SUPPLEMENTARY DATA

Supplementary Table 1. Primers for gene expression

Gene name	Forward primer	Reverse primer
β-actin	AACACCCCAGCCATGTACGTAG	GAACCGCTCATTGCCGATAGT
Pklr	GTGGAGCACGGTGGTATCTT	CTTCACGCCTTCATGGTTCT
Acaca	TACAACGCAGGCATCAGAAG	TGTGCTGCAGGAAGATTGAC
c-Myc	CGAGCTGAAGCGTAGCTTTT	CTCGCCGTTTCCTCAGTAAG
Mlxipl	GGCTGTTGTCTTGGAGGGTA	AGAAGAGCTGTTCGCACCAT
Ccnd1	GCGTACCCTGACACCAATCT	GGCTCCAGAGACAAGAAACG
Ccnd2	TTACCTGGACCGTTTCTTGG	TGCTCAATGAAGTCGTGAGG
Ccne1	GACAGCTAGCGCGGTGTAG	GTTGCTGTGGTCCTTCGAGT
Ccna2	GAATGAGACCCTGCATTTGG	GGTGCTCCATTCTCAGAACC
Cdk1	CCGAAATCTGCCAGTTTGAT	CTGGCCAGTTCATGGATTCT
Cdk2	CATTCCTCTTCCCCTCATCA	GTACGGACAGGGACTCCAAA
Cdk4	TATGAACCCGTGGCTGAAAT	CATCAGCCGTACAACATTGG
Cdk6	CAACGTGGTCAGGTTGTTTG	TCGGAGAAGCTGAAACATCA
p21	CTTGTCGCTGTCTTGCACTC	AGGCAGAAGATGGGGAAGAG
p27	TTGCGCAATTAGGTTTTTCC	AAAGGAATTCAAGCCCTTCC
p57	CGAGAATCAGGAGCTGAAGG	CAGGAGCCACGTTAGGAGAG
p15	TCACCAGACCTGTGCATGAT	AGATAGGGCTGGGGAGAAAA
p18	GTTGAGGGCTTCAGAACTGC	CAGTGGTGACTTGAGGCAGA
p19	CACCGGTAGCCACTATGCTT	TGCTGGACTTCCAAACATCA
ACTB	GGCATCCTCACCCTGAAGTA	GGGGTGTTGAAGGTCTCAAA
MLXIPL	AGAGACAAGATCCGCCTGAA	ACTTGTGGTATTCCCGCATC

SUPPLEMENTARY DATA

Supplementary Table 2. Expression of cell cycle regulatory genes in isolated rat islet cells. Dispersed rat islet cells were transduced with an adenovirus expressing either GFP or ChREBP and cultured in 20 mM glucose under conditions identical to those depicted in Figure 6. Values for mRNA are mean of ΔΔCT normalized to beta actin from four independent experiments, with cell cycle accelerators listed above cell cycle brakes, separated by a double line. For clarity, values were multiplied by 100, except for ChREBP, CcnD2, Cdk4, and p21. *, $p < 0.05$.

	20 mM Ad-GFP	20 mM Ad-ChREBP
ChREBP	0.03 ± .002	0.89 ± .02 *
Ccna2	0.29 ± .01	0.47 ± .07 *
Ccne1	0.052 ± .004	0.013 ± .002*
Ccnd2	0.31 ± .02	0.33 ± .02
Cdk1	0.15 ± .01	0.20 ± .03 *
Cdk2	0.5 ± .03	0.07 ± .03*
Cdk4	0.17 ± .02	0.14 ± .01
Cdk6	0.79 ± .1	0.11 ± .02*
c-Myc	0.25 ± .01	0.30 ± .03*
p21	0.026 ± .007	0.0087 ± .0006
p27	0.0017 ± .0004	0.0036 ± .0006*
p57	0.082 ± .006	0.061 ± .005*
p15	0.45 ± .05	0.32 ± .02
p18	0.43 ± .03	0.32 ± .01*
p19	0.50 ± .04	0.33 ± .04*

SUPPLEMENTARY DATA

Supplementary Figure 1. Immunostaining of human islets after depletion or overexpression of ChREBP. (A) Dispersed human islets cells treated with Accell siRNA were cultured on coverslips in either 5.5 mM or 20 mM glucose for 72 h. BrdU was added for the last 48 h. Cells were fixed and stained with anti-insulin (green) and BrdU (red) antibodies, and nuclei were stained with DAPI (blue) (B). Dispersed human islet cells were transduced with adenovirus expressing ChREBP or GFP and were treated exactly as described for isolated rat islet cells in Figure 6, except BrdU was added 48 h prior to the end of the experiment. Cells were counted in a blinded fashion and the results are presented in Figure 8.