

## Description of Additional Supplementary Files

File Name: Supplementary Movie 1

Description: gene expression in wild type.

File Name: Supplementary Movie 2

Description: gene expression with DAPT treatment.

File Name: Supplementary Movie 3

Description: gene expression with MLN4924 treatment.

File Name: Supplementary Movie 4

Description: gene expression in *Dll1* deficient.

File Name: Supplementary Movie 5

Description: gene expression in *Jag1* deficient.

In all movies, the left panels show temporal expression of Hes1 (green) and Ptf1a (red) in each cell on 3D spatial structure, and the right panels show temporal expression of Dll1 and Jag1 in each cell with different colors.