

Figure 1s

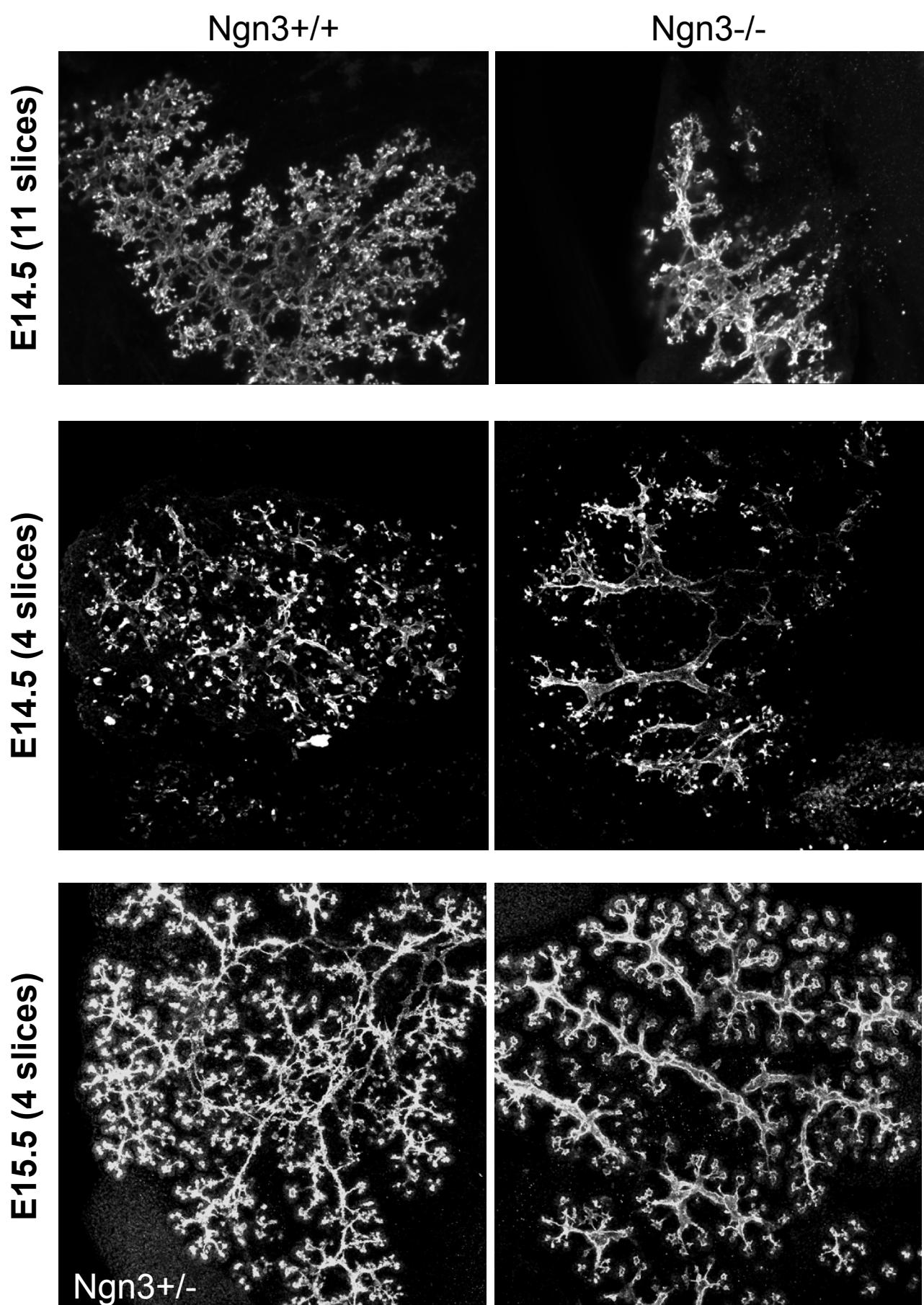


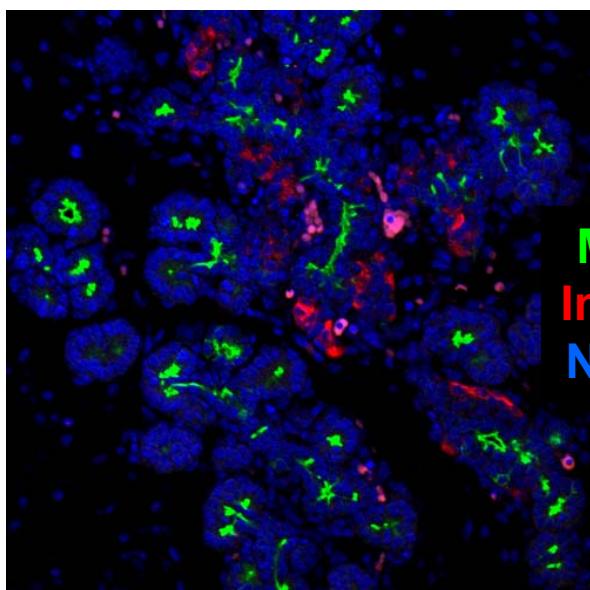
Figure 2s

A

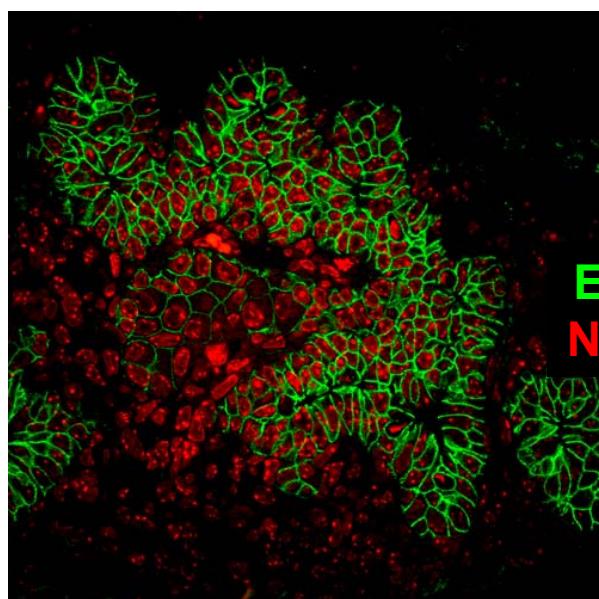
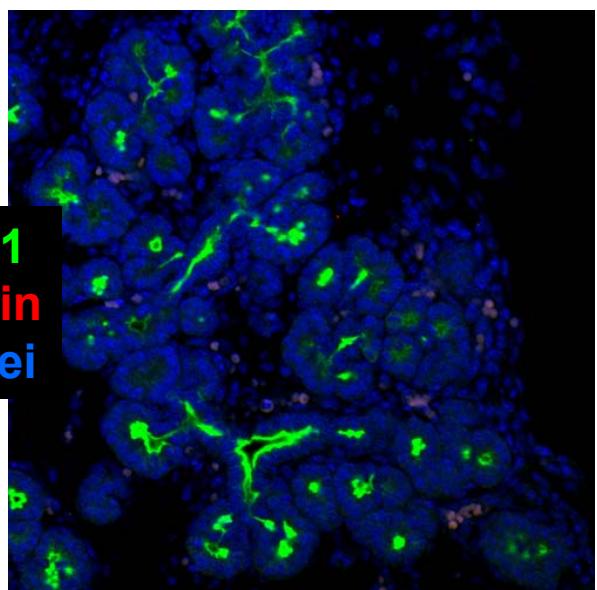
Ngn3^{+/+}

E15.5

Ngn3^{-/-}



Muc1
Insulin
Nuclei



E-cad
Nuclei

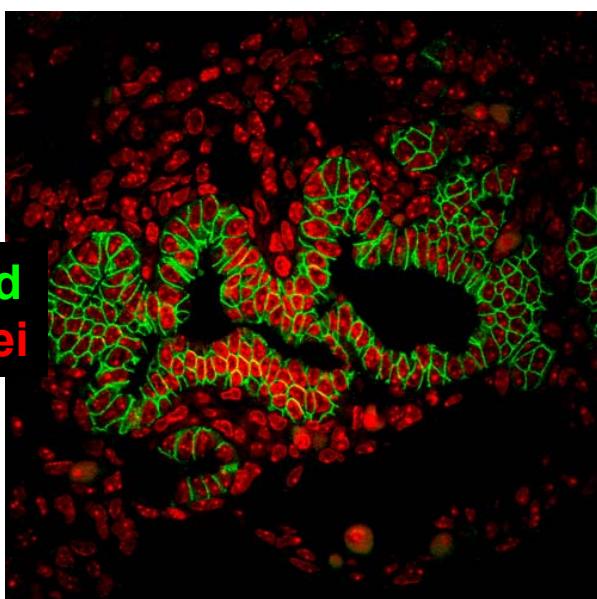
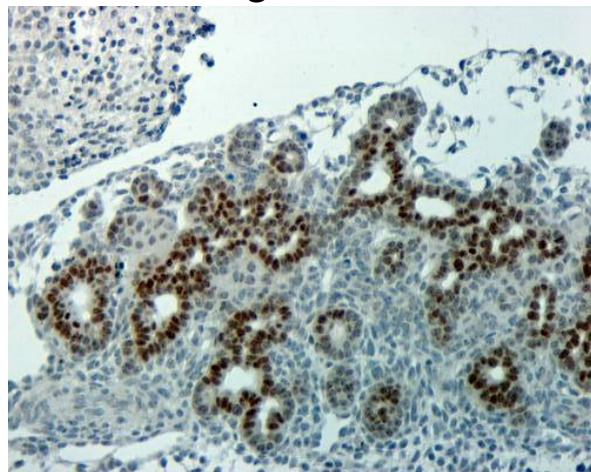


Figure 2s

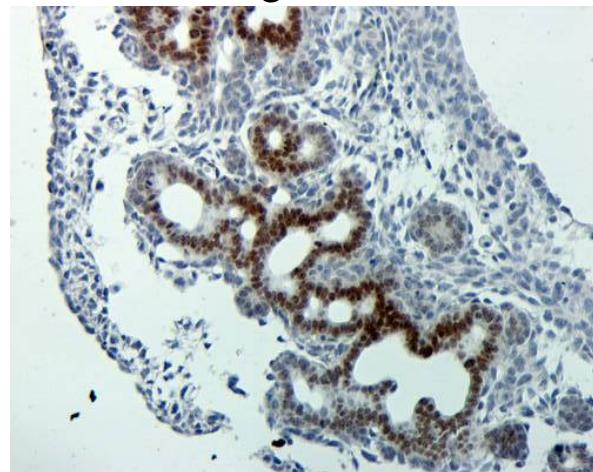
B

Ngn3^{+/+}



Hnf1 β

Ngn3^{-/-}



Hnf-6

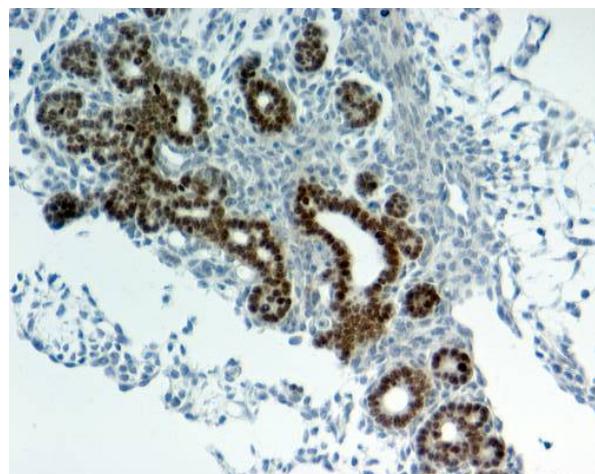
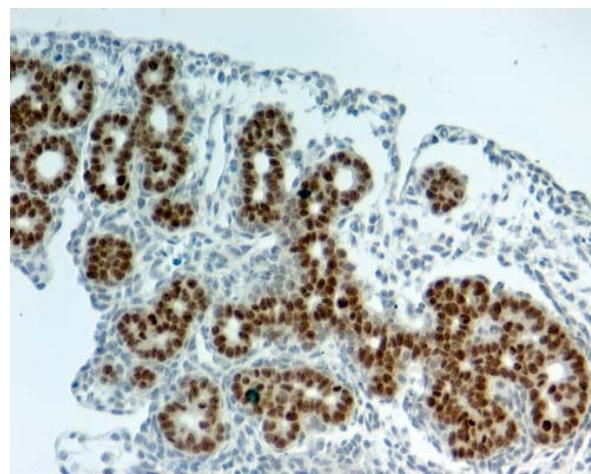
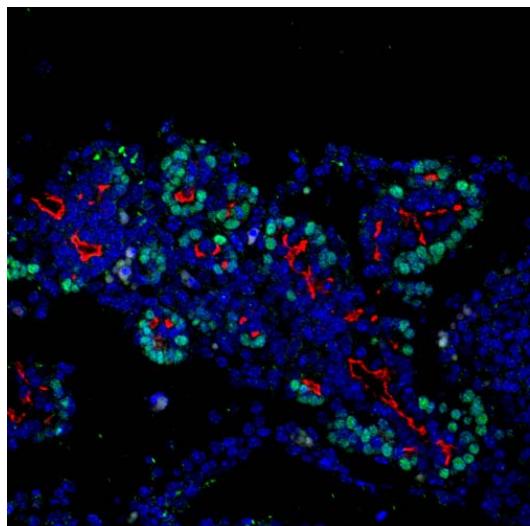


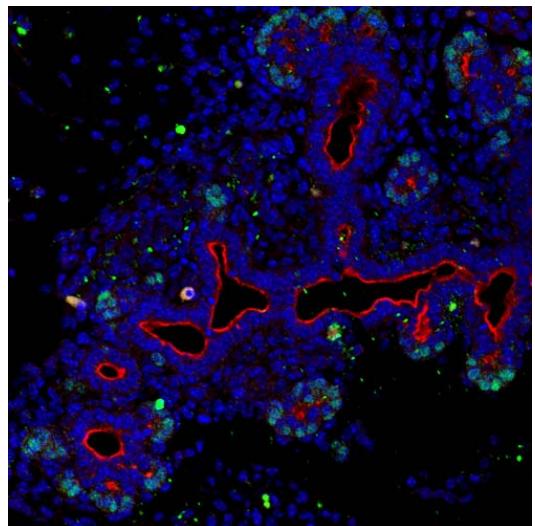
Figure 2s

C

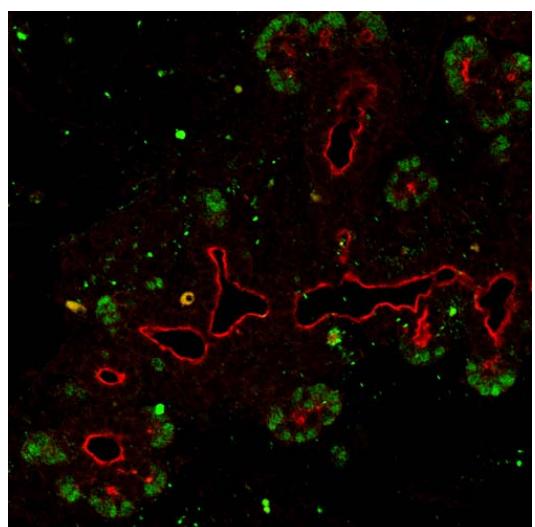
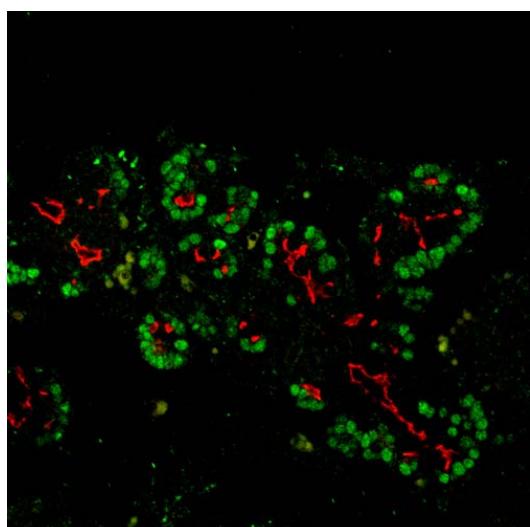
Ngn3^{+/-}



Ngn3^{-/-}



Ptf1a Muc1 Nuclei



Nkx6.1 Muc1

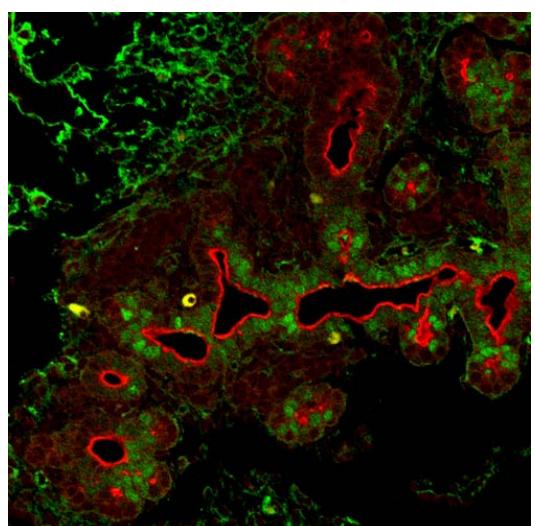
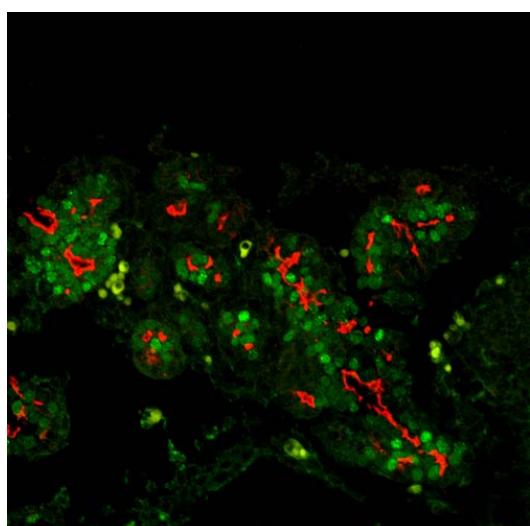
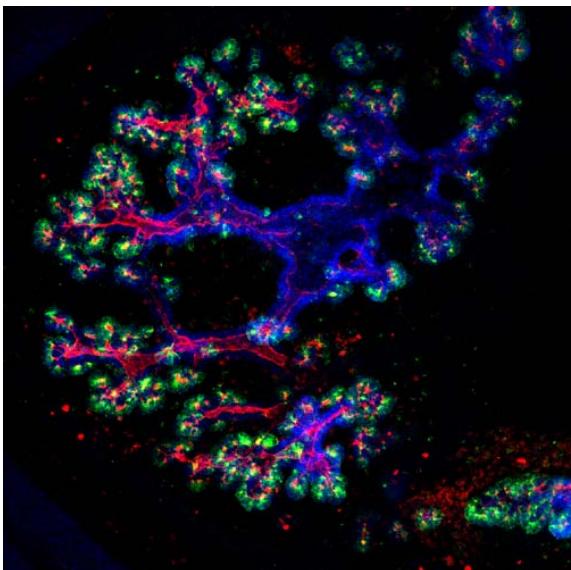
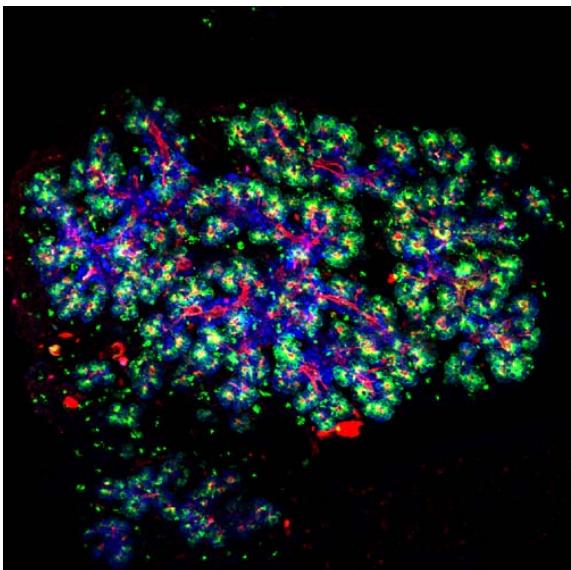


Figure 2s
D

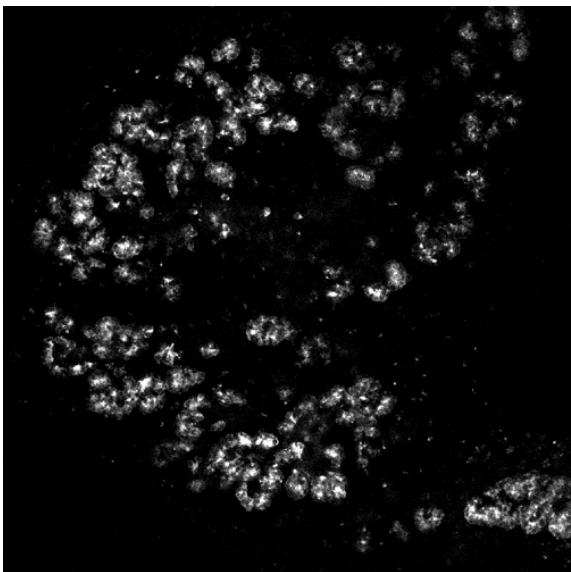
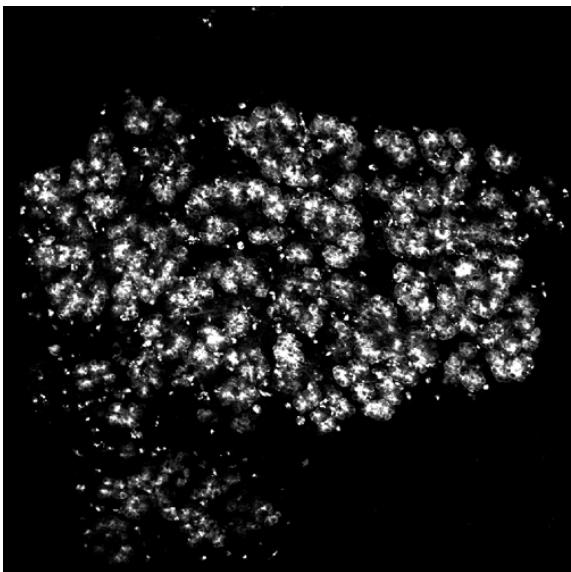
Ngn3 +/−

Ngn3 −/−

Pdx1 Muc1 Cpa1



Cpa1



Muc1

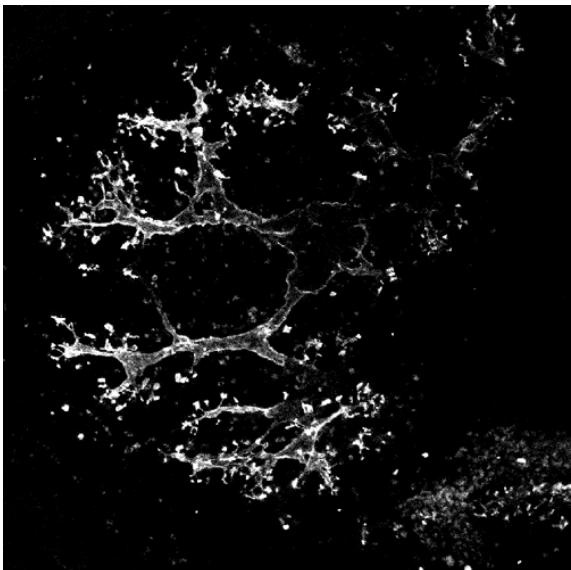
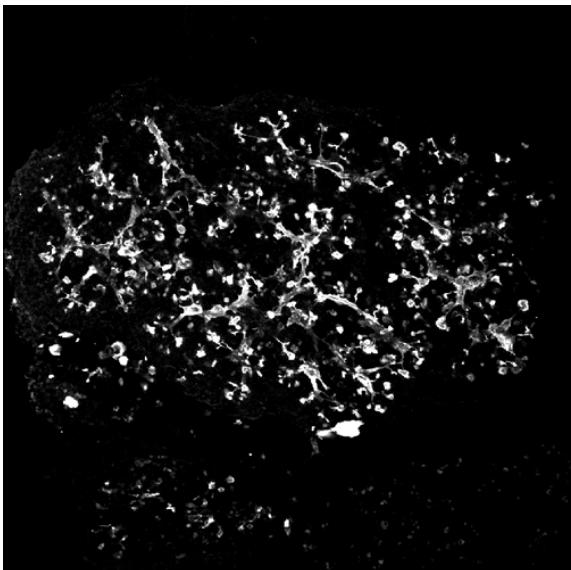
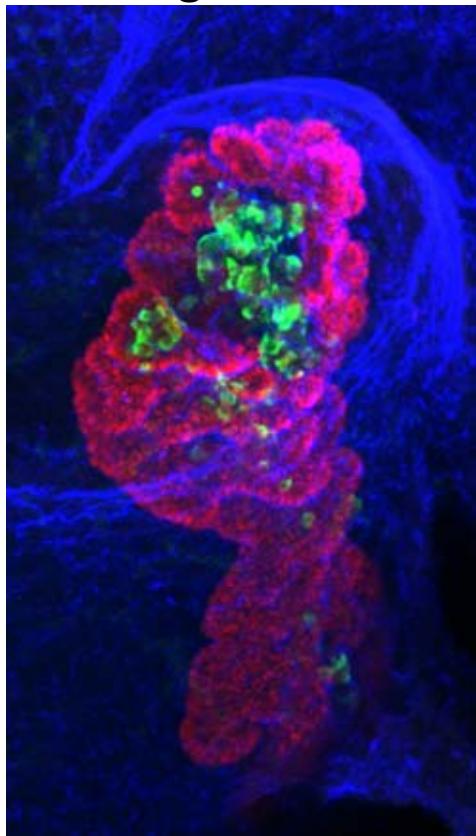


Figure 2s

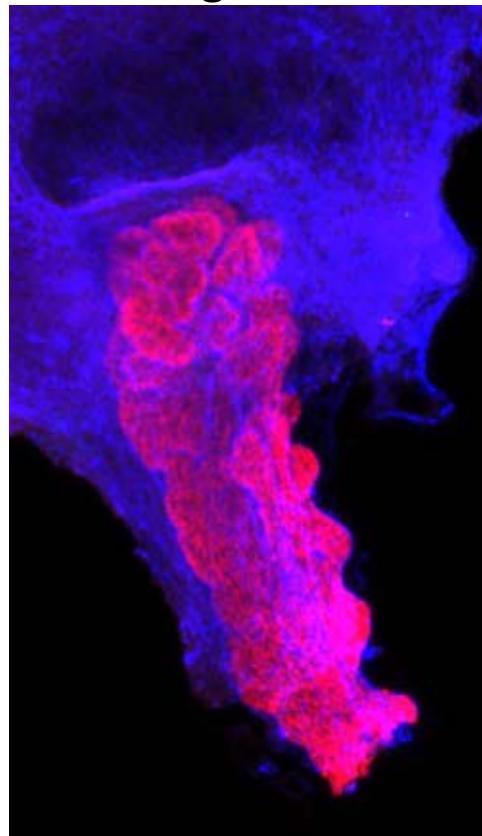
E

Pdx1 Collagen type IV Ins

Ngn3 +/+



Ngn3 -/-



Muc1

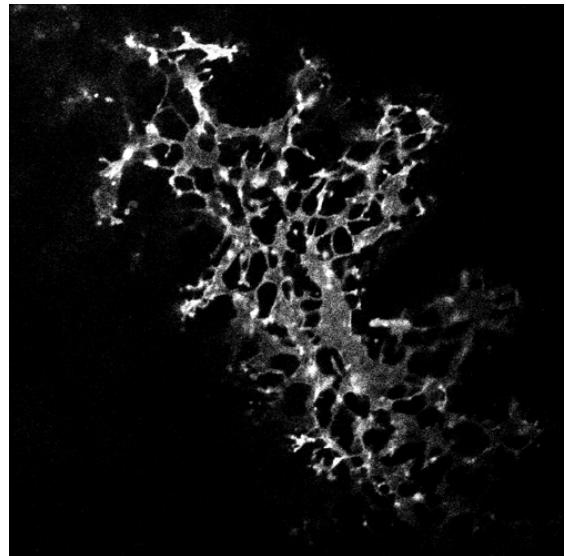
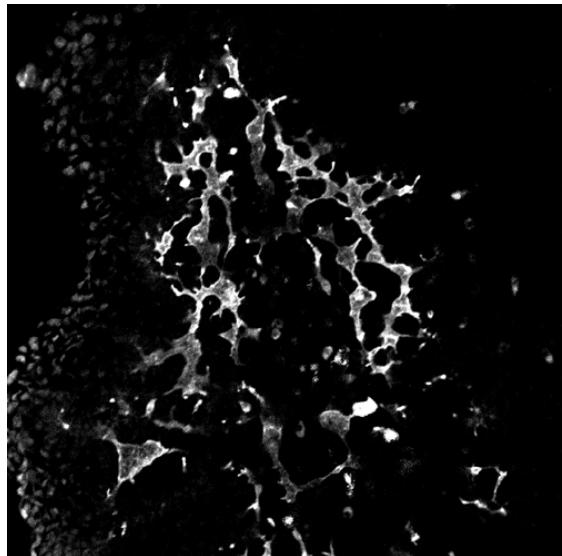
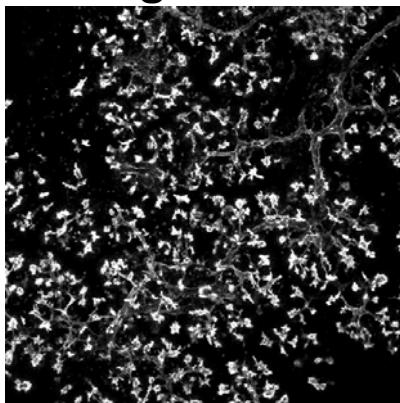


Figure 3s

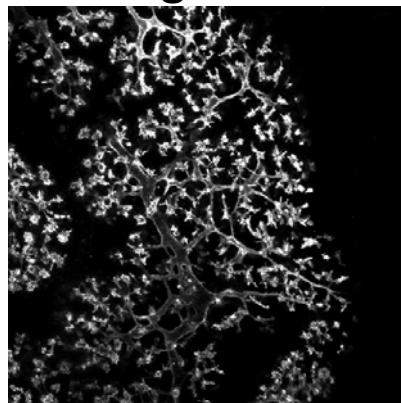
A

Ngn3 +/+

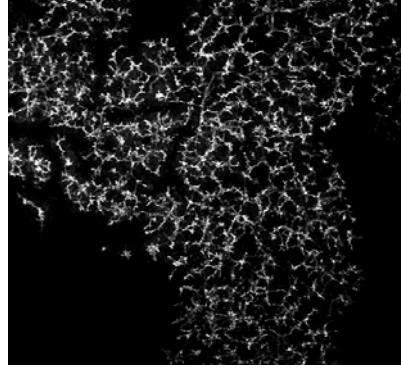
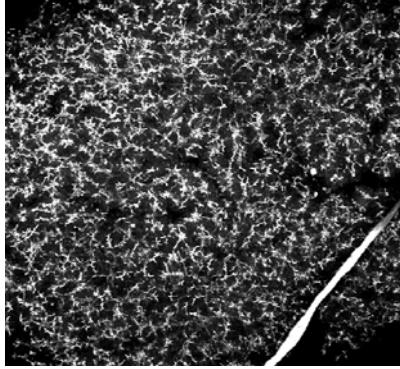
E16.5 (4 slices)



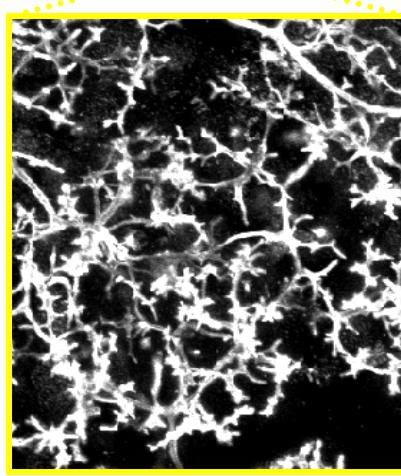
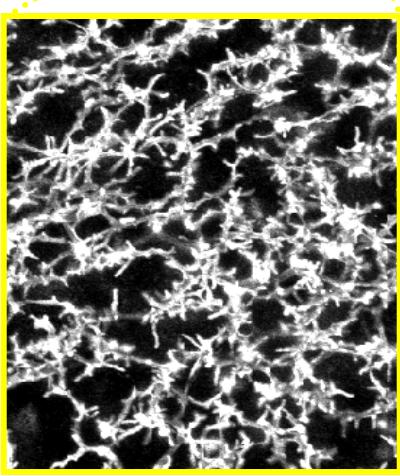
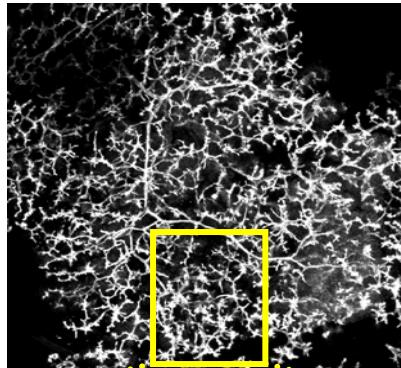
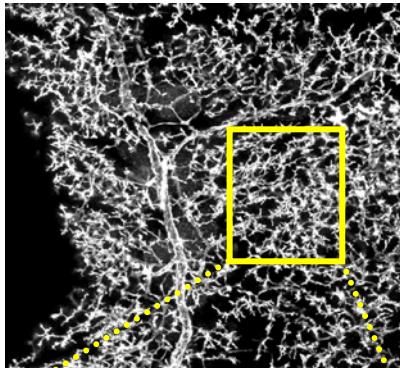
Ngn3 -/-



E18.5 (9 slices)



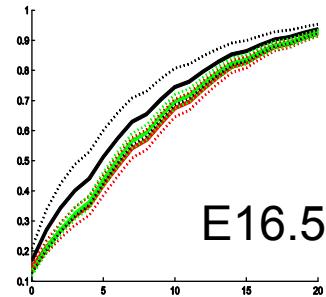
P1 (17 slices)



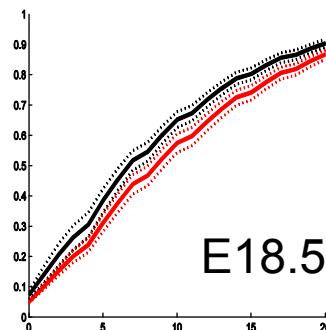
B

Network density

WT
HET
KO

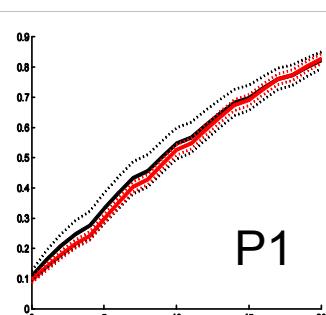


E16.5



E18.5

Fraction of pancreas within distance x from ducts



P1

Distance x (pixels)

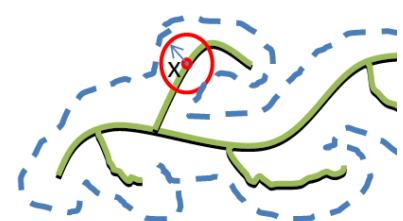


Figure 4s

A

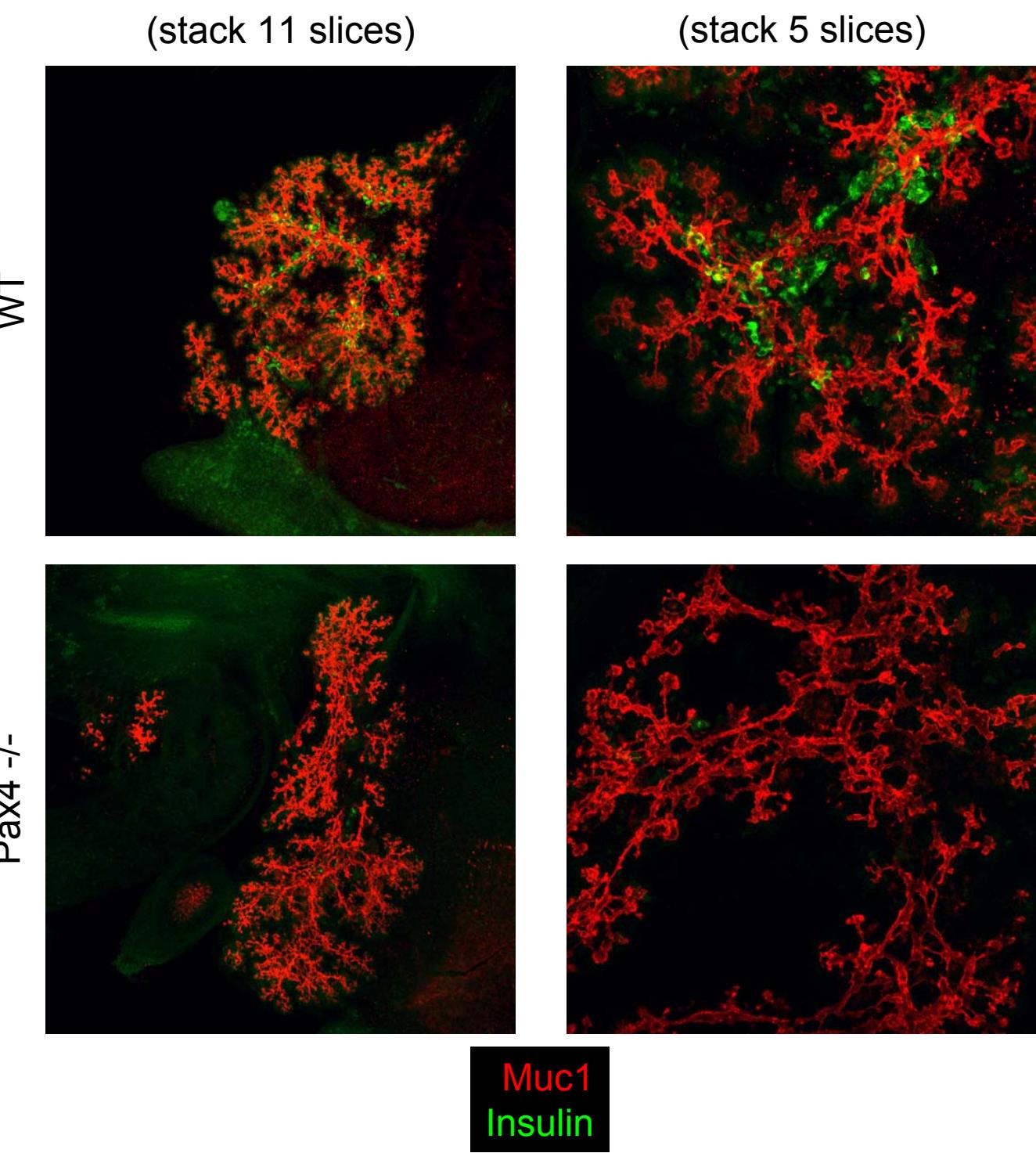


Figure 4s

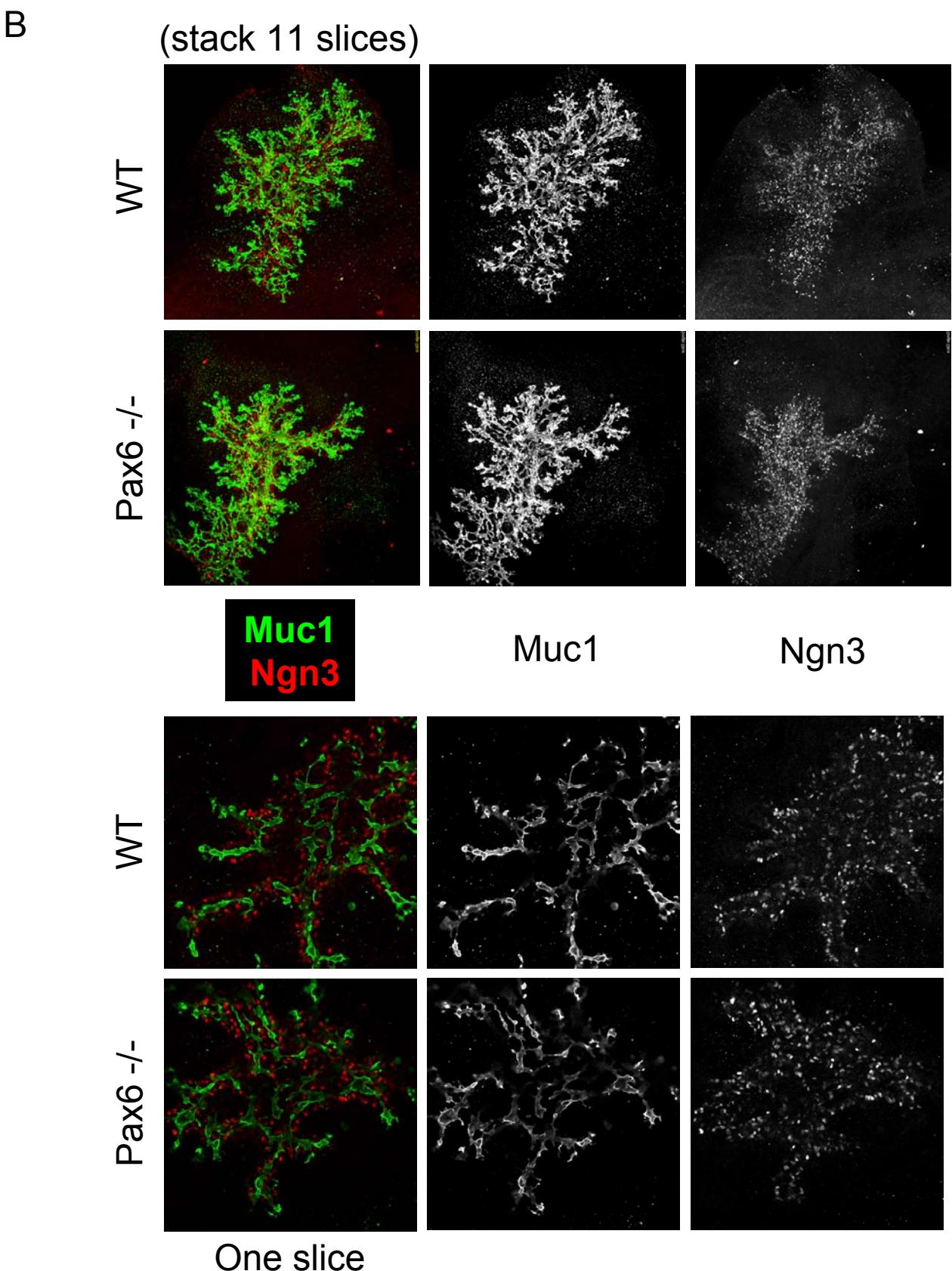


Figure 5s

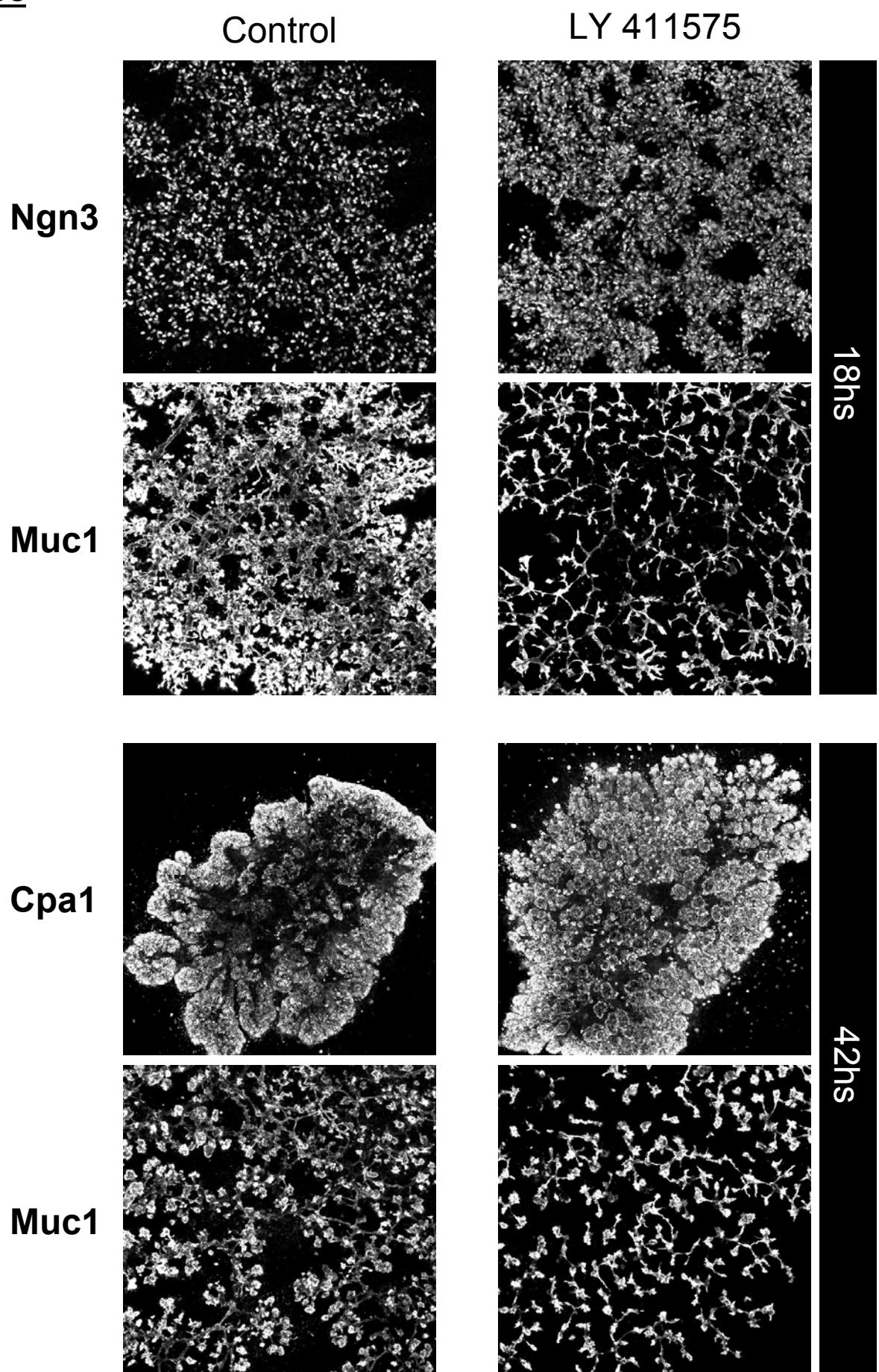


Figure 6s

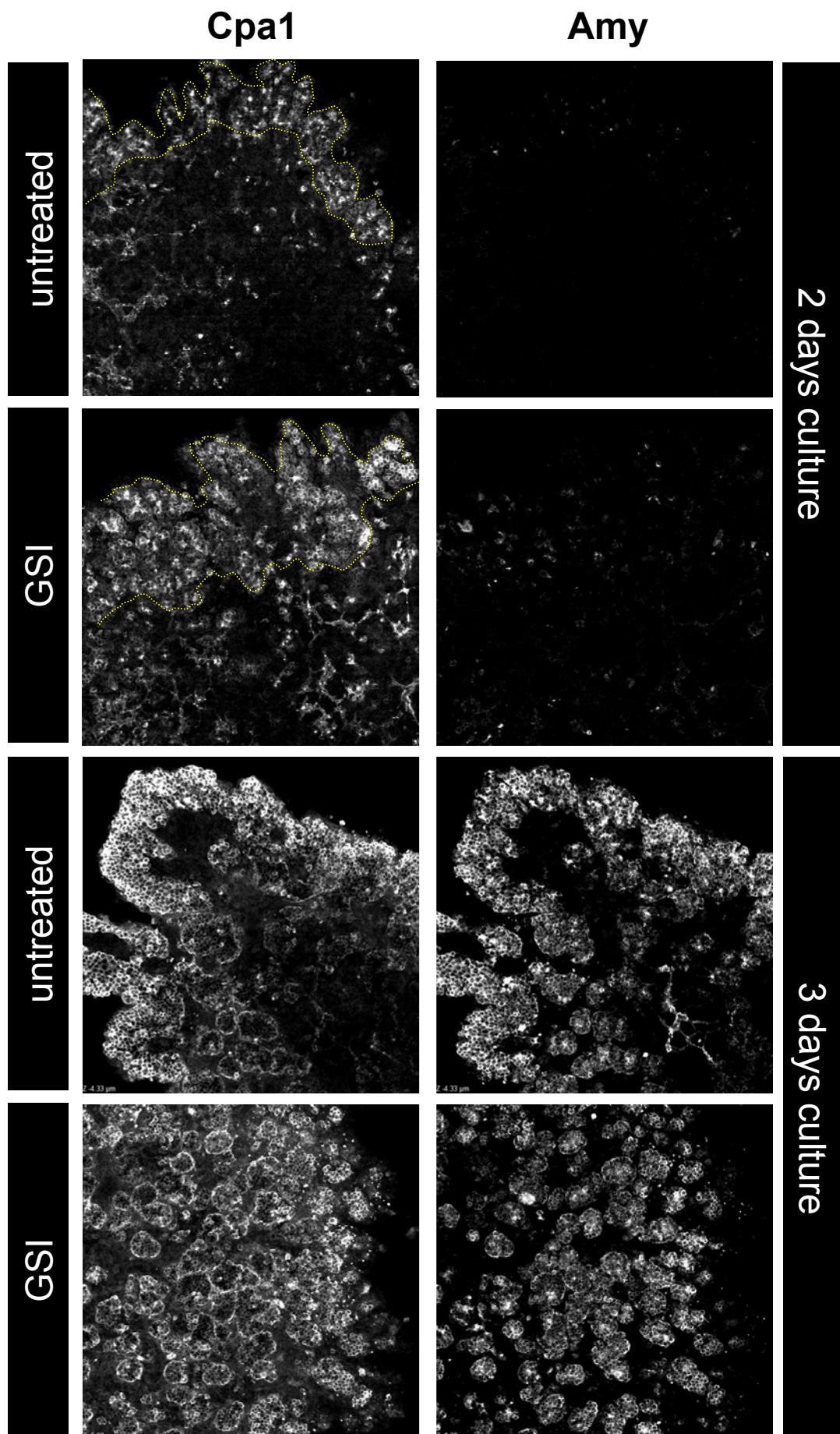
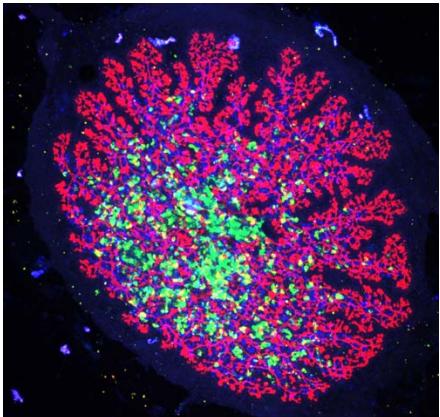


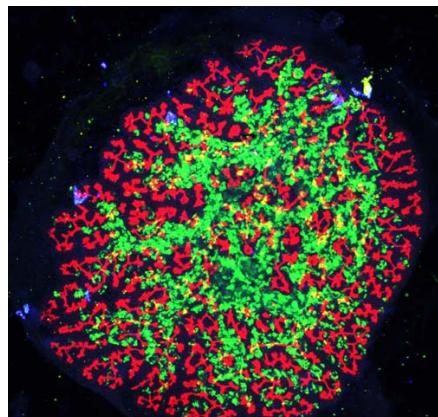
Figure 7s

control

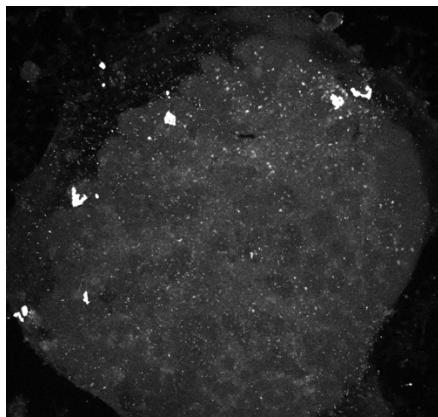
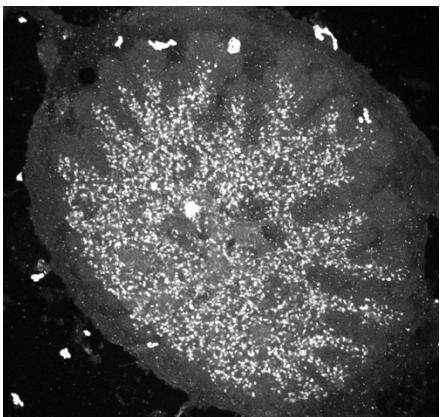
**Muc1
Ngn3
Insulin**



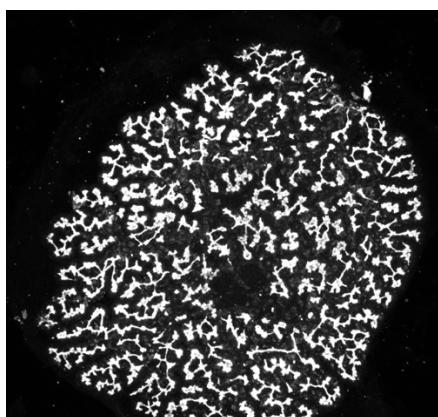
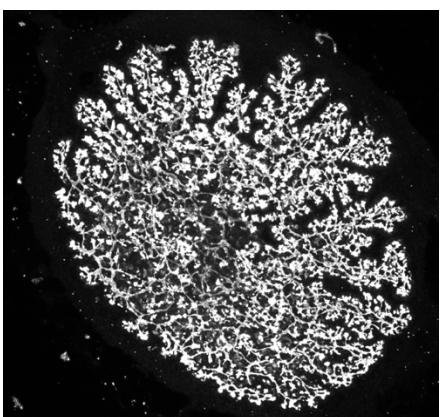
GSI



Ngn3



Muc1



Insulin

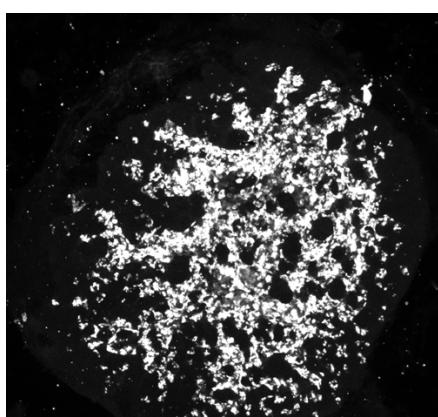
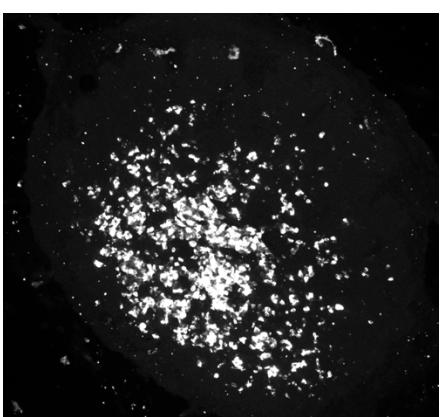
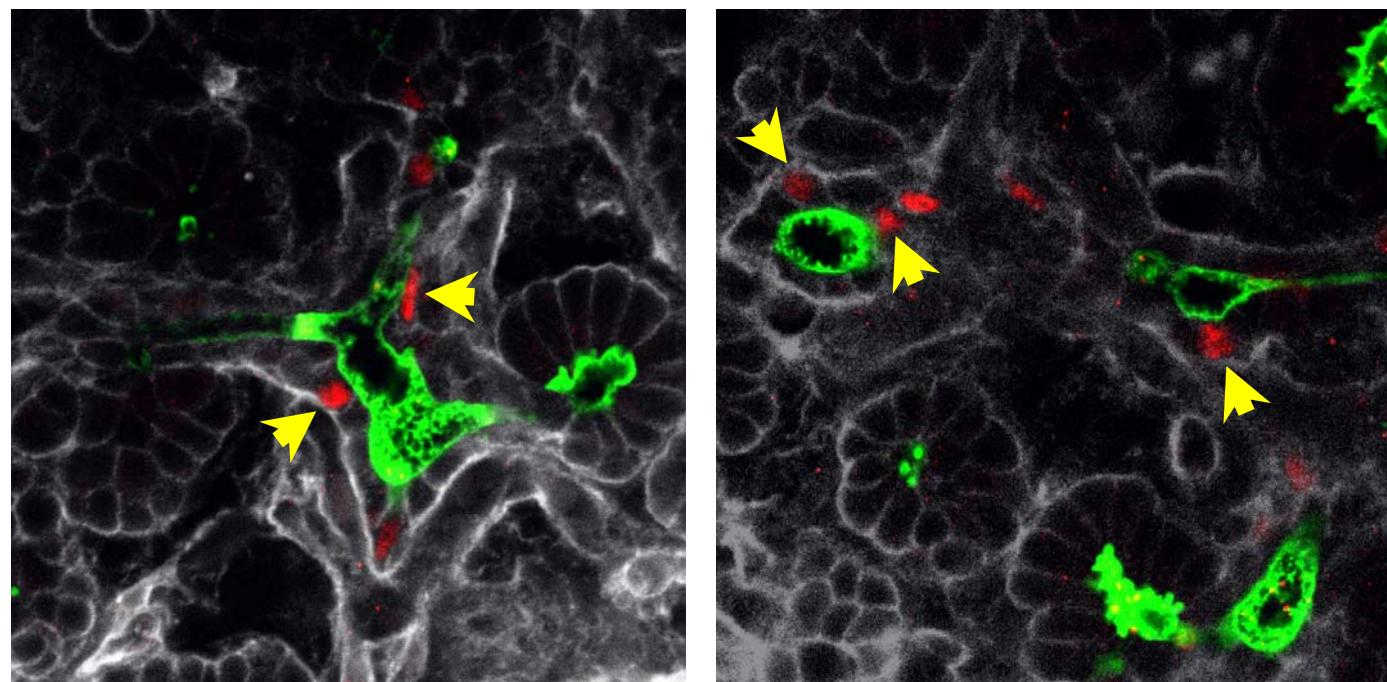


Figure 8s



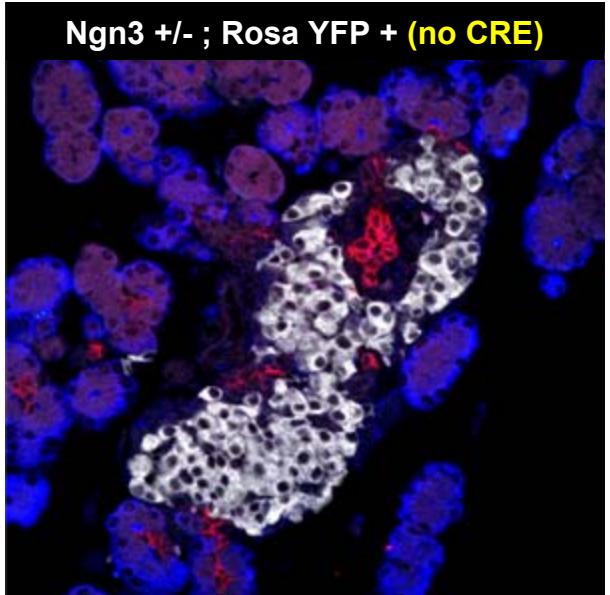
Muc1 Ngn3 E-cad

Figure 9s

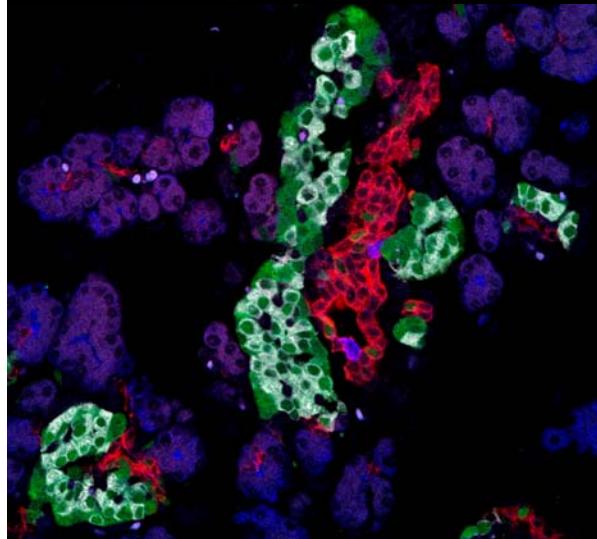
A

Ngn3 +/- ; Rosa YFP + (no CRE)

Dba Yfp
Insulin Amylase



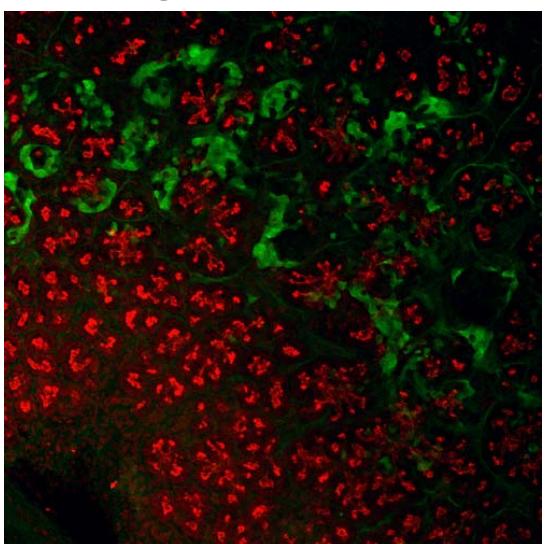
Ngn3 +/+ ; Rosa YFP + ; Ngn3-CRE +



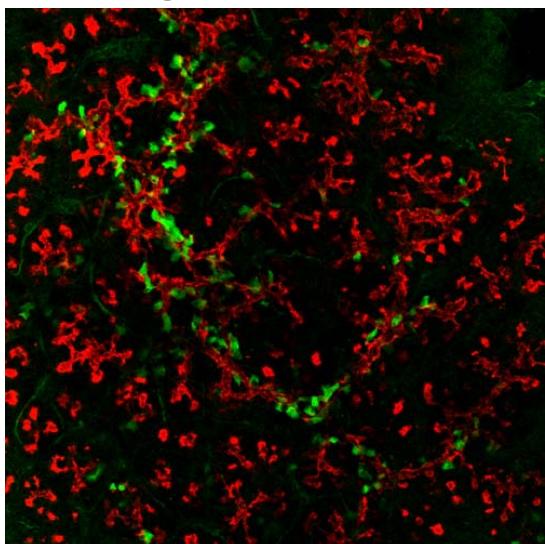
B

Ngn3+/-; YFP+/-

Muc1
Yfp



Ngn3-/-; YFP+/-



Amylase
Yfp
Muc1

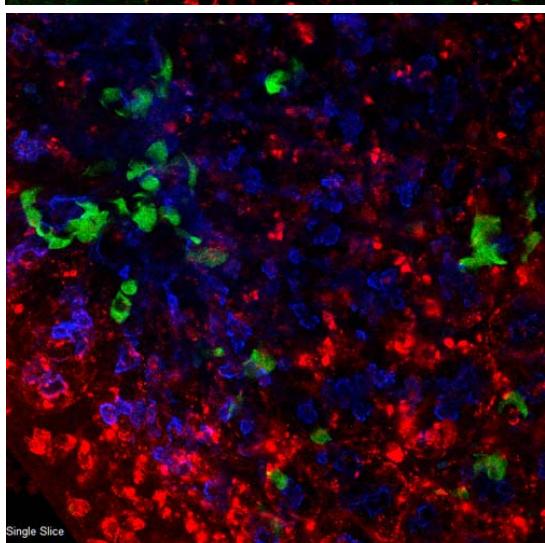
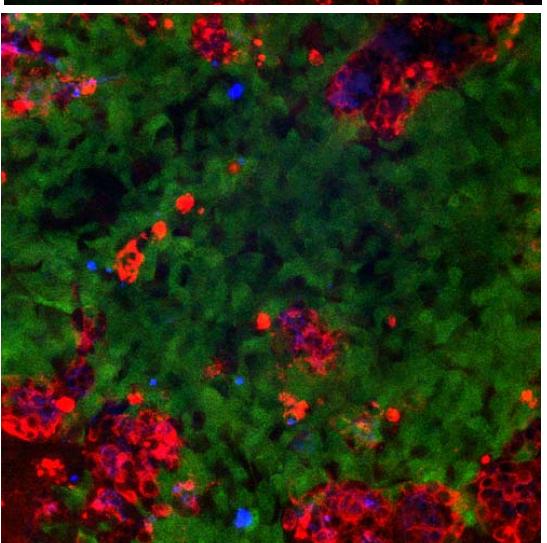
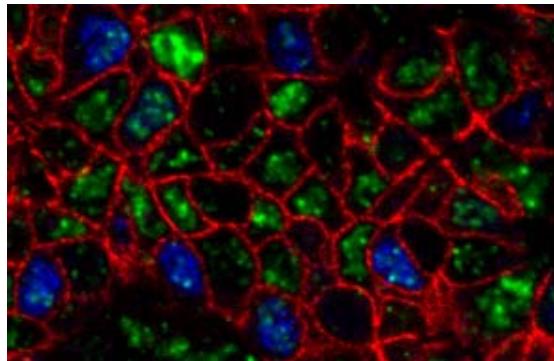


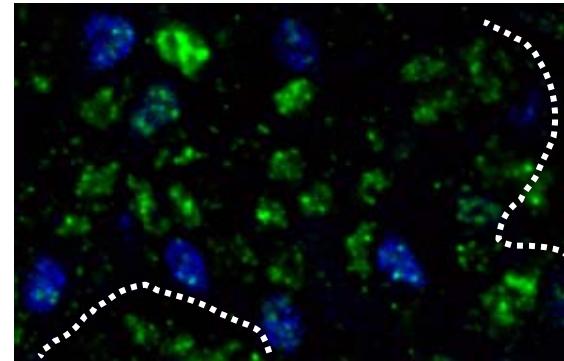
Figure 10s

A

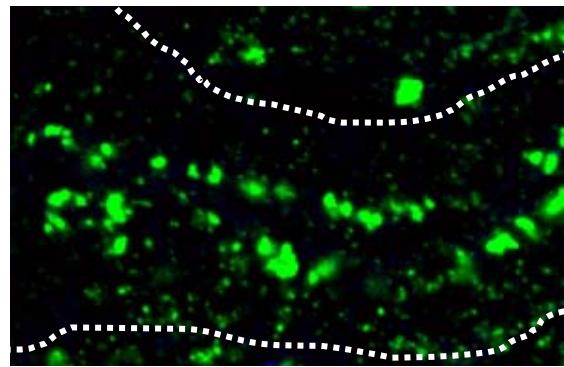
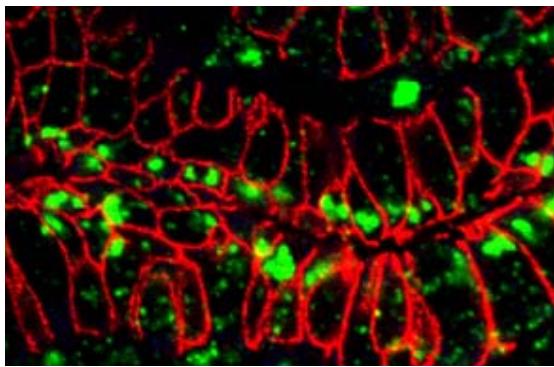
Ngn3^{+/+}



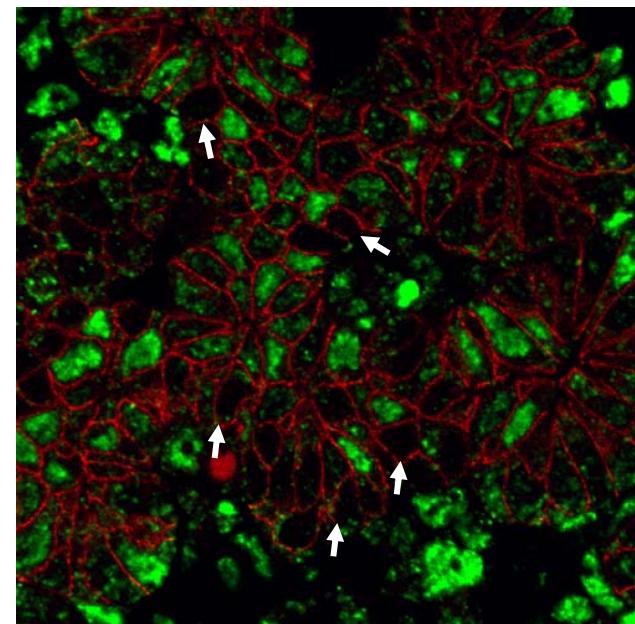
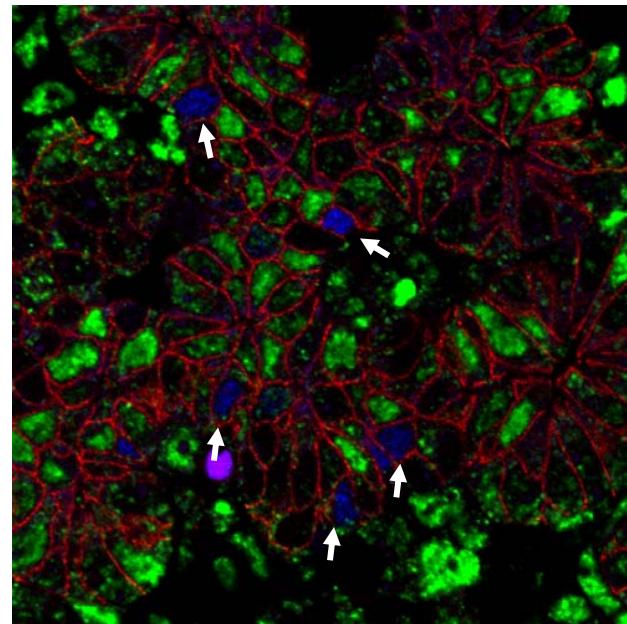
**Nicd
E-Cad
Ngn3**



Ngn3^{-/-}



B



E-cad Hes1 Ngn3

Figure 10s

C

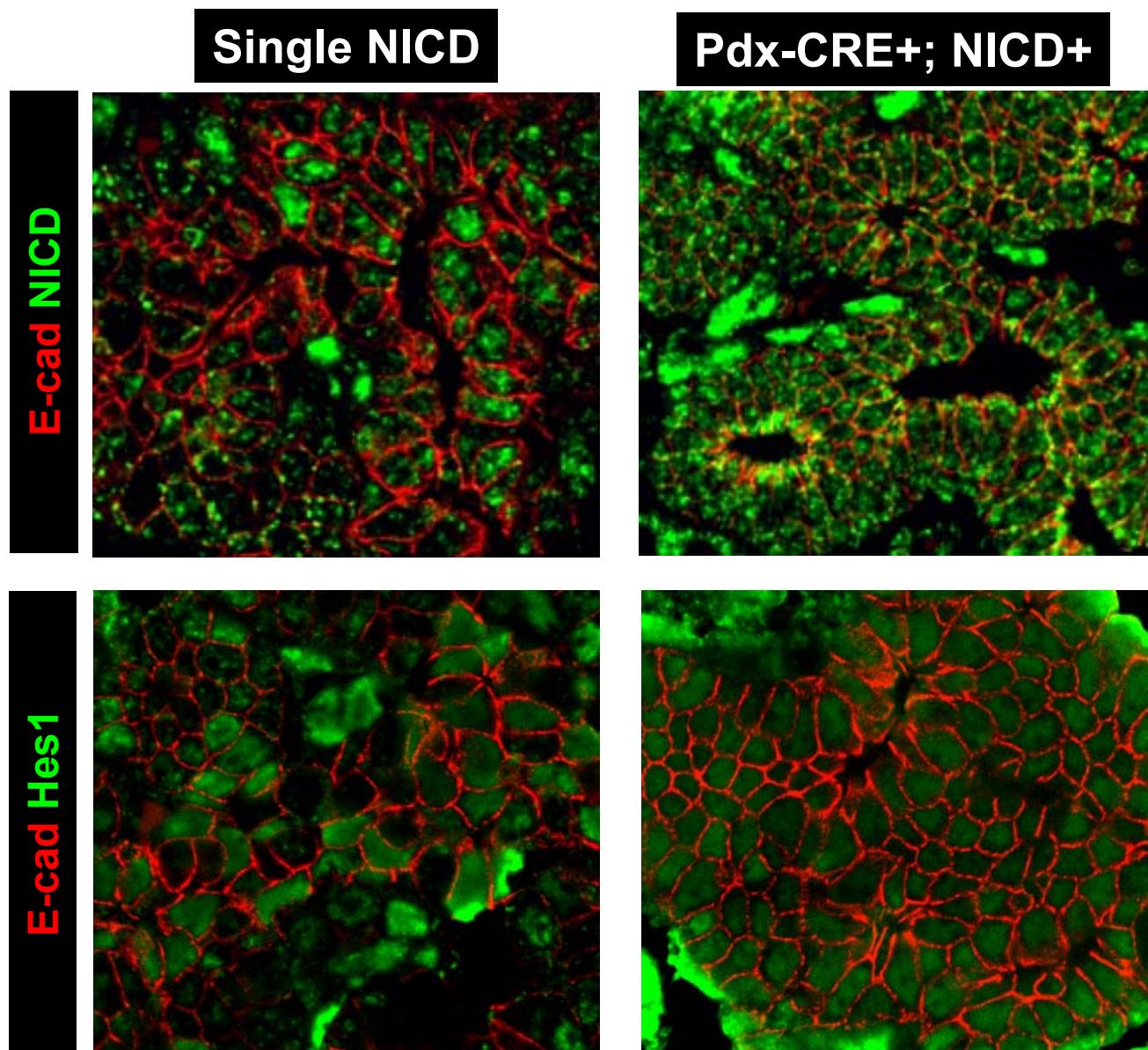
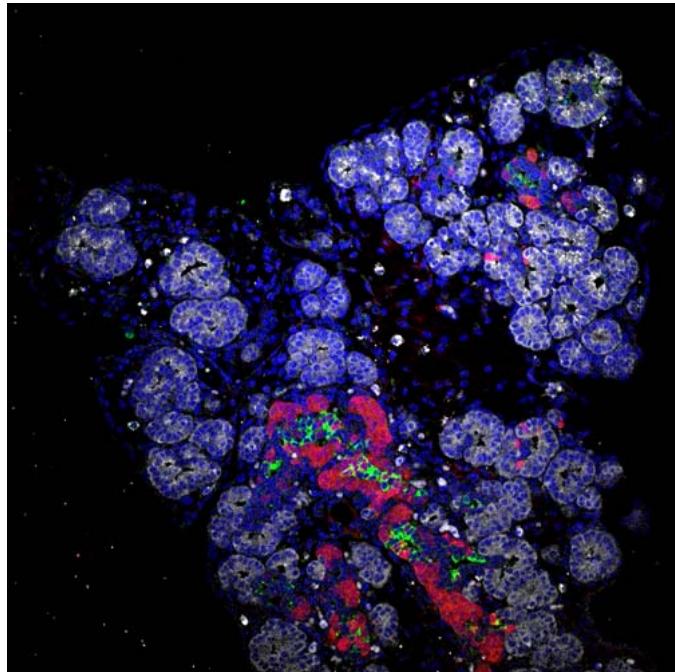
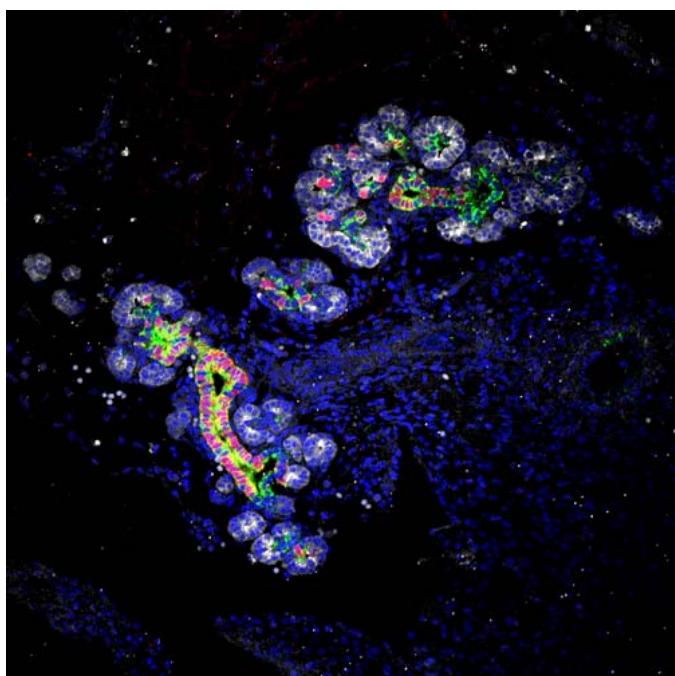
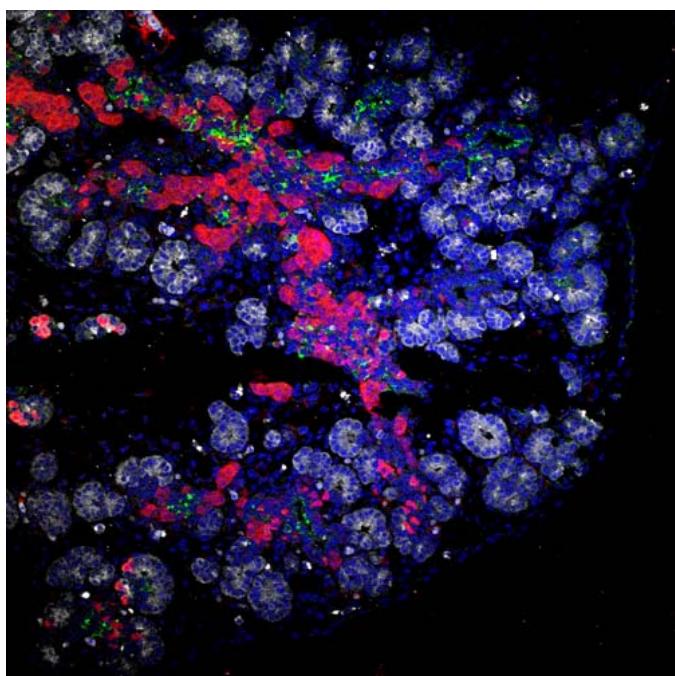
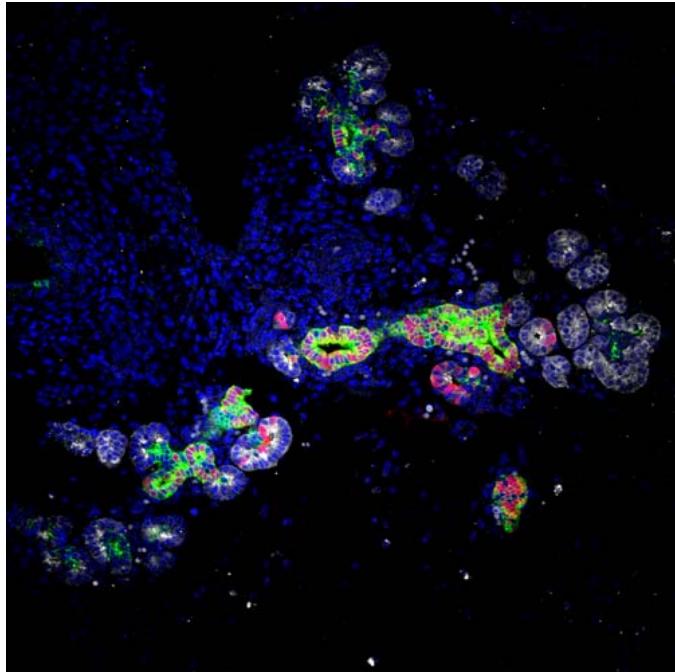


Figure 11s

Ngn3^{+/+}; Ngn3-CRE^{+/−}; YFP^{+/−}



Ngn3^{−/−}; Ngn3-CRE^{+/−}; YFP^{+/−}



Cpa1 **Dba** **Yfp** **Nuclei**