SUPPLEMENTARY DATA

Supplementary Figure S1. Gastrin+ cells originate from beta cells in mice

A. Gastrin+ contain varying amounts of insulin.

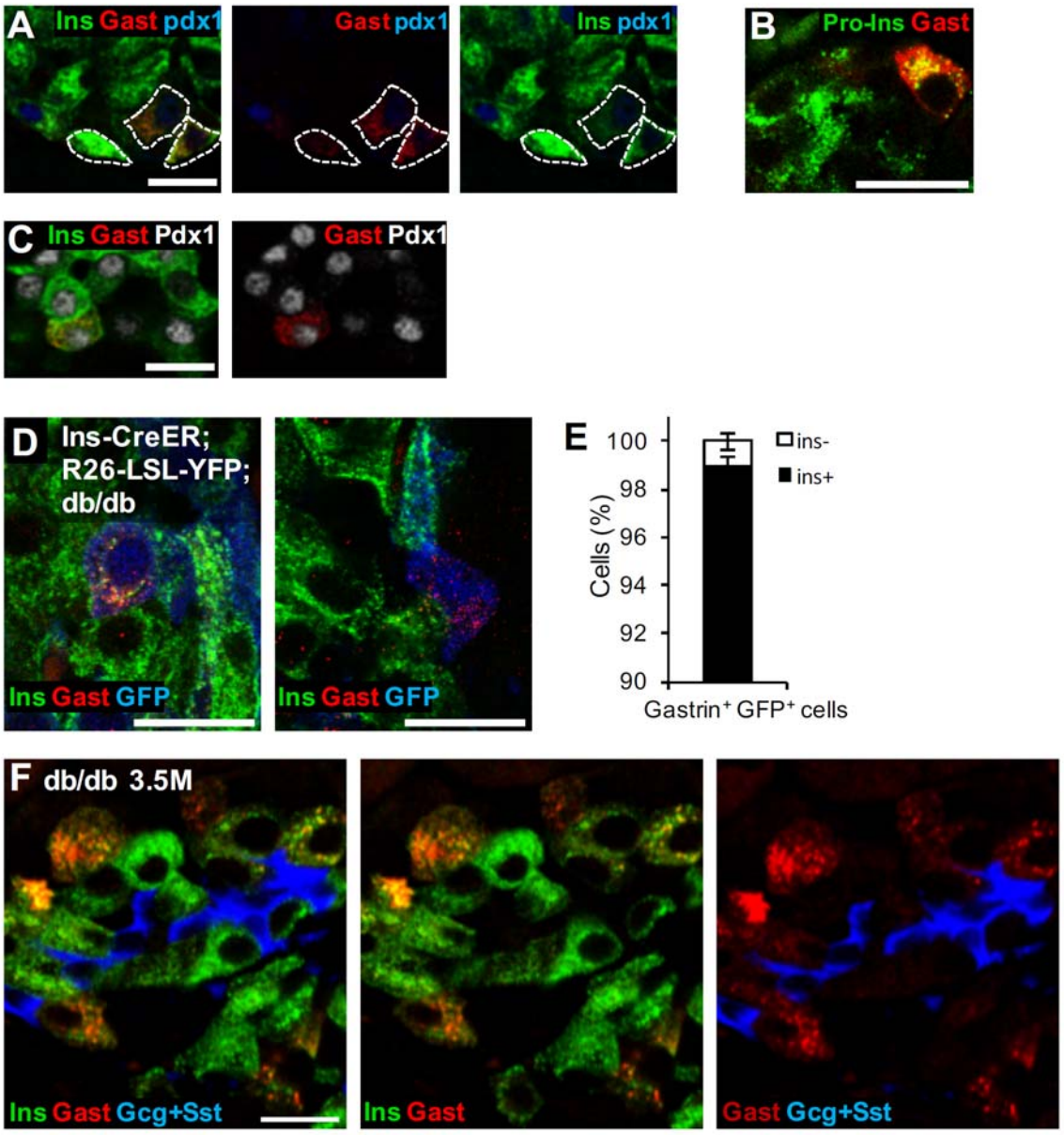
B. Gastrin+ cells contain pro-insulin, indicating co-expression of gastrin and insulin (rather than gastrin expression in cells that retain insulin from past expression).

C. Gastrin+ cells express Pdx1 at levels similar to adjacent beta cells.

D. Examples of lineage-traced beta cells that express gastrin and are either insulin positive (left) or negative (right).

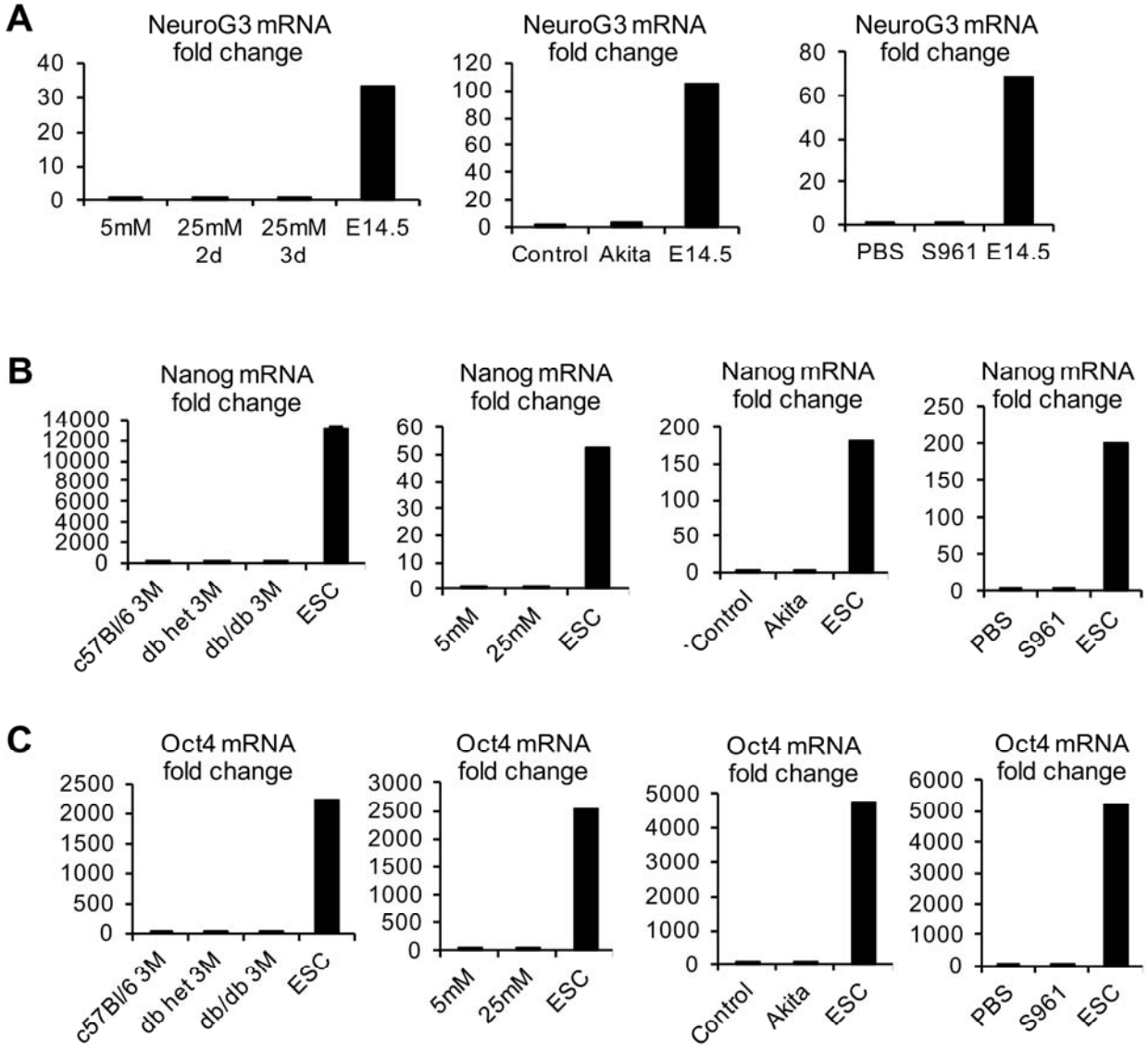
E. The vast majority of GFP labeled gastrin cells are positive for insulin.

F. Co-staining for insulin, gastrin and cocktail of antibodies against glucagon and somatostatin, in a diabetic db/db mouse. Gastrin is not expressed in alpha and delta cells.



SUPPLEMENTARY DATA

Supplementary Figure S2. No evidence for expression of NeuroG3 (**A**) Nanog (**B**) and Oct4 (**C**) mRNA in various models of gastrin expression: high glucose treated islets, diabetic db/db mice, Akita mice and ICR mice treated with insulin receptor blocker.



SUPPLEMENTARY DATA

Supplementary Table S1. Characterization of type 2 diabetes and control patients.

Case	Age/Sex	BMI	T2DM	duration T2DM	Case of death	Last/highest glycemia*	Diabetes-related therapy	Gastrin (%)
A00/169	77/M	23.1	No	/	Bronchopneumonia	124/180		0
A02/170	85/M	27.0	No	/	Cardiovascular accident	100/103		0
A04/241	75/M	26.5	No	/	Unknown	159/159		0
A01/200	75/M	27.1	Yes	2 years	Respiratory failure	167/308	Diet,SU,insulin	3.23
A02/010	82/M	28.4	Yes	12 years	Heart failure	130/230	Diet, metformin, SU, insulin	2.17
A04/409	73/M	23.8	Yes	6 years	Unknown	180/380	SU, insulin	2.44