

Supplementary Table 7: Differential mRNA expression ($q < 0.05$) of candidate genes for type 2 diabetes (T2D) related traits in human pancreatic islets exposed to palmitate versus control. DNA methylation data is displayed if the absolute difference in DNA methylation $\geq 3\%$ and $P < 0.05$.

T2D trait candidate gene	Trait*	mRNA expression							DNA methylation (%)					
		Probe ID	Chr	Control mean \pm sd	Palmitate mean \pm sd	Diff. palmitate -control	P-value	q-value	Probe ID	Region	Control mean \pm sd	Palmitate mean \pm sd	Diff. palmitate -control	P-value
ATP11A	1	7970162	13	184.9 \pm 37.8	153.7 \pm 35.7	31.2	0.0017	0.033	cg02738374	Body; Island	80.0 \pm 3.7	83.4 \pm 2.7	3.4	0.001
									cg19293163	Body; N Shore	63.9 \pm 7.4	68.4 \pm 5.6	4.5	0.005
FADS1	2, 3	7948612	11	396.9 \pm 102.4	588.2 \pm 187.9	-191.3	0.00024	0.013						
FOXA2	3	8065344	20	320.9 \pm 47.1	353.7 \pm 54.1	-32.8	0.0024	0.041						
GCKR	2, 3, 4, 5, 6	8040960	2	80.8 \pm 32.2	104.2 \pm 65.0	-23.4	0.0012	0.027	cg20229788	TSS1500; S Shore	24.3 \pm 6.3	27.4 \pm 5.9	3.1	0.013
GLIS3	2, 3	8159900	9	441.4 \pm 66.2	394.9 \pm 47.8	46.5	0.0012	0.027	cg14641122	Body; Open sea	33.4 \pm 8.2	36.7 \pm 9.3	3.2	0.010
									cg14269813	Body; Open sea	58.2 \pm 11.1	61.6 \pm 11.3	3.4	0.016
GRB14	5	8056327	2	97.5 \pm 15.5	81.5 \pm 24.1	16.0	0.0024	0.041						
HK1	1	7928019	10	169.7 \pm 43.7	150.4 \pm 43.5	19.3	0.0024	0.041	cg04031454	TSS1500; Open sea	65.9 \pm 4.4	69.1 \pm 4.2	3.2	0.004
PCSK1	3	8113234	5	4,238.9 \pm 1,705.4	5,381.2 \pm 1,765.8	-1,142.3	0.0002	0.013						
PROX1	2, 3	7909681	1	153.2 \pm 26.4	131.9 \pm 26.7	21.3	0.00024	0.013						
SEZ6L	7	8072088	22	344.9 \pm 136.9	407.1 \pm 174.6	-62.2	0.0017	0.033						
SLC30A8	2, 3, 1, 8	8148003	8	5,399.1 \pm 1,886.6	4,762.5 \pm 1,777.0	636.6	0.0034	0.049						
TCF7L2	2, 3, 5, 1, 8, 9	7930537	10	215.1 \pm 30.9	180.2 \pm 28.9	34.9	0.00024	0.013	cg26775558	Body; Open sea	56.5 \pm 10.0	60.4 \pm 9.2	3.9	0.006
TMPRSS6	1	8075865	22	52.4 \pm 5.6	59.0 \pm 9.0	-6.6	0.00073	0.020						

*1) Glycated hemoglobin levels, 2) Fasting glucose-related traits, 3) Fasting glucose-related traits (interaction with BMI), 4) Fasting insulin-related traits, 5) Fasting insulin-related traits (interaction with BMI), 6) Fasting plasma glucose, 7) Insulin resistance/response, 8) Type 2 diabetes and other traits, 9) Two-hour glucose challenge