

Desmoglein-2 is important for islet function and β -cell survival

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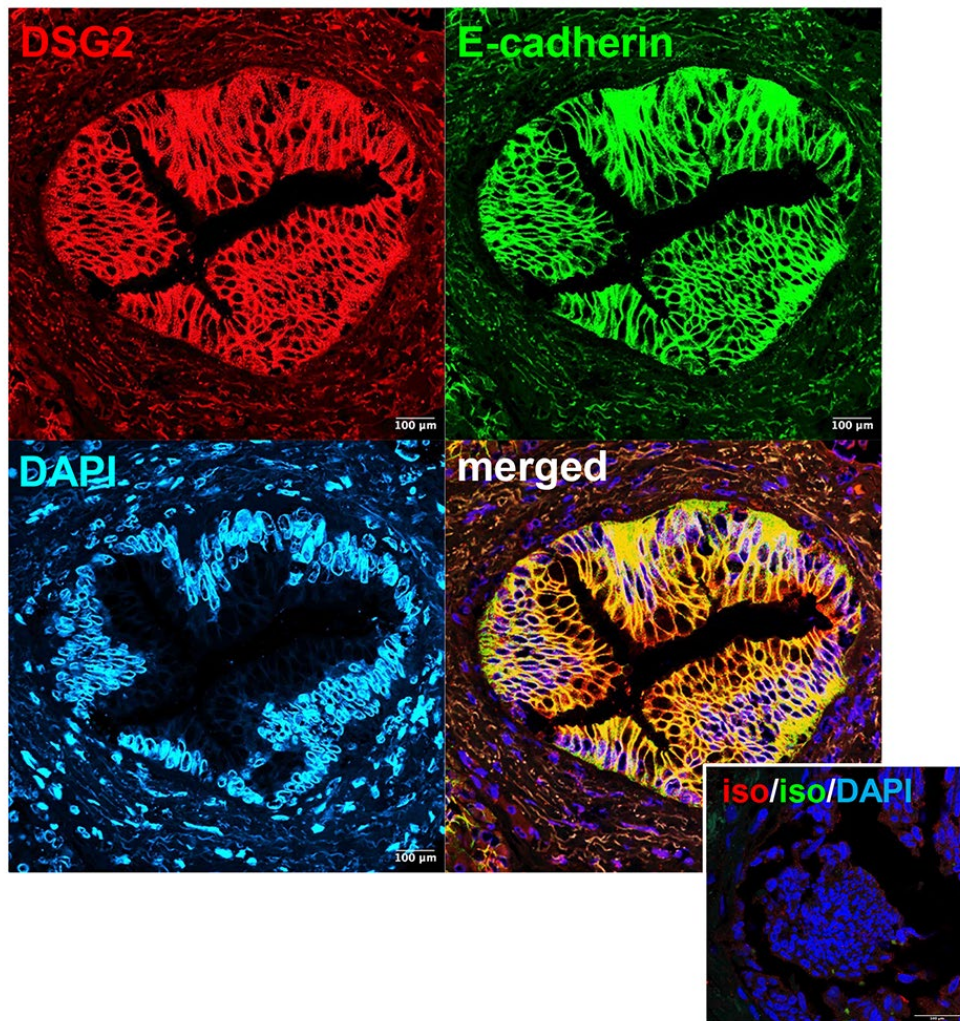
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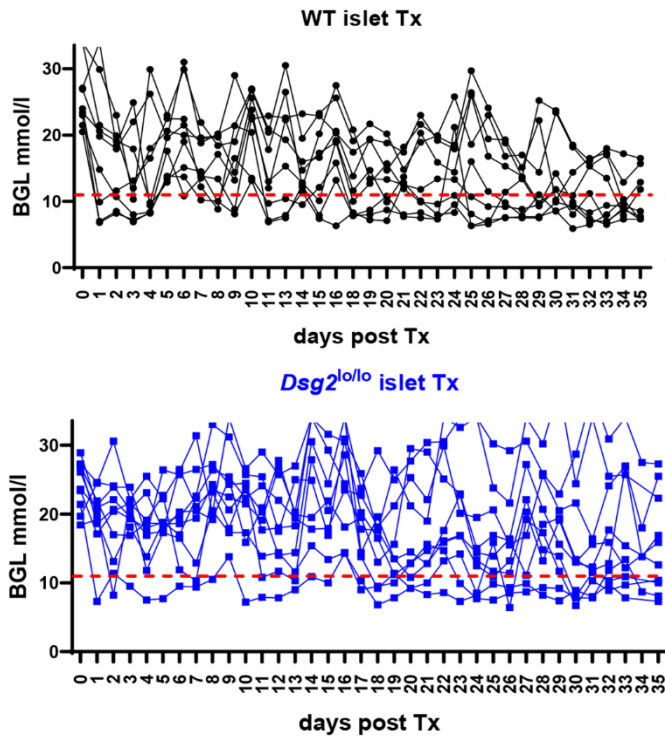
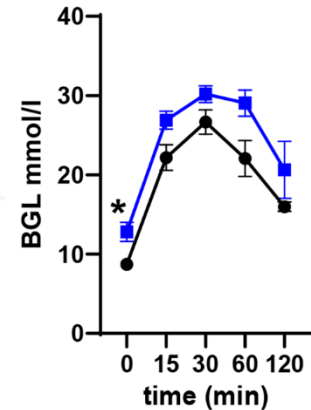
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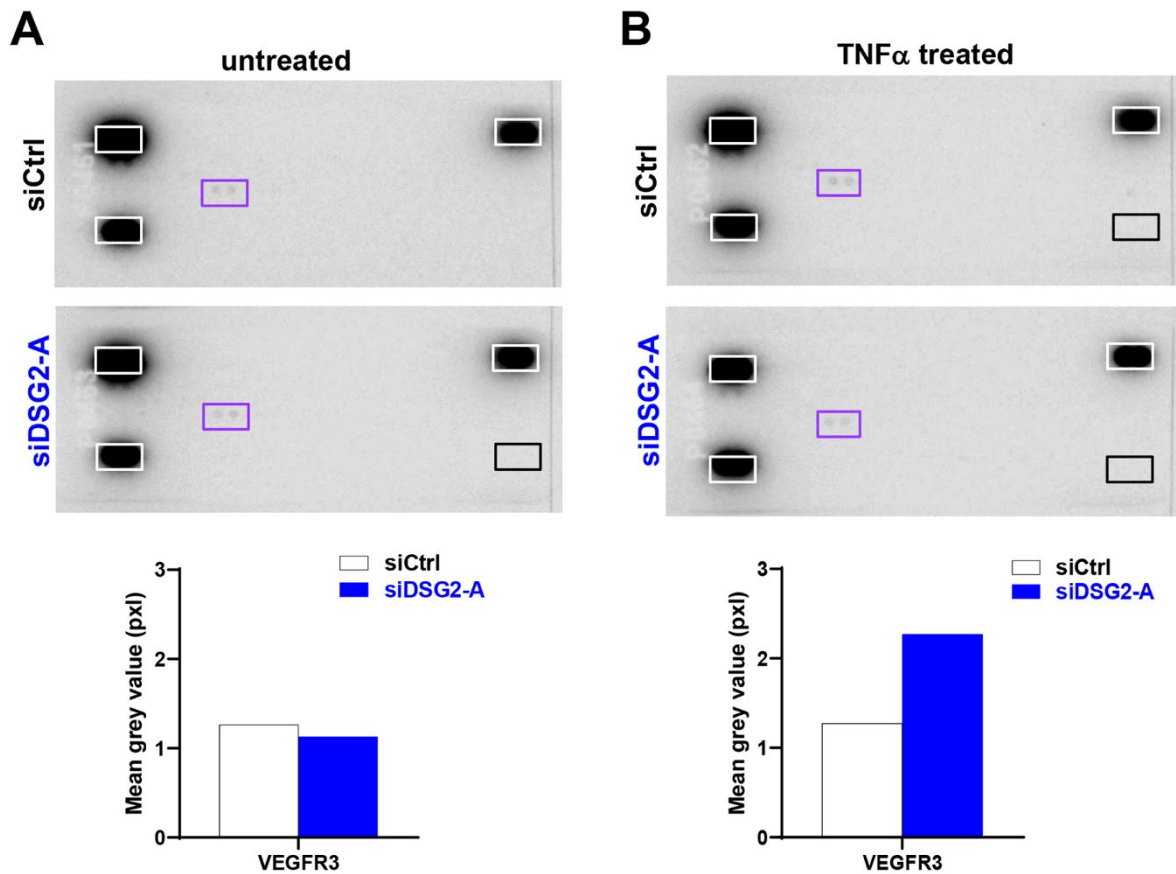
Supplementary Figure S1: DSG2 and E-cadherin expression in healthy human islets

Immunofluorescence confocal microscopy of human pancreas from a healthy body donor stained for DSG2 (red), E-cadherin (green) and nuclei (blue). Insert bottom right is representative of isotype control staining. Scale bar = 100μm.

A**B****IPGTT**

Supplementary Figure S2. Transplantation of islets from WT or *Dsg2^{lo/lo}* mice into diabetic WT mice.

Diabetic C57Bl6/N control (WT, n=9) mice were transplanted with marginal islet mass of 200 islets harvested from WT (n=5) or *Dsg2^{lo/lo}* (n=4) mice under the kidney capsule. **A**, BGLs in individual mice were recorded daily for up to 35 days post-transplantation. Black lines represent a single mouse wherein WT islets were transplanted into diabetic WT mice. Blue lines represent a single mouse wherein *Dsg2^{lo/lo}* islets were transplanted into diabetic WT mice. Red dotted line along the x-axis at 11.1 mmol/L indicates euglycaemic glucose levels. **B**, From **A**, cured mice underwent an IPGTT with 2 mg/kg of glucose administered IP and BGLs determined at 0, 15, 30, 60 and 120 min post injection. Results are mean \pm SEM for WT (n=5) and *Dsg2^{lo/lo}* (n=4), *p<0.05 vs WT.



Supplementary Figure S3. Phospho-receptor tyrosine kinase (Phospho-RTK) expression of Beta-TC-6 cells without and with *Dsg2* knockdown.

A Phospho-RTK proteome array of Beta-TC-6 cell lysates without (siCtrl, black) and with *Dsg2* knockdown (siDSG2-A, blue), n=1 experiment. For detectable proteins, mean grey value of duplicate dots was calculated and graphed. White box = positive control, black box = negative control, purple box = VEGFR3. **B** Phospho-RTK proteome array of Beta-TC-6 cell lysates without (siCtrl, black) and with *Dsg2* knockdown (siDSG2-A, blue) following TNF α treatment (100 ng/ml, 24 h), n=1 experiment. For detectable proteins, mean grey value of duplicate dots was calculated and graphed. White box = positive control, black box = negative control, purple box = VEGFR3.