



Transcription factor regulation network and intercellular signaling pathways among lineages

(a-c) Lineage specific TF regulons and their target genes. Each circle represents one target gene of the TF regulon, and the colors indicated the corresponding mean expression ratio between the enrich lineage and other cell lineages. GLI2 regulon for EPI, OTX2 regulon for PE and TEAD1 regulon for TE.

(d) Violin plot showing the expression levels of FGF signaling components in lineages and FGF signaling pathway interactions between EPI and PE lineages. The ligand FGF2 was expressed in the EPI, while the receptors FGFR1 and FGFR2 were expressed in PE cells, indicating that FGF signaling in the PE might be activated.

(e) WNT signaling interaction between EPI and PE lineage cells. The ligands WNT3 and WNT5B were expressed by EPI cells and accepted by PE cells through the receptors FZD4, with the target gene FZD7 upregulated. Scale="width", all violins have the same maximum width. 3,145 cells were included. EPI: 282 cells, PE: 138 cells, TE: 2,725 cells.

(f) Hedgehog signaling interaction between EPI and PE lineage cells. The ligand IHH, secreted from PE, was accepted by the receptor PTCH1 in the EPI. Then, Hedgehog signaling in the EPI might be activated through PTCH1 and GLI2, with the target gene ALPL upregulated. Scale="width", all violins have the same maximum width. 3,145 cells were included. EPI: 282 cells, PE: 138 cells, TE: 2,725 cells.