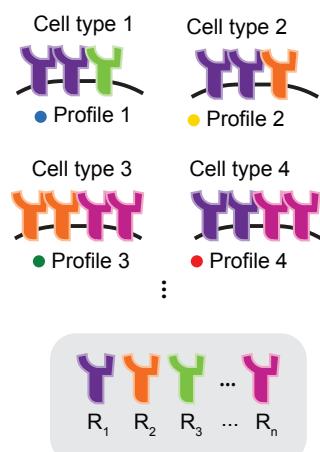


Figure 1: Pathway expression profiles could recur across diverse cell types

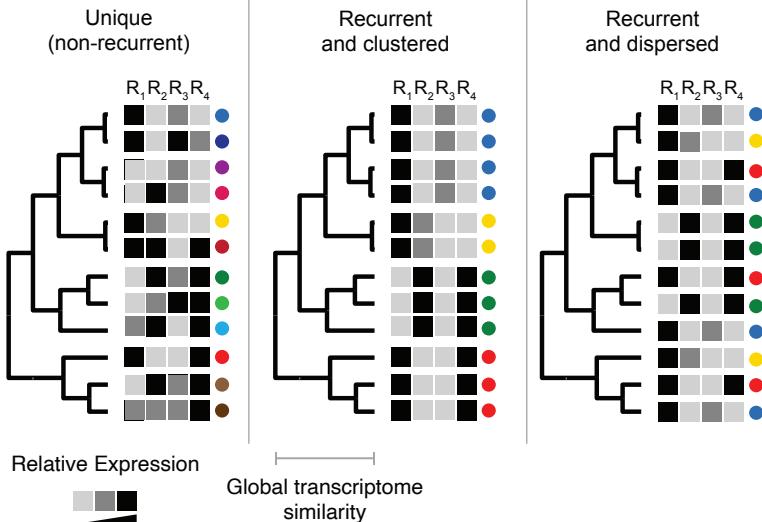
A

Receptor expression profiles



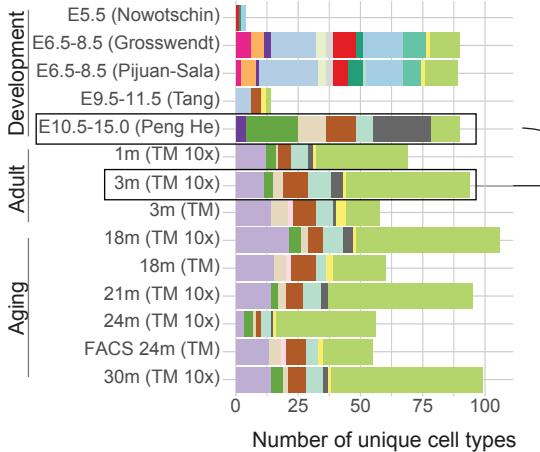
B

Pathway profiles could be...



C

Multiple mouse cell atlas datasets

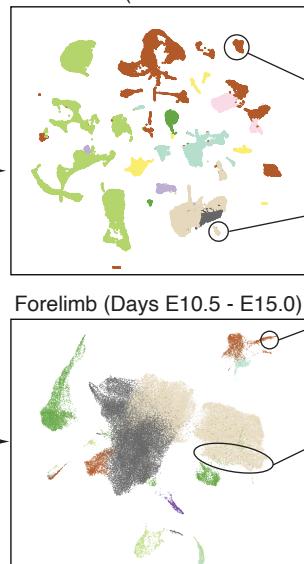


D

Individual cell atlases
Single-cell transcriptome profiles

1 dot = 1 cell

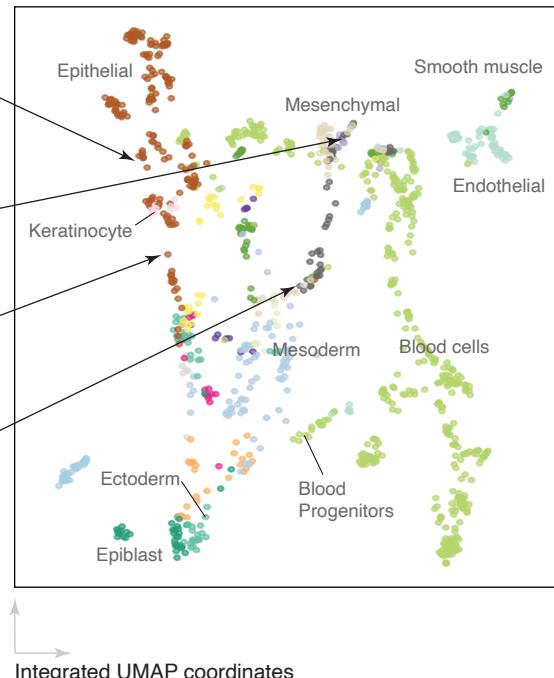
Tabula muris (3 month old mouse)



Integrated cell state atlas
Global cluster-averaged profiles

All data sets in (C)

1 dot = 1 cell cluster



E

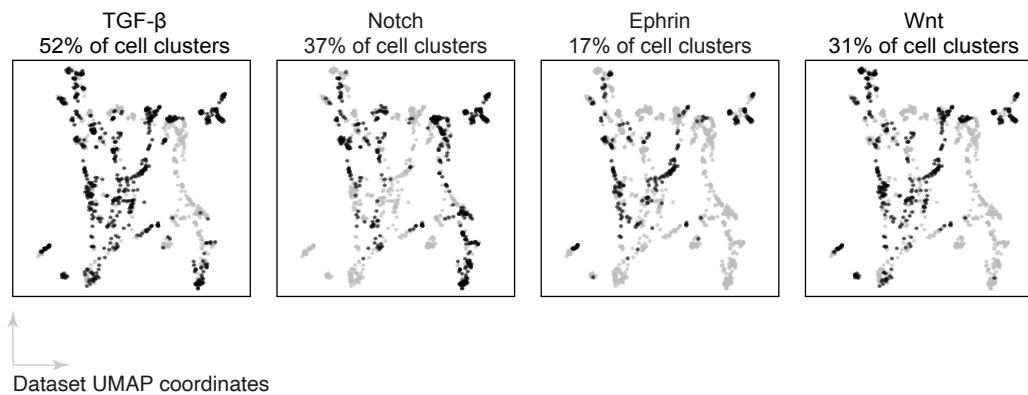
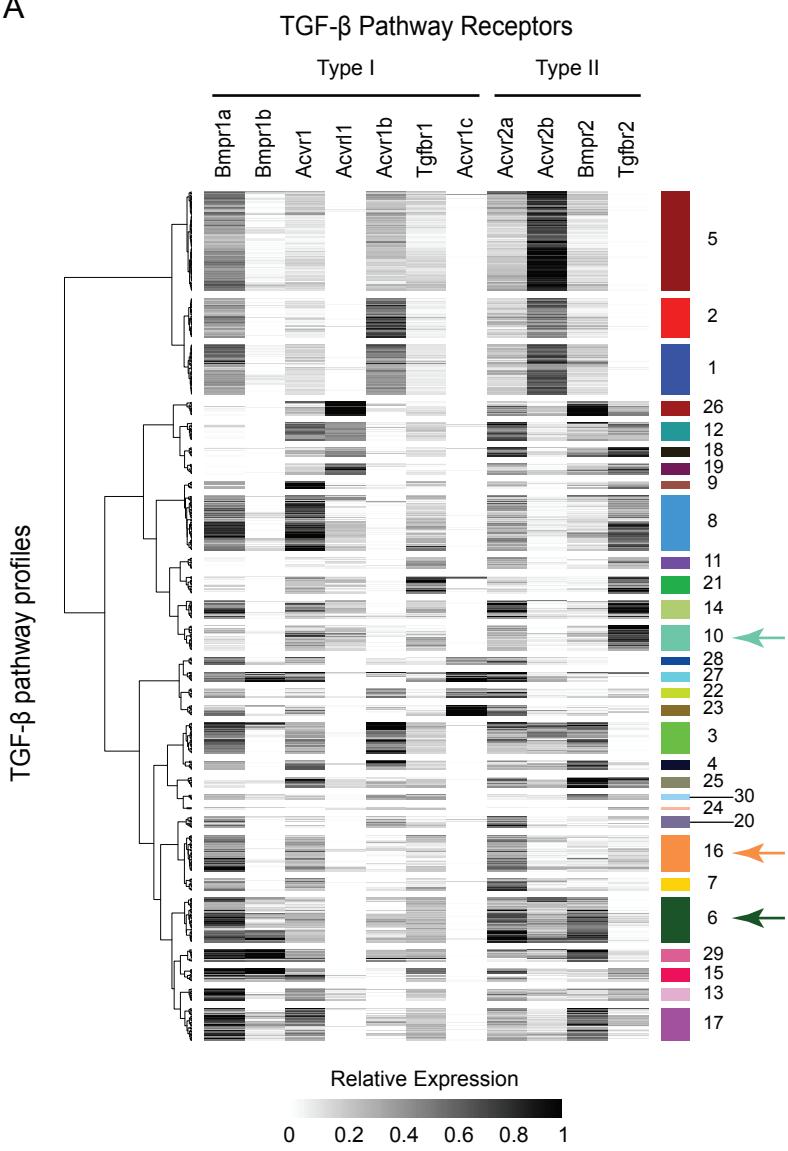
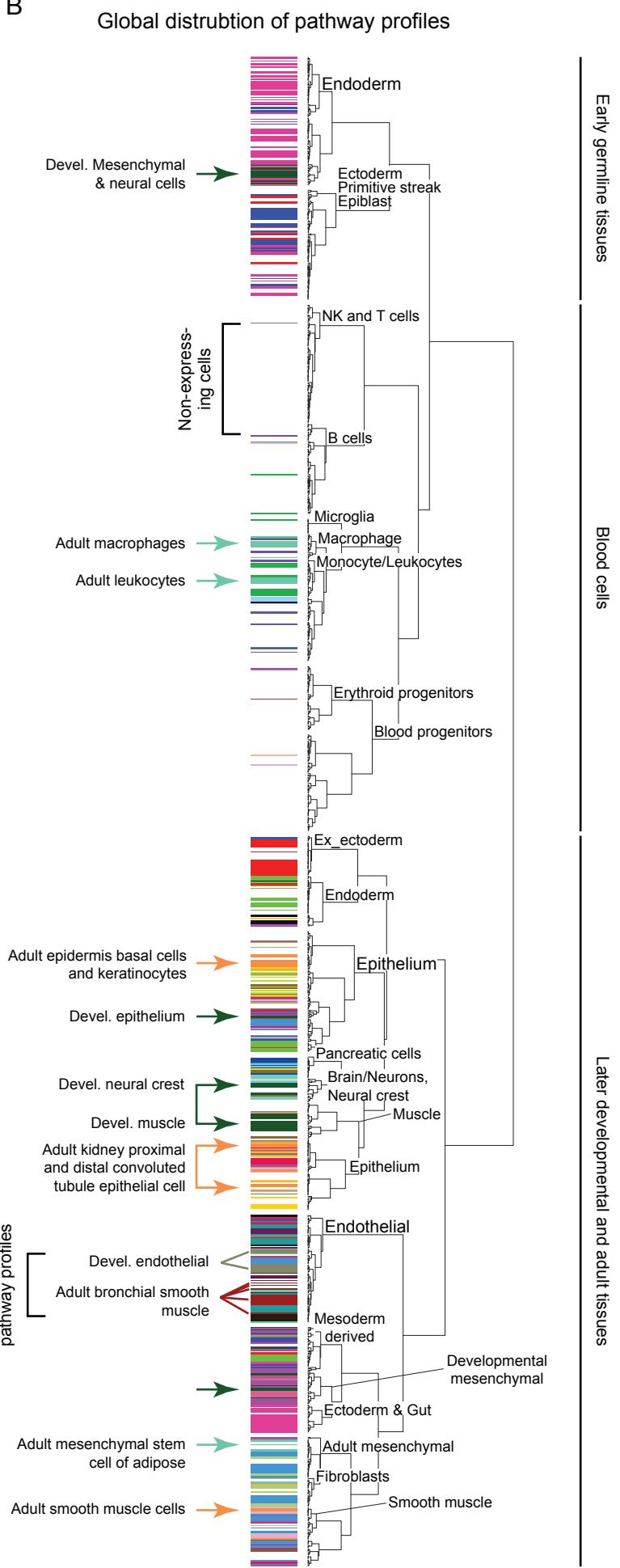


Figure 2: TGF- β Receptors exhibit distinct and recurrent pathway expression profiles

A



B



C

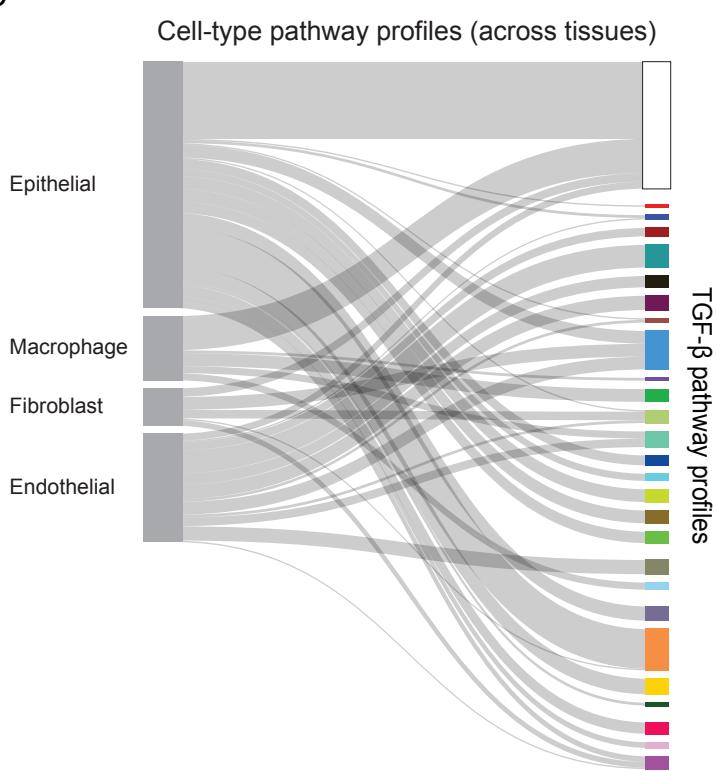
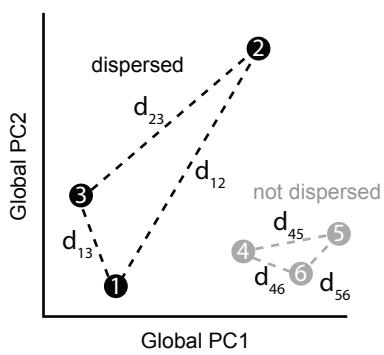


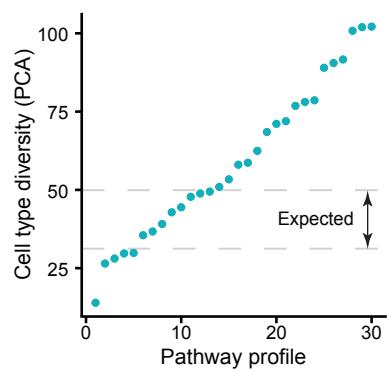
Figure 3: TGF- β expression motifs are dispersed across cell types and organs

A Pairwise distance computation (schematic)

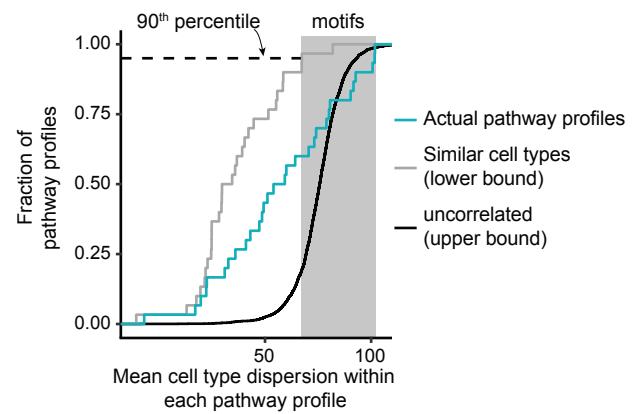
(Actual computation occurs in 100-dimensional PCA space)



Number of cell types with TGF- β profile

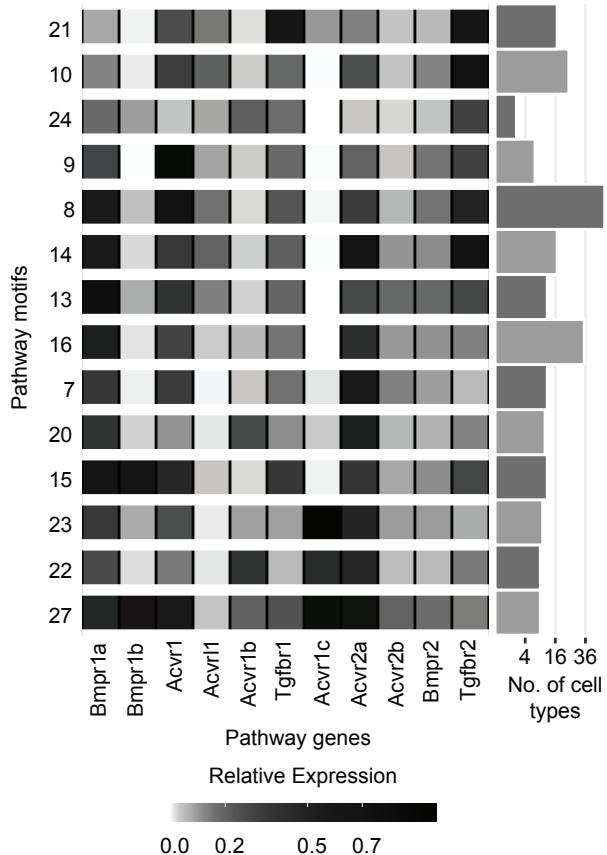


B



C

Broadly Dispersed TGF- β Motifs



D

Broadly Dispersed TGF- β Motifs

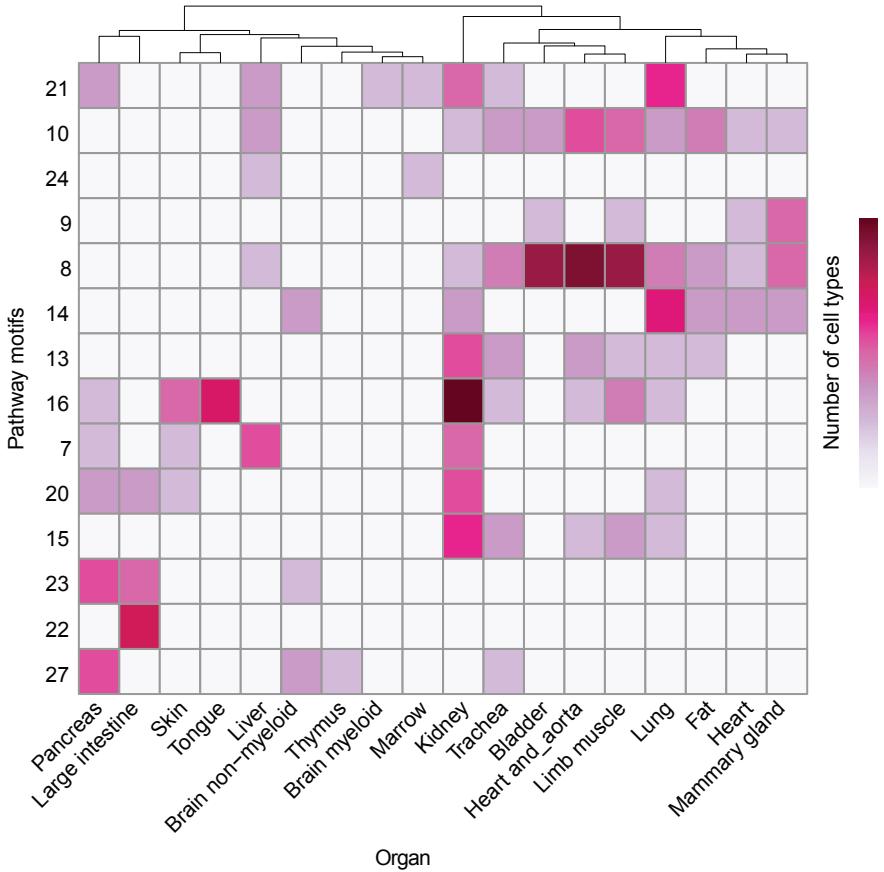


Figure 4: Wnt and Notch also show broadly dispersed recurrent pathway expression motifs

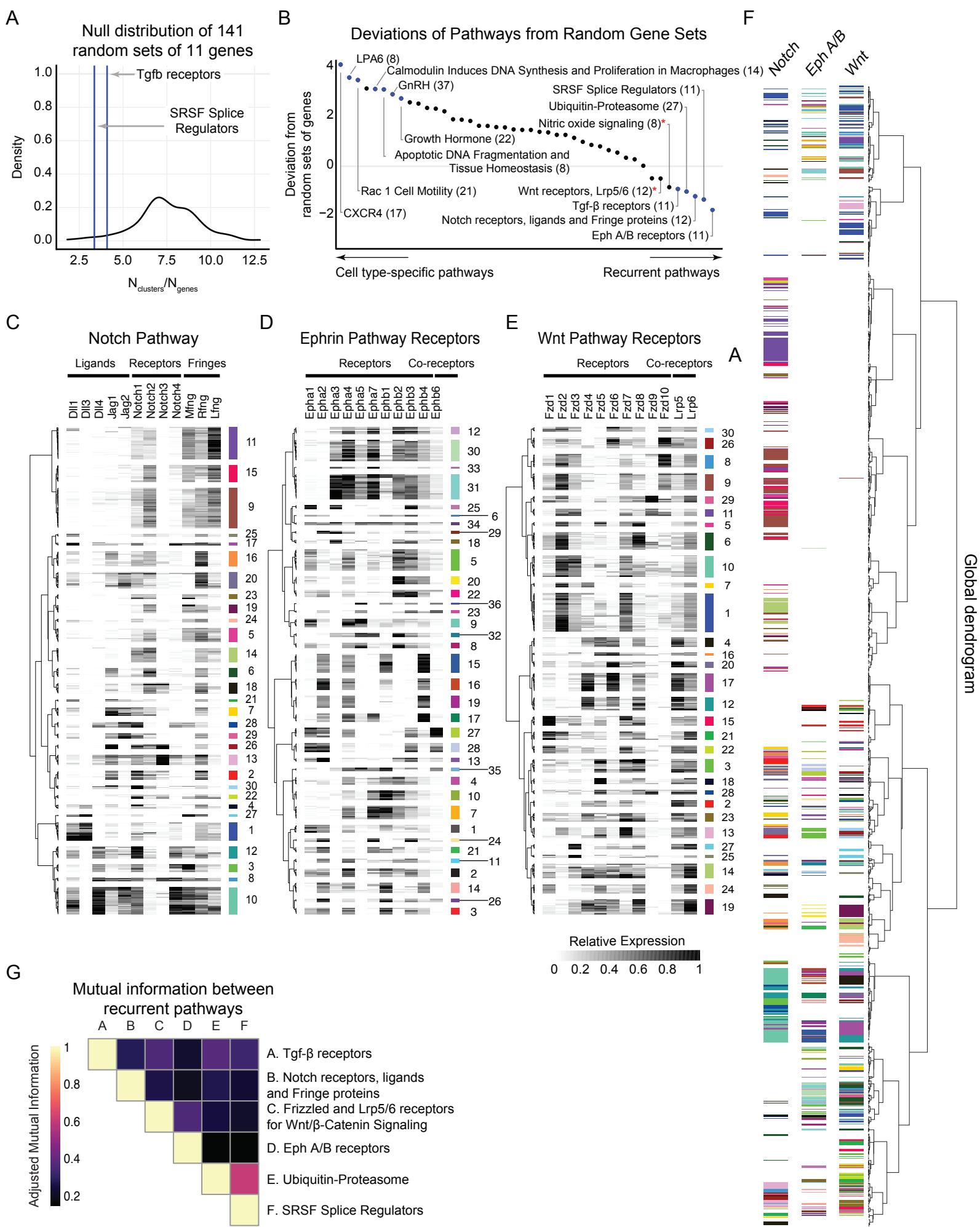
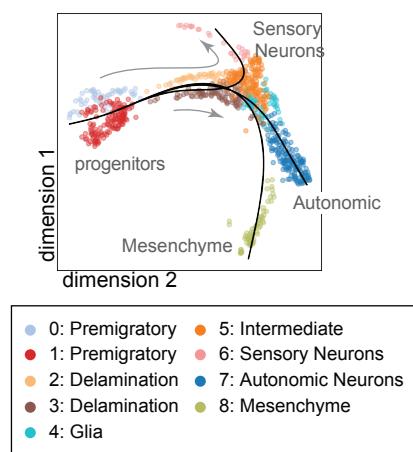


Figure 5:

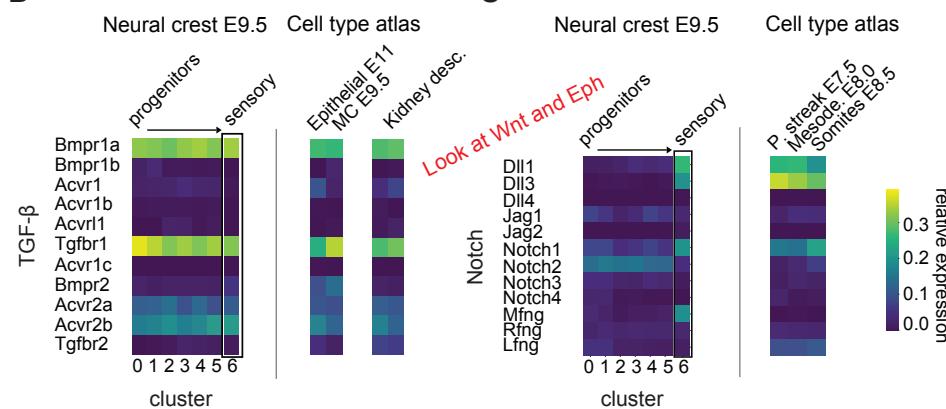
TGF- β and Notch show distinct dynamics in neural crest differentiation

A

Trunk Neural Crest (E9.5)



B

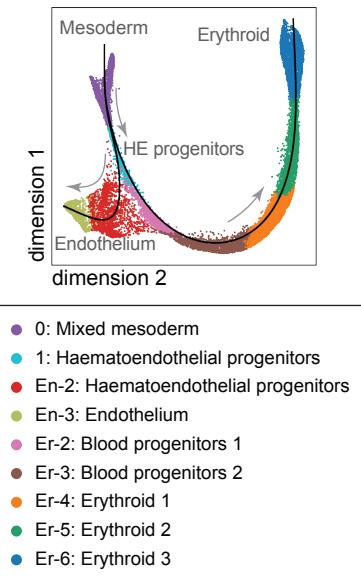


C

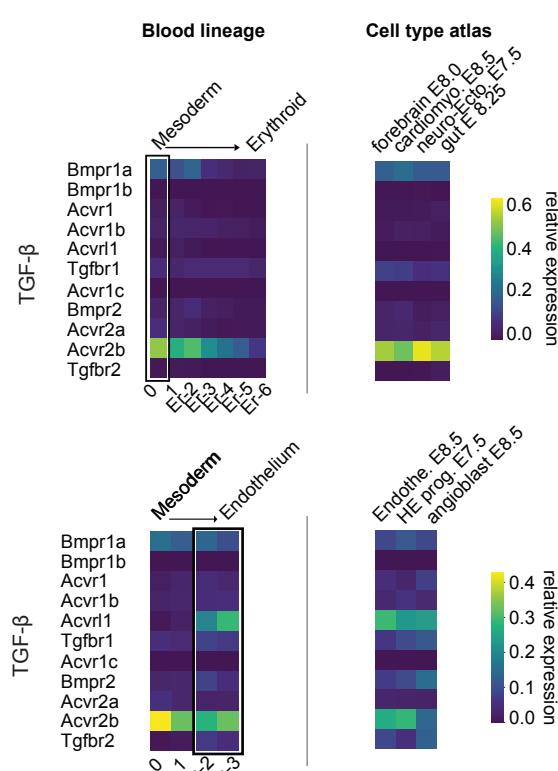
TGF- β shows fate-dependent dynamics in vascular differentiation

D

Early vascular differentiation



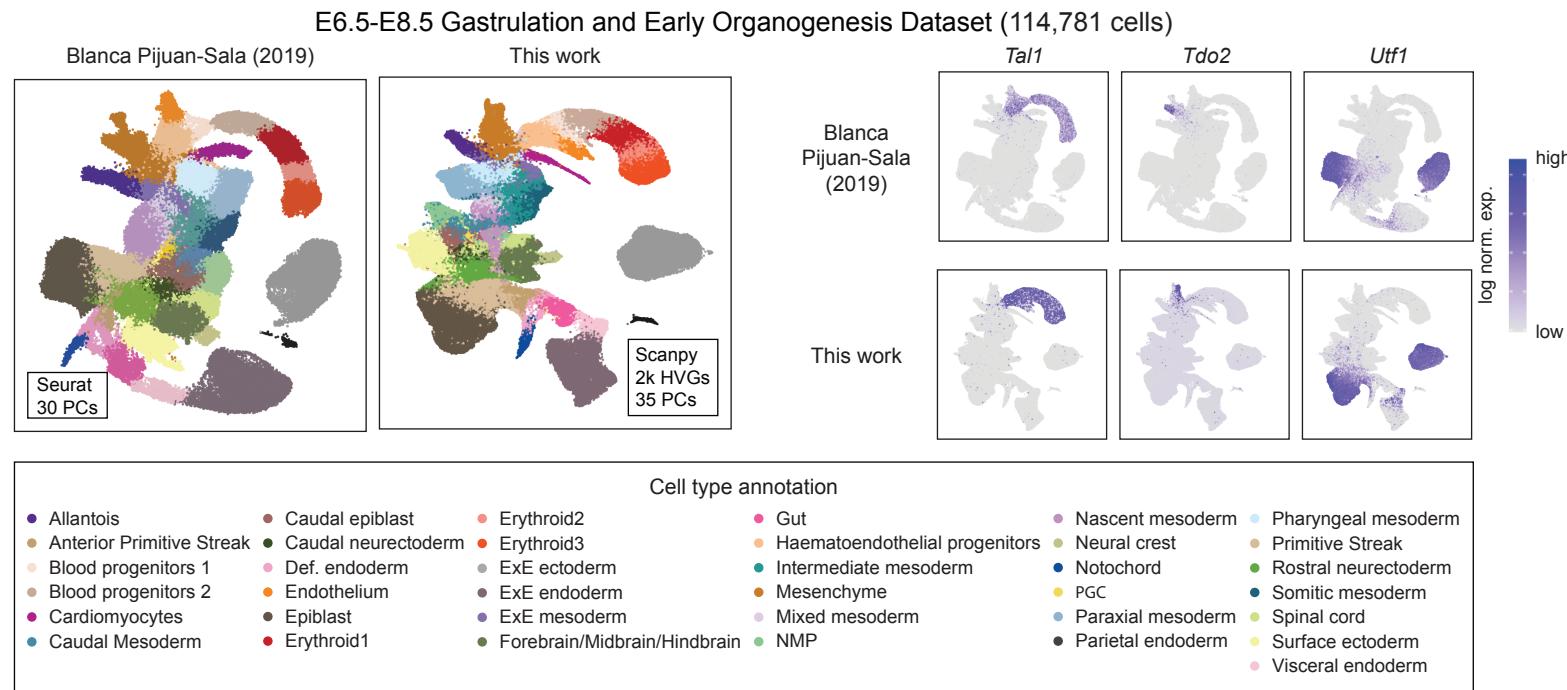
E



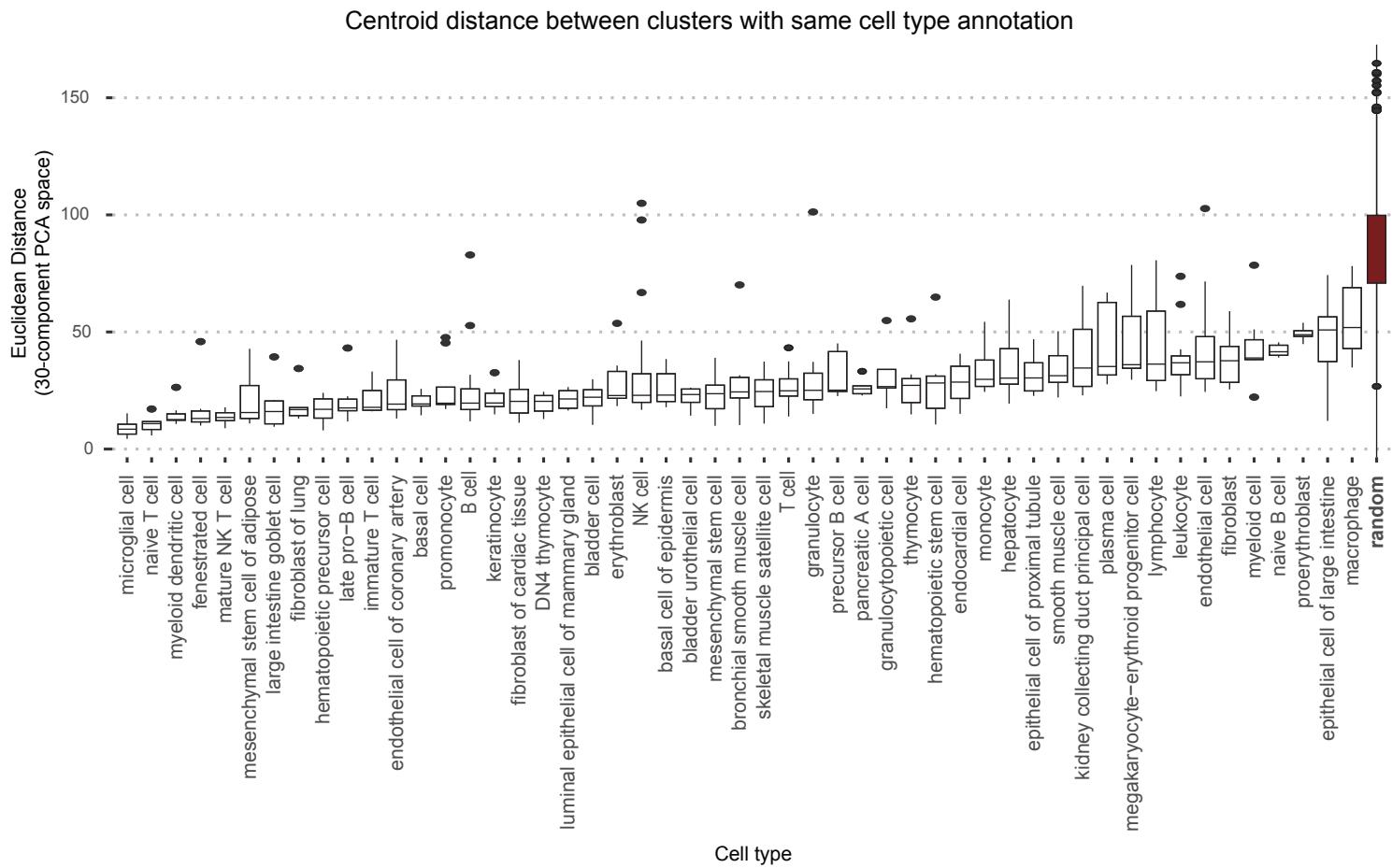
Stability during Aging result

Figure 1, Supplement 1

A



B



C

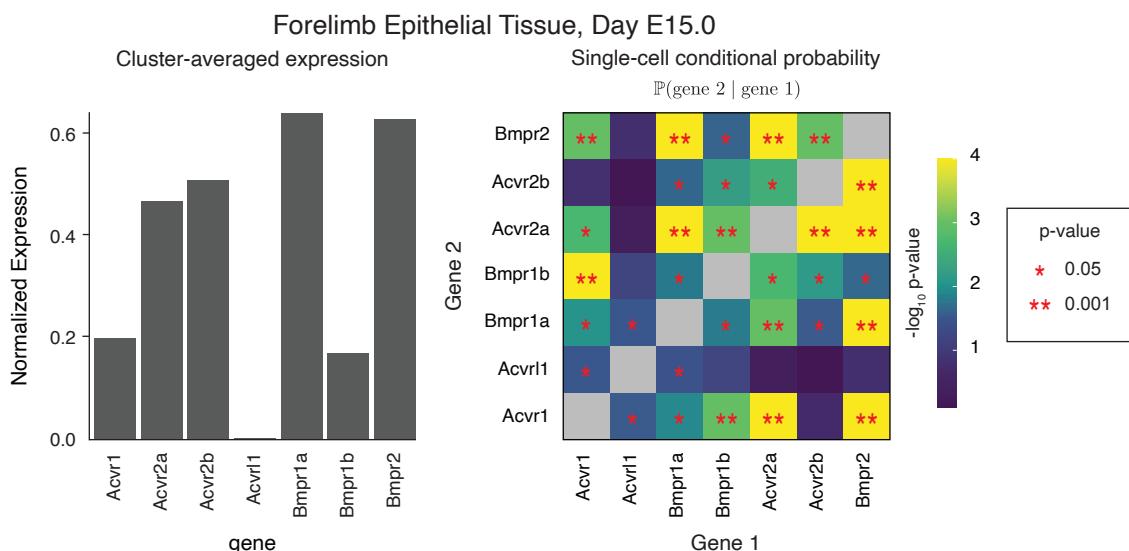
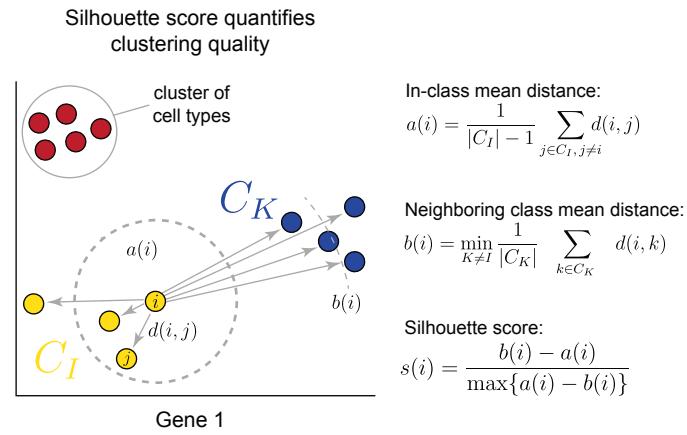


Figure 2, Supplement 1

A



B

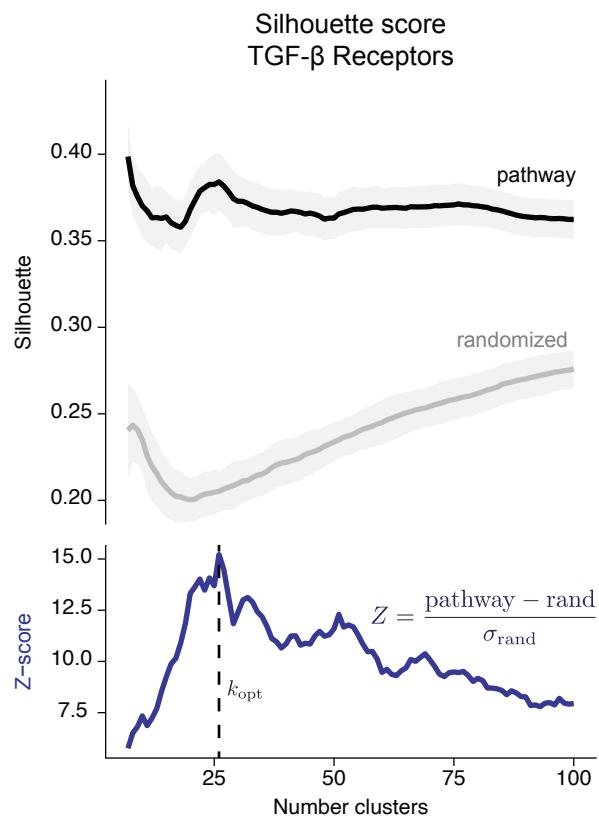


Figure 3 Supplement 1

A

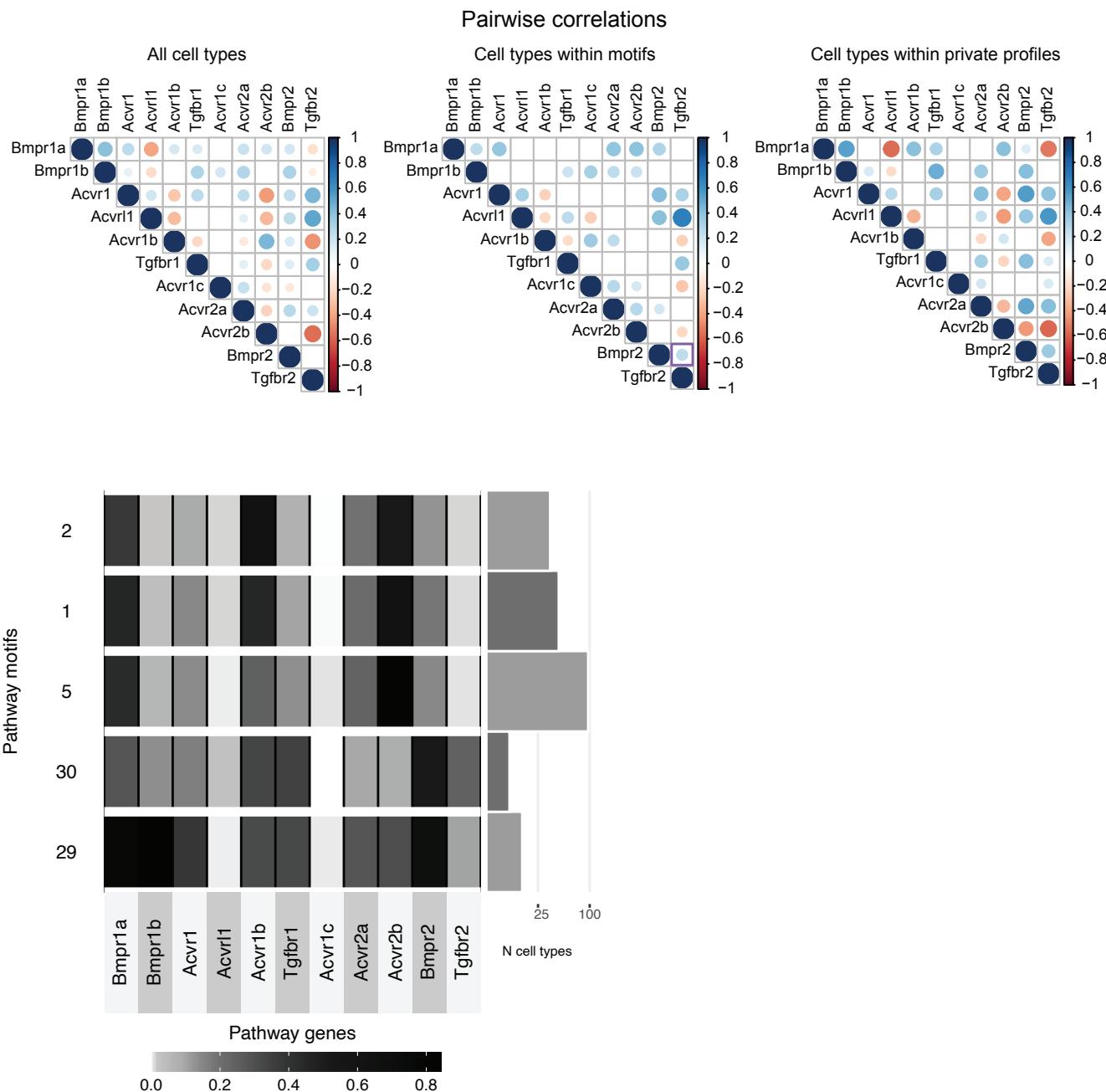
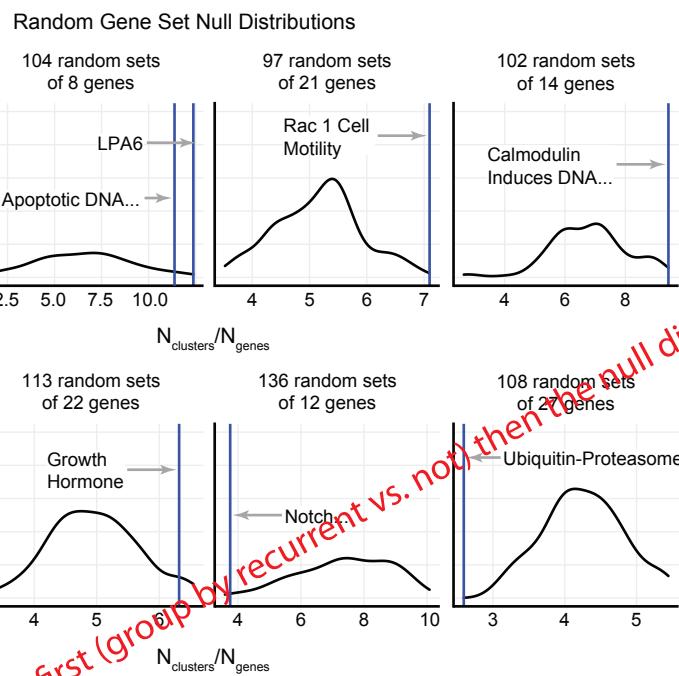


Figure 4 Supplement 1

B



A

Put silhouette plots first (group by recurrent vs. not) then the null distribution plots as B

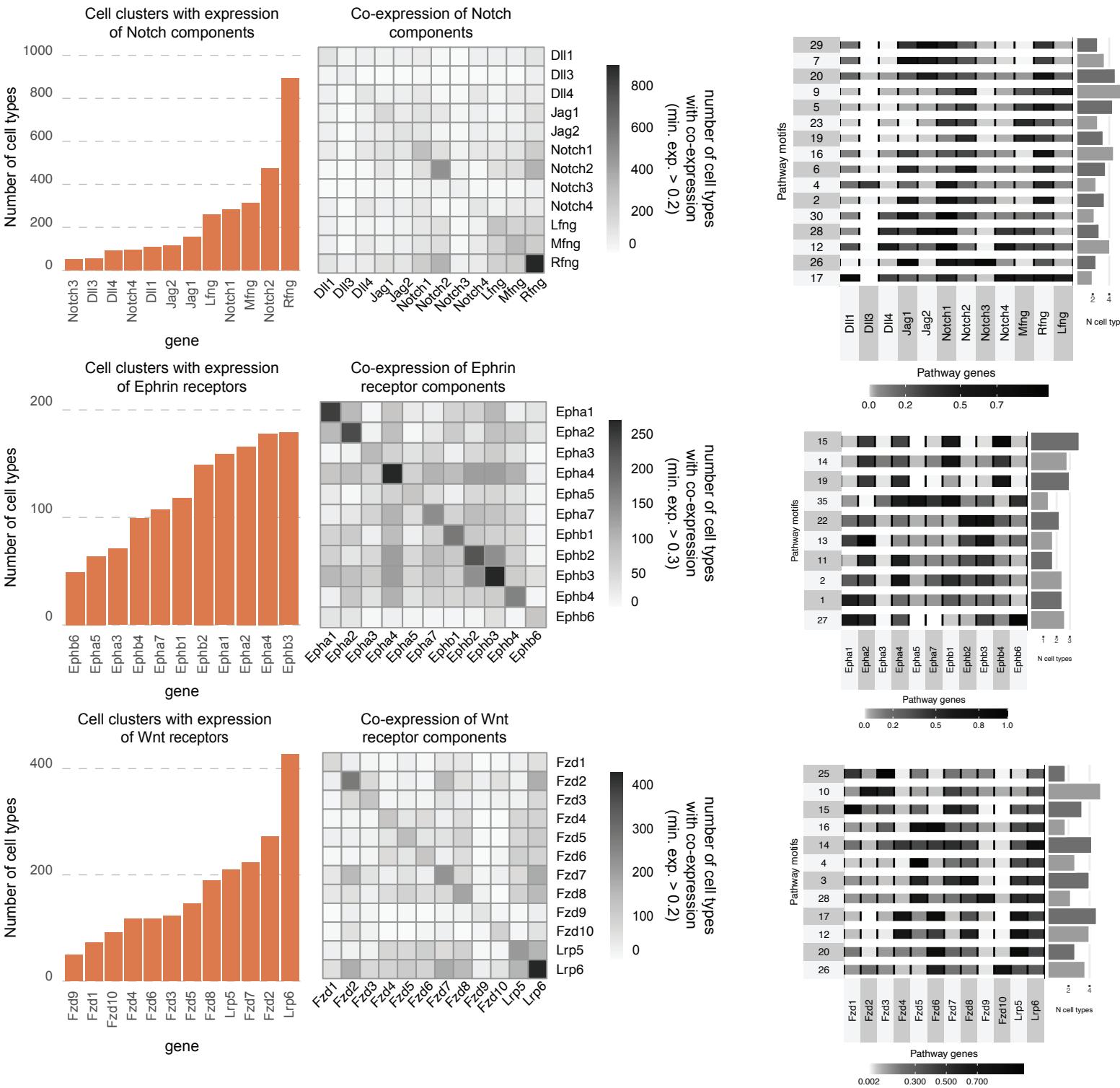


Figure 2, Supplement 2

