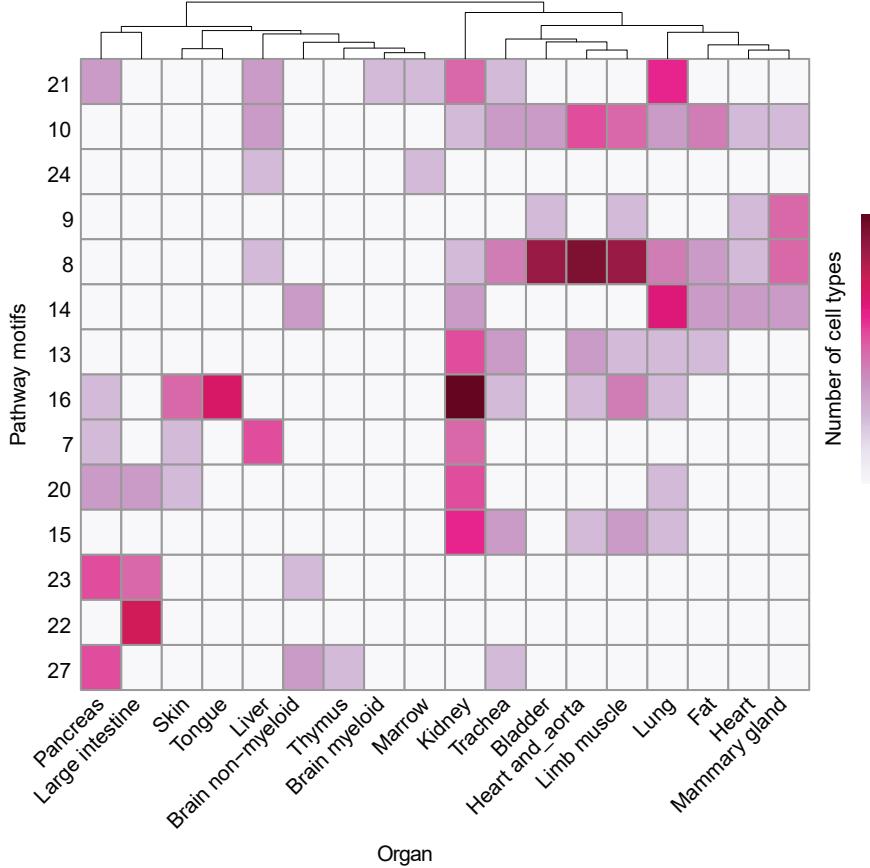
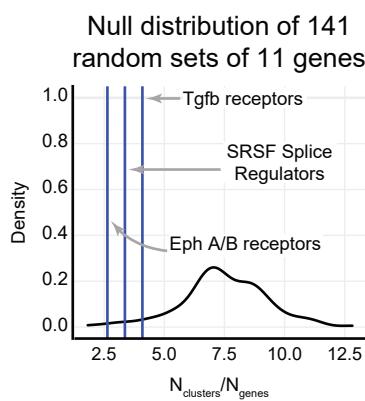
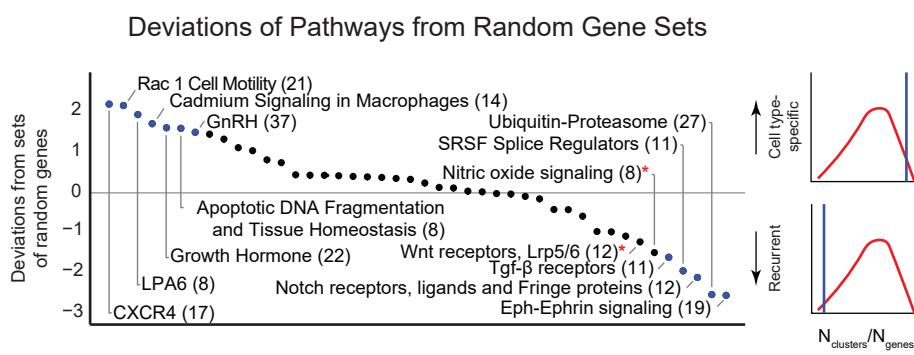


Figure 5: Wnt and Notch also show broadly dispersed recurrent pathway expression motifs

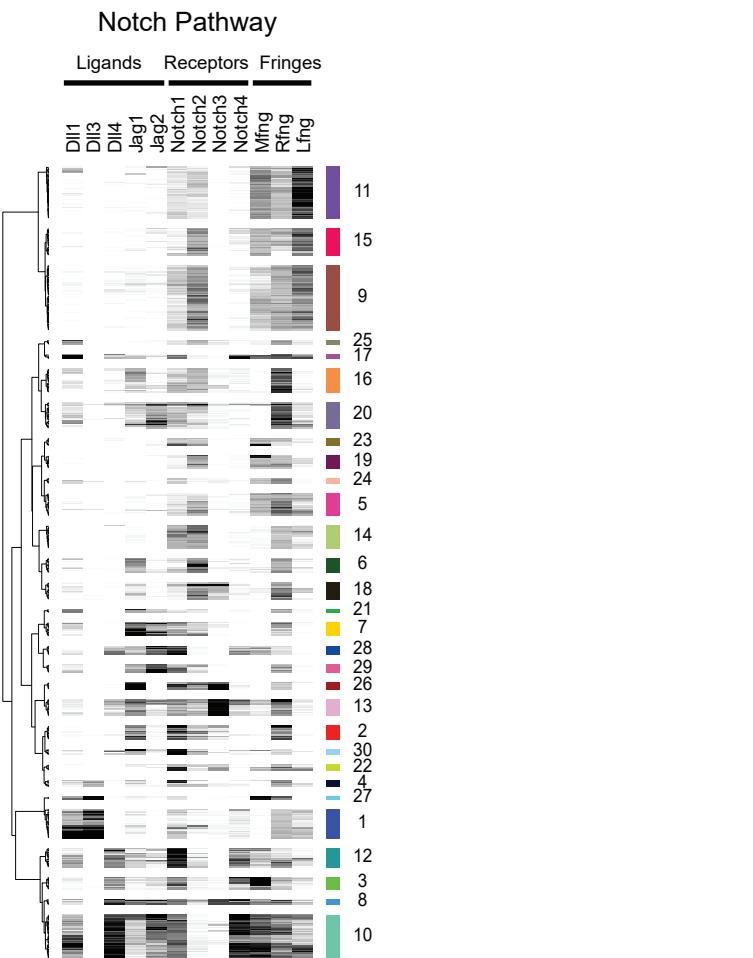
A



B



C



G

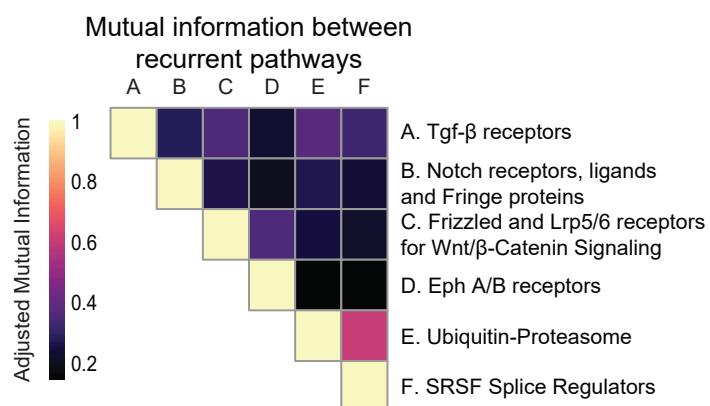
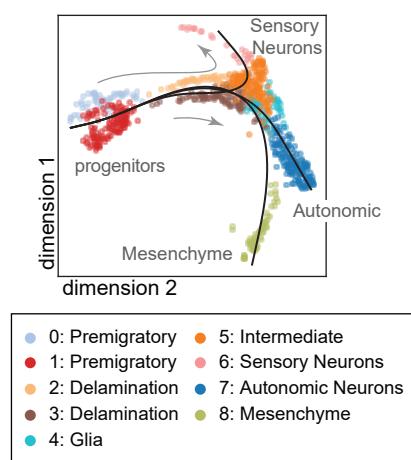


Figure 5:

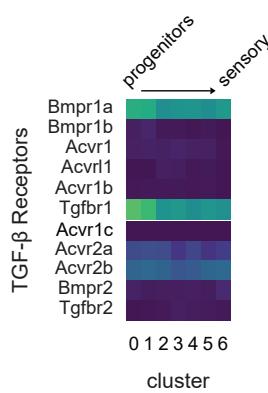
Developmental signaling pathways show distinct dynamics in neural crest differentiation

A

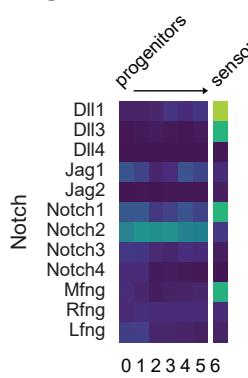
Trunk Neural Crest (E9.5)



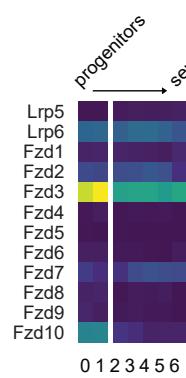
B



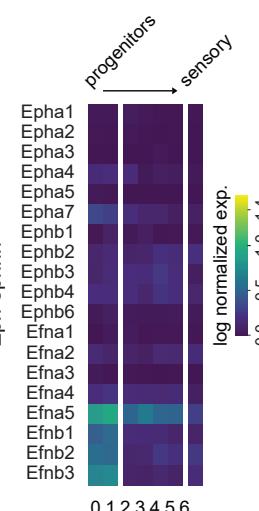
C



Wnt Receptors



Eph-ephrin

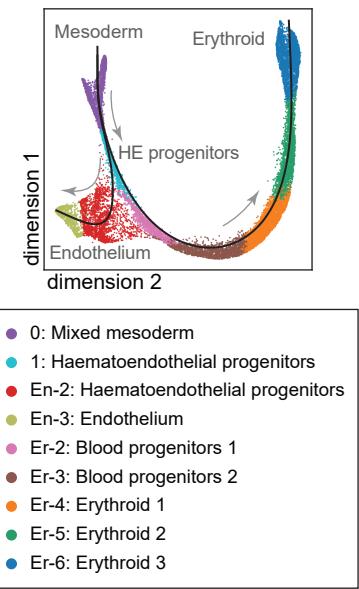


log normalized exp.
0.0 0.5 1.0 1.4

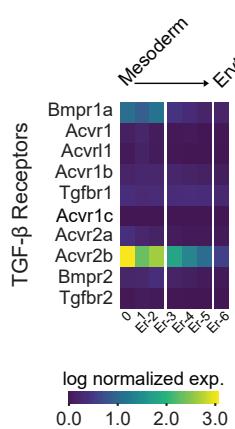
TGF- β shows fate-dependent dynamics in vascular differentiation

D

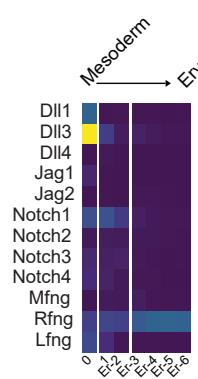
Early vascular differentiation



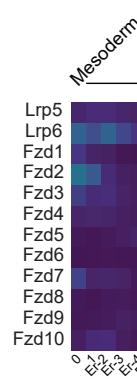
E



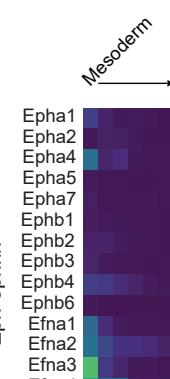
Notch



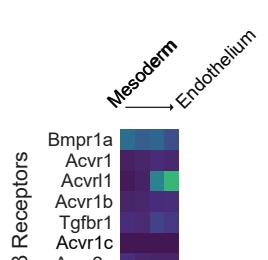
Wnt Receptors



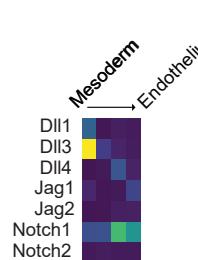
Eph-ephrin



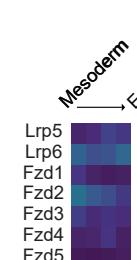
log normalized exp.
0.0 0.5 1.0 1.4



Notch



Wnt Receptors



Eph-ephrin

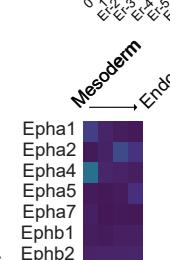
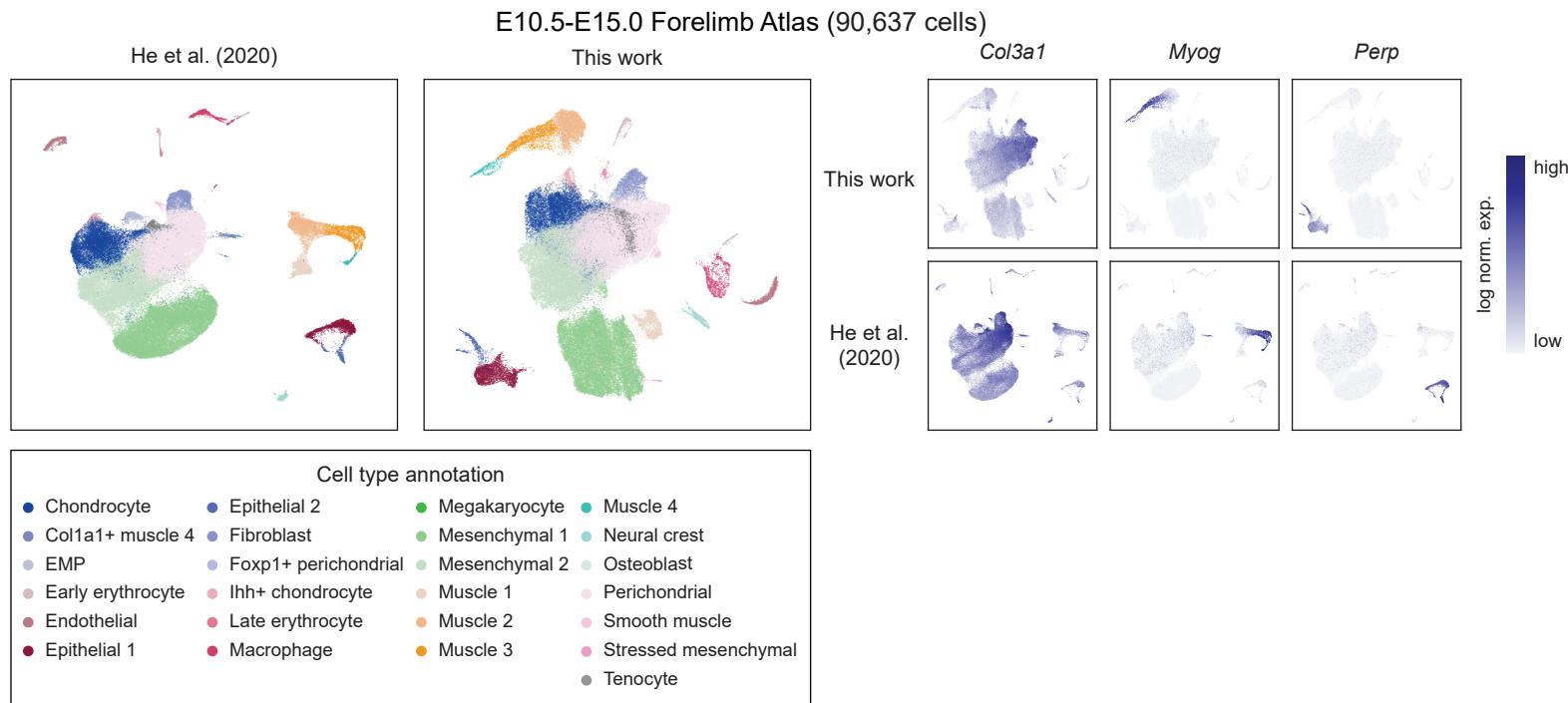
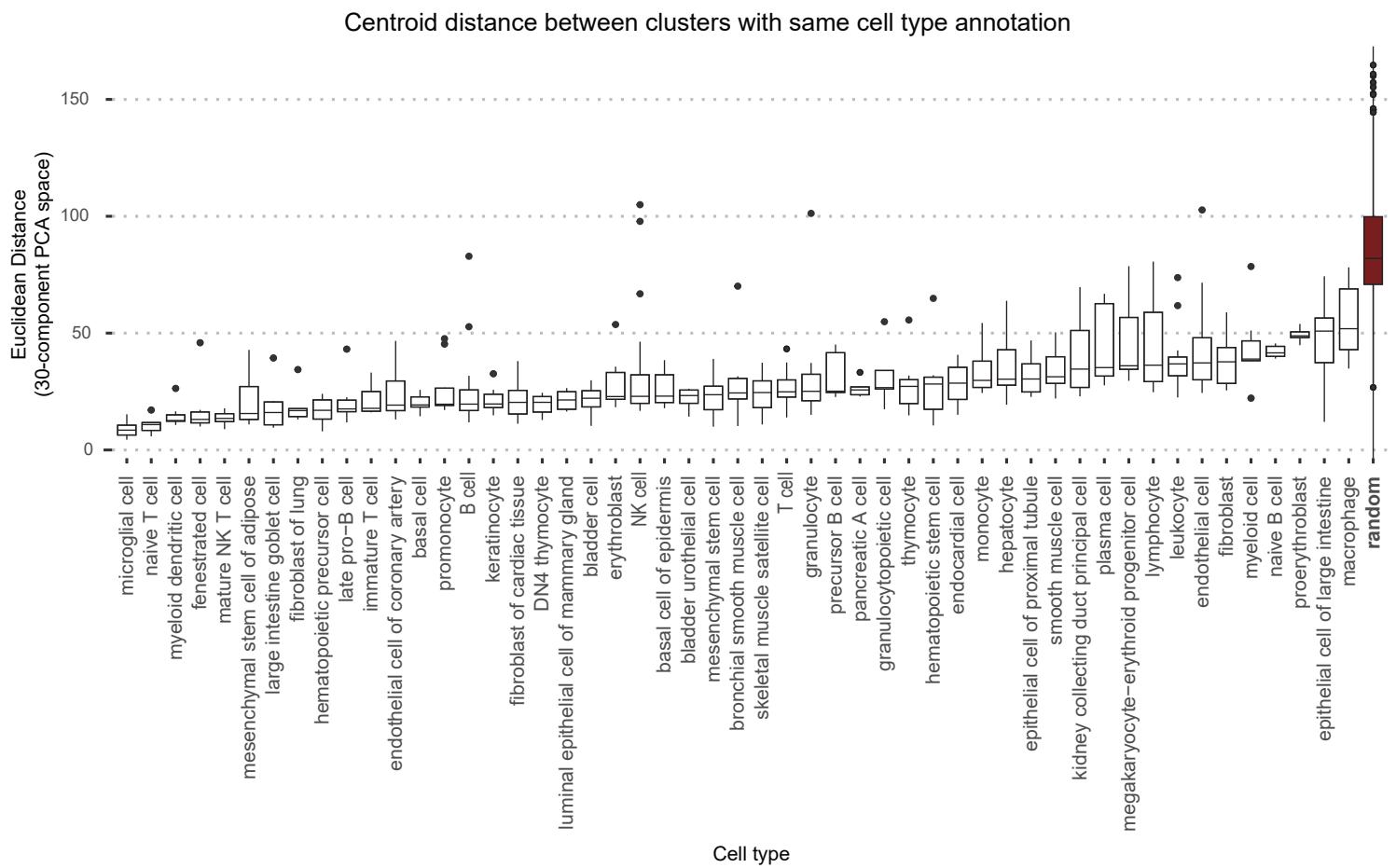


Figure 2, Supplement 1

A



B



C

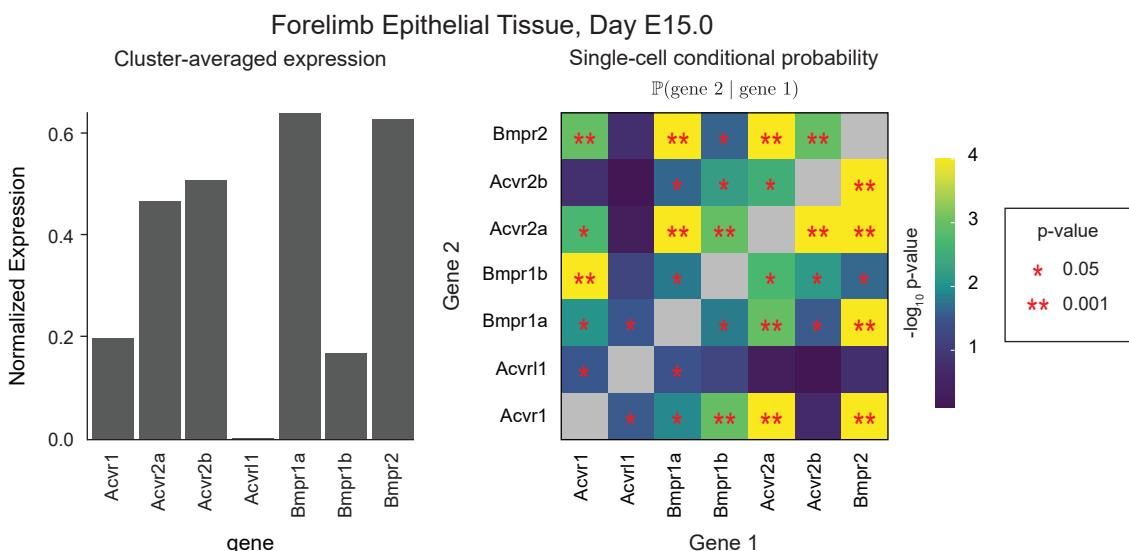
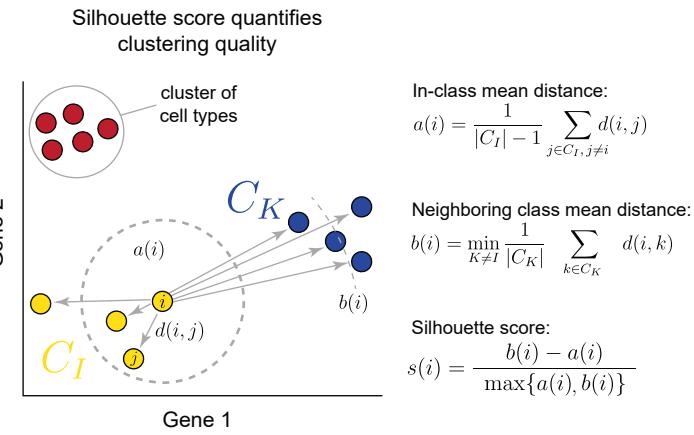


Figure 3, Supplement 1

A



B

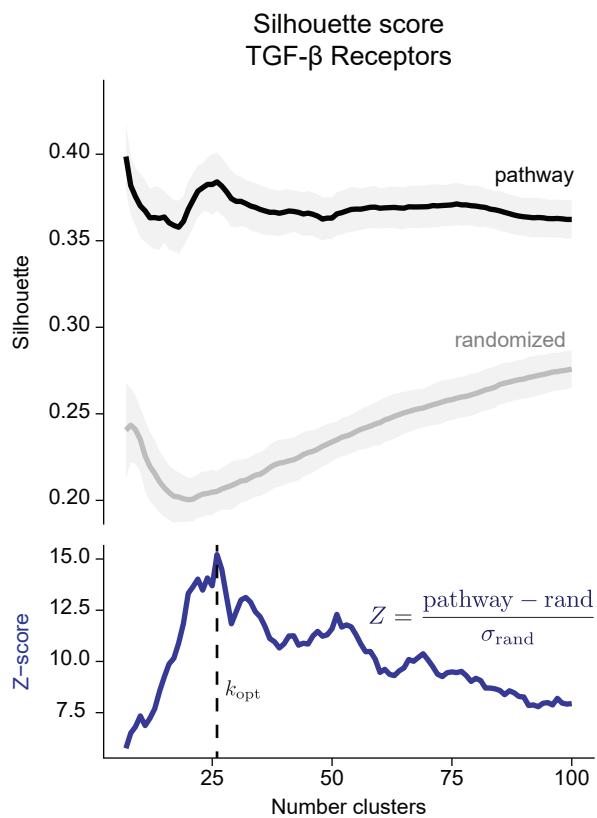
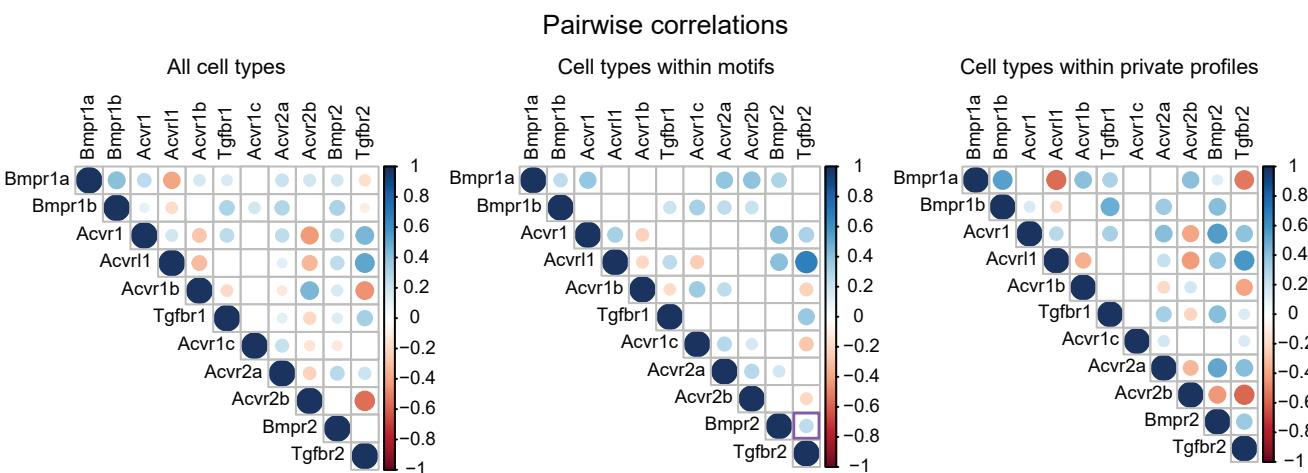


Figure 4, Supplement 1

A



B

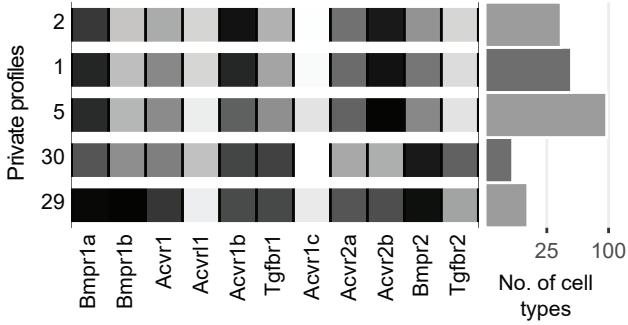
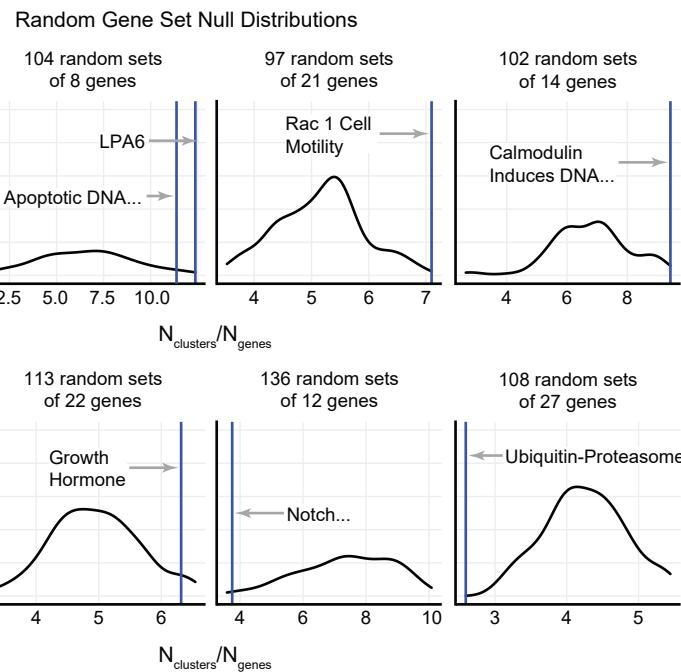


Figure 5, Supplement 1

A



B

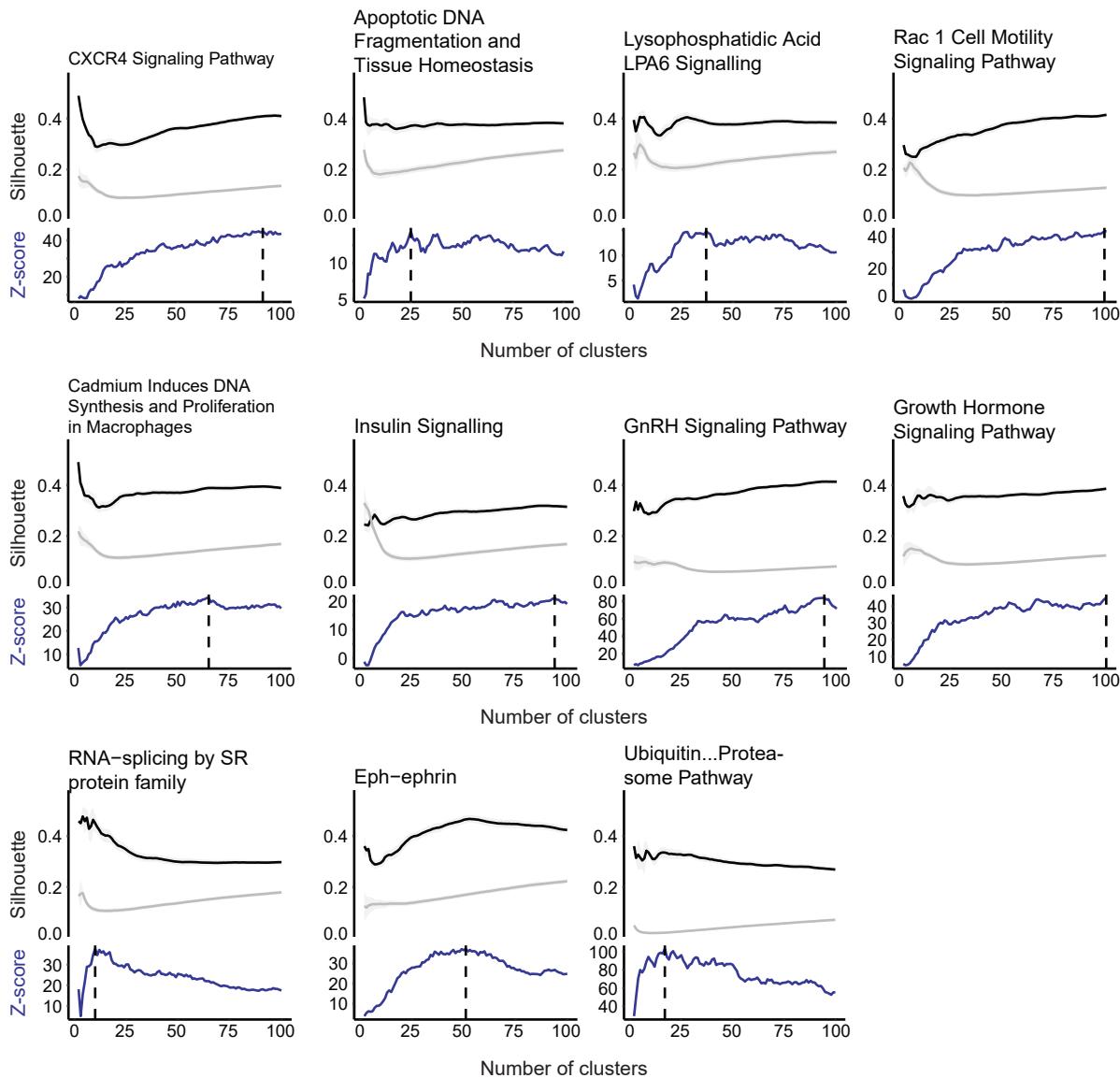
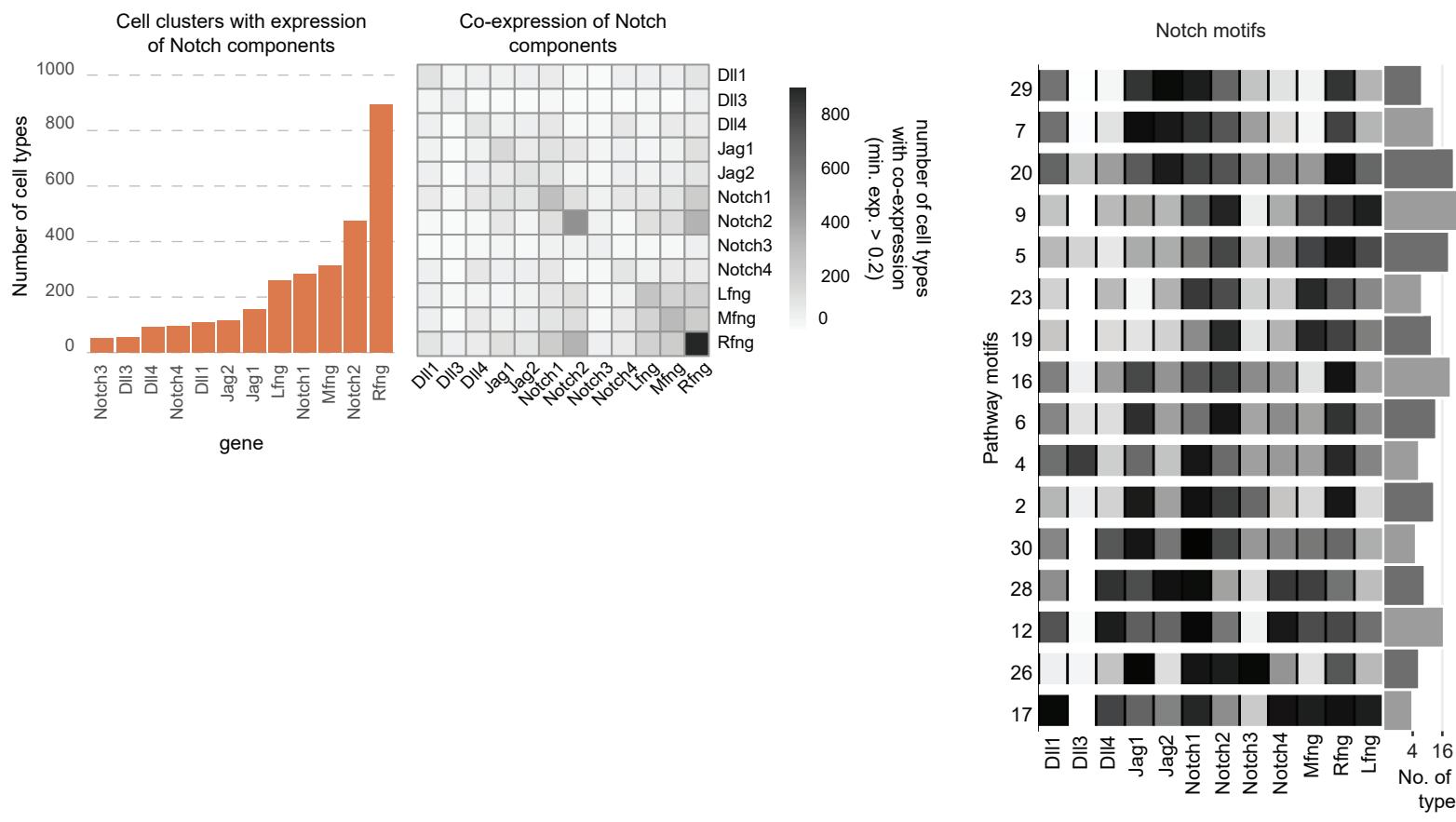
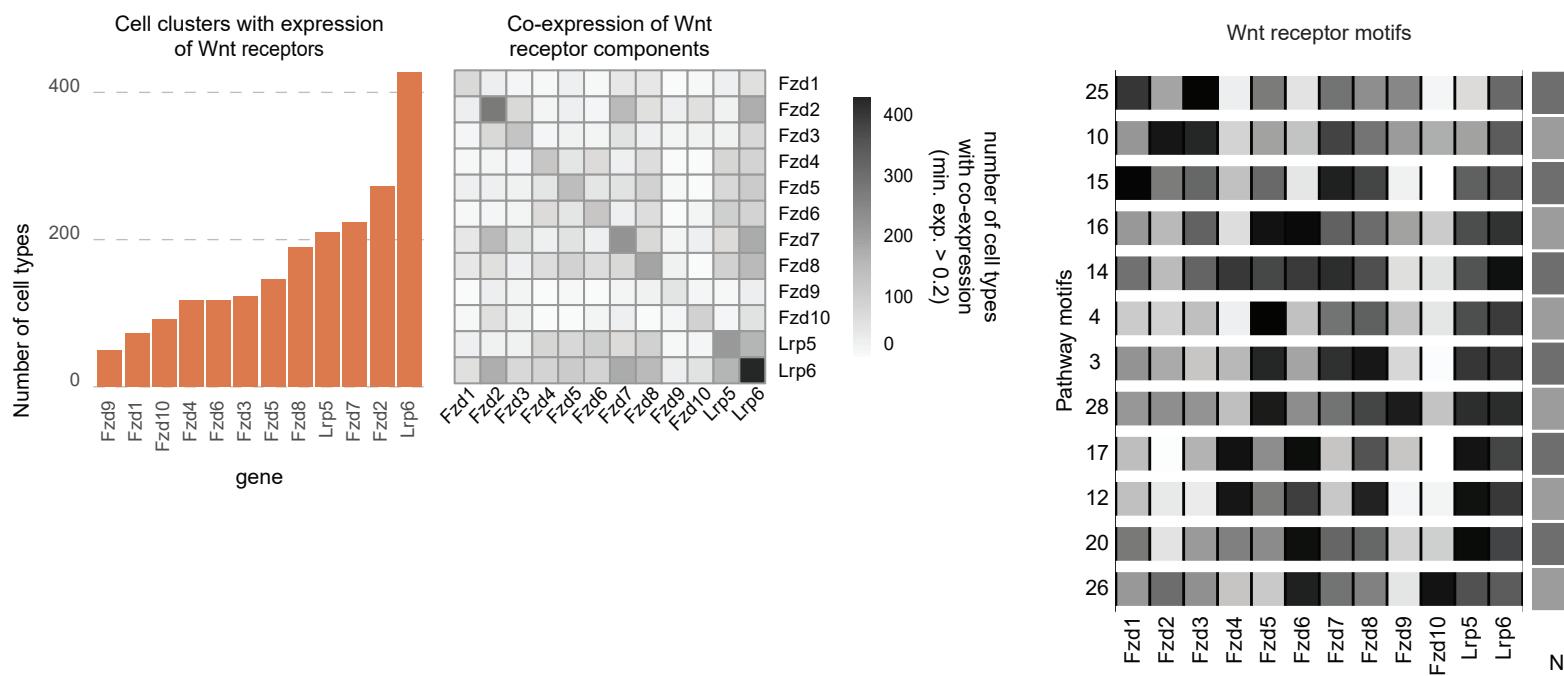


Figure 4 Supplement 2

A



B



C

