

ONLINE SUPPLEMENTAL MATERIAL

GC-globulin/vitamin D-binding protein is required for pancreatic α cell adaptation to metabolic stress

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Supplementary Table 1: Human islet donor characteristics.

Record	Disease	Age	Sex	BMI	HbA1c
R131	T2D	52	Male	26	6.8
R312	T2D	52	Female	27.5	9.3
R262	T2D	54	Female	22.41	5.6
R276	T2D	54	Female	24.4	7.2
R063	T2D	57	Female	22.81	6.1
R213	T2D	57	Male	23.14	6.7
R347	T2D	57	Male	27.9	6.3
R192	T2D	63	Male	26.87	N/A
R222	T2D	62	Male	25.95	10
R146	ND	52	Male	25.26	5.5
R238	ND	52	Male	26.05	5.7
R158	ND	53	Male	22.5	5.5
R107	ND	56	Female	27.5	9.3
R303	ND	56	Female	24.1	N/A
R253	ND	57	Male	25.6	5
R278	ND	57	Male	27.65	5.7
R021	ND	58	Male	28.34	N/A
R117	ND	64	Male	25.1	5.8
R179	ND	61	Male	25.1	5.7

Supplementary Movie 1: Ca^{2+} spiking activity in Fura2-loaded high fat diet $\text{GC}^{+/+}$ islets at 0.5 mM glucose. Acquisition rate 2 Hz, 10 x 0.3 NA objective, epinephrine applied at frame 200 (out of 400 frames).

Supplementary Movie 2: Ca^{2+} spiking activity in Fura2-loaded high fat diet $\text{GC}^{-/-}$ islets at 0.5 mM glucose. Acquisition rate 2 Hz, 10 x 0.3 NA objective, epinephrine applied at frame 200 (out of 400 frames).

Supplementary Movie 3: Ca^{2+} spiking activity in Fluo8-loaded high fat diet $\text{GC}^{+/+}$ islets at 0.5 mM glucose. Acquisition rate 2 Hz, 20 x 0.75 NA objective, epinephrine applied at frame 200 (out of 400 frames).

Supplementary Movie 4: Ca^{2+} spiking activity in Fluo8-loaded high fat diet $\text{GC}^{-/-}$ islets at 0.5 mM glucose. Acquisition rate 2 Hz, 20 x 0.75 NA objective, epinephrine applied at frame 200 (out of 400 frames).