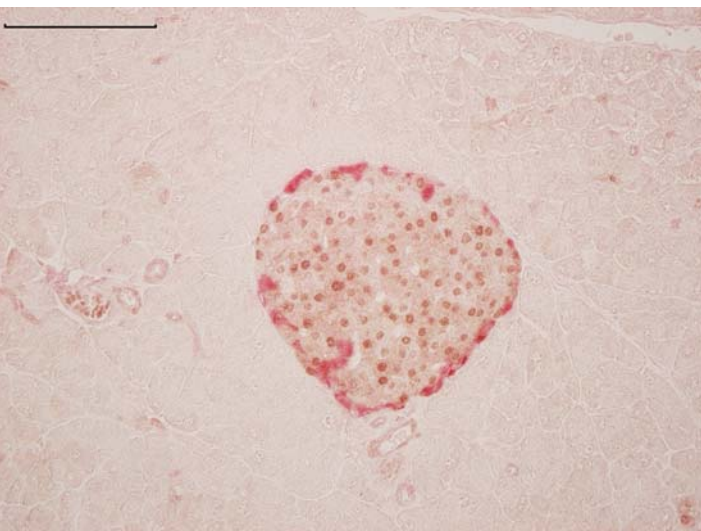


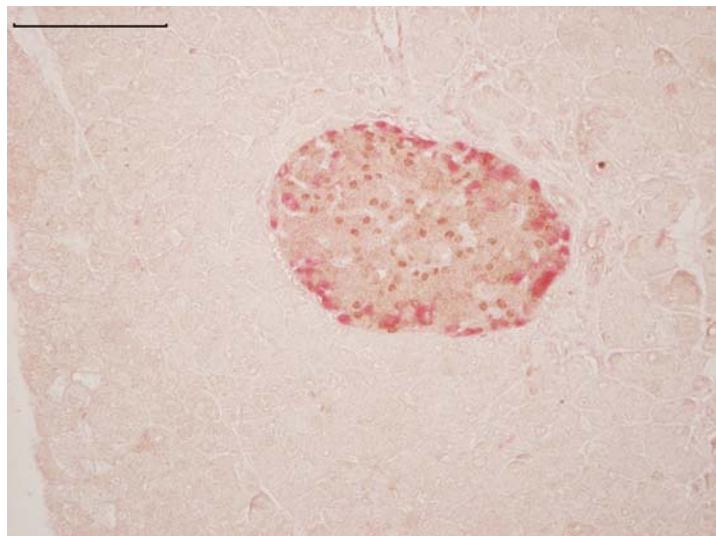
Supplementary Figure 1

Immunostaining of Ipf1 in islets. Sections were double-stained with anti-Ipf1 antibody and a cocktail of anti-glucagon, anti-somatostatin, and anti-pancreatic polypeptide antibodies. Representative islets captured on a computer are shown. Ipf1 positive-cells are stained brown, and non-beta-cells are stained red. Bars: 100 μ m.

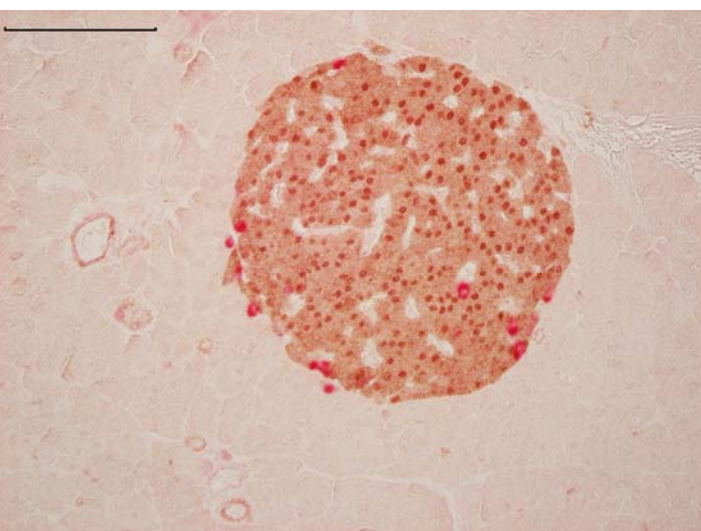
Wild-type mice on the standard-chow diet



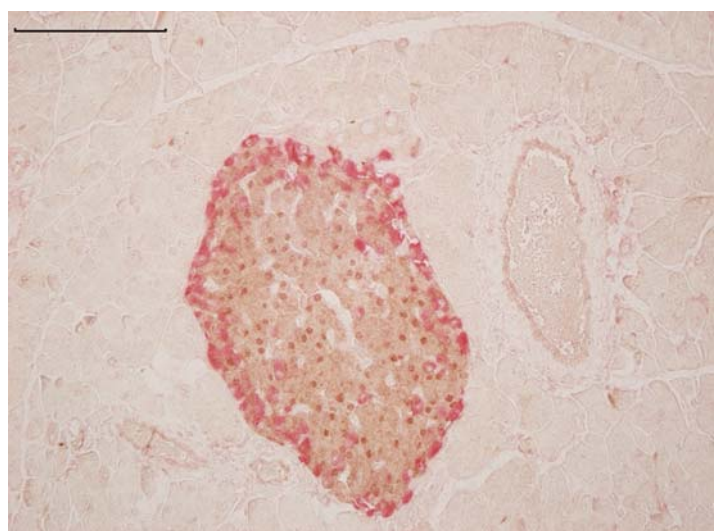
Gck^{+/-} mice on the standard-chow diet



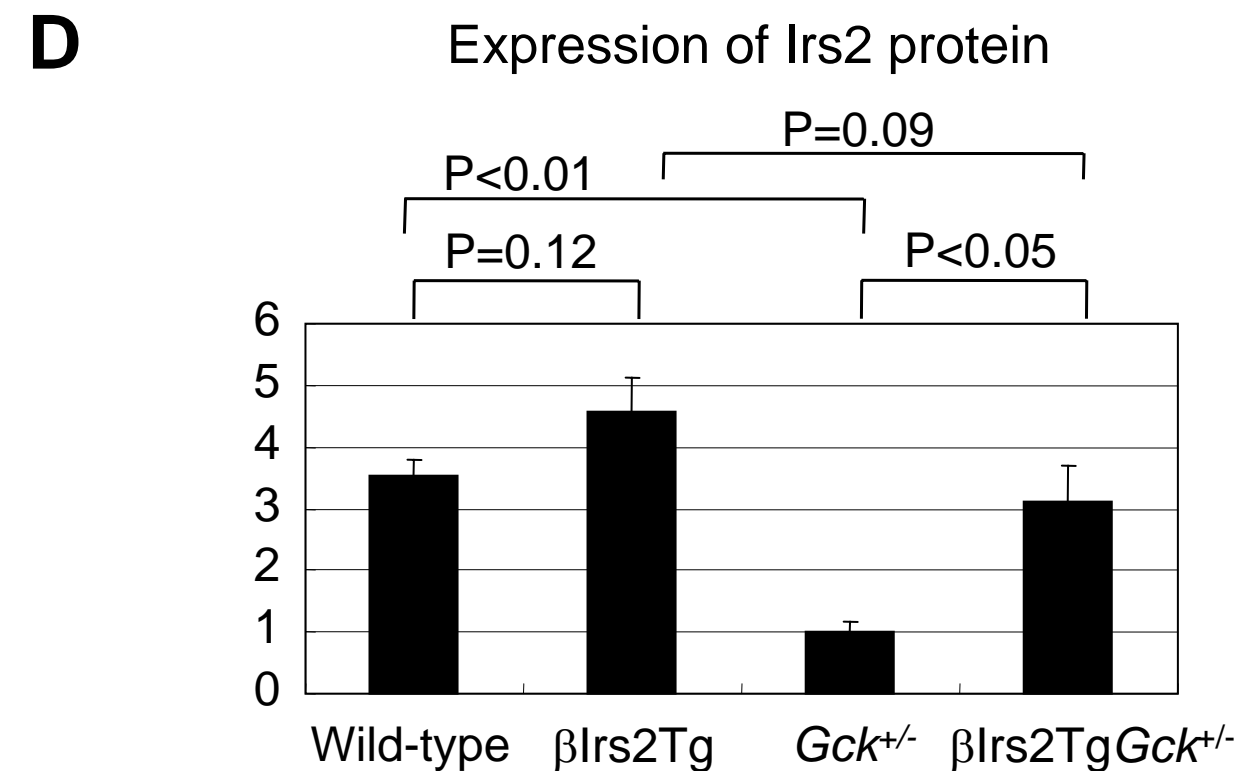
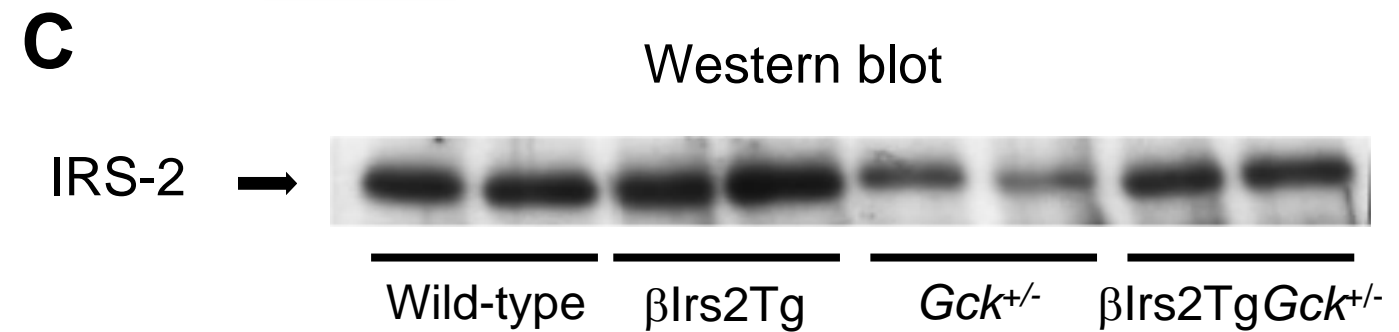
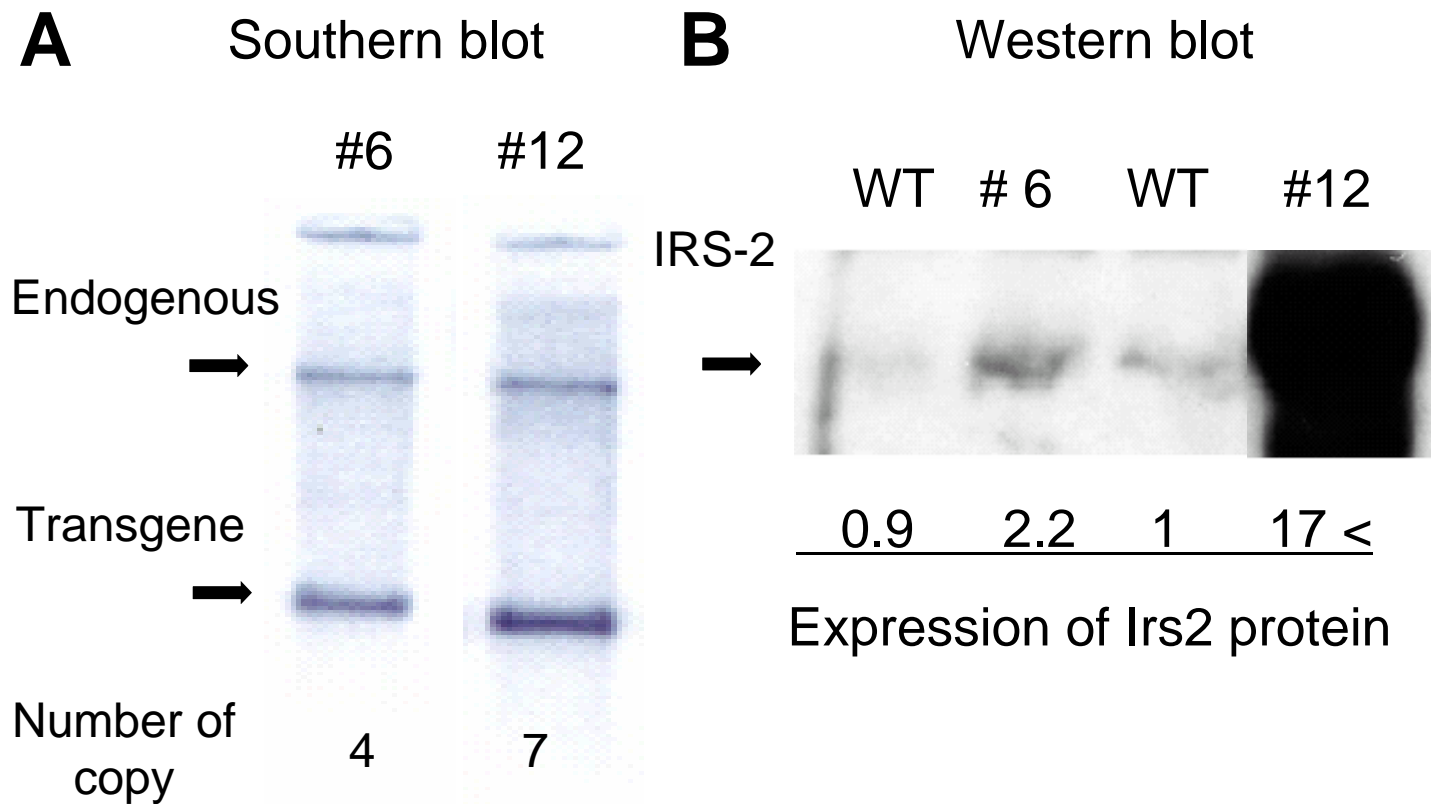
Wild-type mice on the HF diet



Gck^{+/-} mice on the HF diet



Supplementary Figure 2



Supplementary Table 1. List of overexpressed genes in islets from the Gck(+/-) mice on the high-fat diet compared to the islets from the wild-type mice on the high-fat diet

	Description	gene	ratio	wild-type signal
1	Cluster Incl AV067633:AV067633 Mus musculus cDNA /clone=2010207I02 /clone_end=3' /gb=AV067633 /gi=5187461 /ug=Mm.69742 /len=274 /NOTE=replacement for probe set(s) 97032_f_at on MG-U74A	regenerating islet-derived 3 alpha	83.4	-1.3
2	Cluster Incl D63362:Rat generating islet-derived, mouse homolog 3 gamma /cds=(32,556) /gb=D63362 /gi=1911096 /ug=Mm.263 /len=774		38	-36.8
3	Cluster Incl L04678:Integrin beta 4 /cds=UNKNOWN /gb=L04678 /gi=192151 /ug=Mm.21117 /len=5907	integrin beta 4	29.8	-137
4	Cluster Incl M91443:Gap junction membrane channel protein beta 4 /cds=(0,800) /gb=M91443 /gi=192646 /ug=Mm.56906 /len=801		28.9	-158.5
5	Cluster Incl AI530375:ui92c09.y1 Mus musculus cDNA, 5' end /clone=IMAGE-1889872 /clone_end=5' /gb=AI530375 /gi=4444510 /ug=Mm.28393 /len=474	sepiapterin reductase	27.1	-34.4
6	Cluster Incl X92590:Histone cell cycle regulation defective homolog A (S. cerevisiae) /cds=(220,3267) /gb=X92590 /gi=1359984 /ug=Mm.15694 /len=4018	histone cell cycle regulation defective homolog A (S. cerevisiae)	23.4	-132.2
7	Cluster Incl U73478:Acidic nuclear phosphoprotein 32 /cds=(25,768) /gb=U73478 /gi=1763274 /ug=Mm.613 /len=980	acidic (leucine-rich) nuclear phosphoprotein 32 family, member A	22.4	-8.7
8	Cluster Incl AA163268:mr27a11.r1 Mus musculus cDNA, 5' end /clone=IMAGE-598652 /clone_end=5' /gb=AA163268 /gi=1739419 /ug=Mm.1023 /len=515	ESTs	20.9	-33
9	Cluster Incl AV046312:AV046312 Mus musculus cDNA /clone=1700052P21 /clone_end=3' /gb=AV046312 /gi=4865977 /ug=Mm.52648 /len=232 /NOTE=replacement for probe set(s) 103140_f_at on MG-U74A	kallikrein 21	18.7	-24.1
10	Cluster Incl X03994:Kallikrein 8 /cds=(18,803) /gb=X03994 /gi=52777 /ug=Mm.30379 /len=847	kallikrein 8	18.6	16.4
11	Cluster Incl AV040792:AV040792 Mus musculus cDNA /clone=1700013L23 /clone_end=3' /gb=AV040792 /gi=4860457 /ug=Mm.74978 /len=262 /NOTE=replacement for probe set(s) 98259_at on MG-U74A	RIKEN cDNA 1700013L23 gene	17	-111.3
12	Cluster Incl M21019:Harvey rat sarcoma oncogene, subgroup R /cds=(11,667) /gb=M21019 /gi=200676 /ug=Mm.257 /len=949	Harvey rat sarcoma oncogene, subgroup R	16.7	-47.9
13	Cluster Incl AU040563:AU040563 Mus musculus cDNA, 3' end /clone=J0812H07 /clone_end=3' /gb=AU040563 /gi=3954383 /ug=Mm.42689 /len=257	keratin complex 1, acidic, gene 19	15.5	-23.1
14	Cluster Incl U24703:Reelin /cds=(282,10667) /gb=U24703 /gi=2702252 /ug=Mm.3057 /len=11673	reelin	13.5	-3.1
15	Cluster Incl AF023919:Mus musculus PK-120 precursor (itih-4) mRNA, complete cds /cds=(16,2844) /gb=AF023919 /gi=2739027 /ug=Mm.34819 /len=3030	inter alpha-trypsin inhibitor, heavy chain 4	12.6	-45.9
16	Cluster Incl D63357:Rat generating islet-derived, mouse homolog 3 alpha /cds=(27,554) /gb=D63357 /gi=1911086 /ug=Mm.2552 /len=773	regenerating islet-derived 3 alpha	12.3	61.4
17	Cluster Incl AV049722:AV049722 Mus musculus cDNA /clone=1810011D19 /clone_end=3' /gb=AV049722 /gi=5135494 /ug=Mm.81195 /len=215 /NOTE=replacement for probe set(s) 100191_f_at on MG-U74A	regenerating islet-derived 3 gamma	11.5	-1.8

18	Cluster Incl AB008791:Phosphatidylinositol 3-kinase, C2 domain containing, gamma polypeptide /cds=(433,4953) /gb=AB008791 /gi=3041785 /ug=Mm.10301 /len=6358	phosphatidylinositol 3-kinase, C2 domain containing, gamma polypeptide	11.1	-50.8
19	Cluster Incl Y07960:BarH-like homeobox 1 /cds=(144,587) /gb=Y07960 /gi=1550782 /ug=Mm.42241 /len=1120	BarH-like homeobox 1	10.4	-44.8
20	Cluster Incl M21285:Stearoyl-coenzyme A desaturase 1 /cds=(0,1067) /gb=M21285 /gi=200949 /ug=Mm.22026 /len=1068		9.1	-6.7
21	Cluster Incl AJ224763:Mus musculus zinc finger gene OZF /cds=(645,1523) /gb=AJ224763 /gi=4469276 /ug=Mm.42054 /len=1661	zinc finger protein 146	8.8	1.6
22	Cluster Incl AF037437:Mus musculus prosaposin gene, promoter and exon 1, partial cds /cds=(86,120) /gb=AF037437 /gi=2707828 /ug=Mm.89451 /len=121		8.3	18.7
23	Cluster Incl M29394:Mouse catalase mRNA, 3' end /cds=(0,77) /gb=M29394 /gi=192377 /ug=Mm.4215 /len=300 /NOTE=replacement for probe set(s) 99560_at on MG-U74A	catalase	8.3	-1.5
24	Cluster Incl X84234:M.musculus mRNA for Gal alpha 2,3-sialyltransferase (ST3Gal III /cds=(66,1190) /gb=X84234 /gi=1845580 /ug=Mm.41978 /len=1250	sialyltransferase 6 (N-acetylglucosaminidase alpha 2,3-sialyltransferase)	8.2	51.2
25	Cluster Incl U52925:Coagulation factor V /cds=(5,6556) /gb=U52925 /gi=3219690 /ug=Mm.12900 /len=6585	coagulation factor V	7.9	-7.5
26	Cluster Incl AV322895:AV322895 Mus musculus cDNA, 3' end /clone=6230403N16 /clone_end=3' /gb=AV322895 /gi=6292812 /ug=Mm.85370 /len=217 /NOTE=replacement for probe set(s) 101785_f_at on MG-U74A	fibroblast growth factor inducible 14	7.7	2
27	Cluster Incl AV059956:AV059956 Mus musculus cDNA /clone=1810060N24 /clone_end=3' /gb=AV059956 /gi=5159703 /ug=Mm.81292 /len=244 /NOTE=replacement for probe set(s) 100201_f_at on MG-U74A	integral membrane-associated protein 1	7.3	14.2
28	Cluster Incl AV252118:AV252118 Mus musculus cDNA, 3' end /clone=4833438D21 /clone_end=3' /gb=AV252118 /gi=6239577 /ug=Mm.49880 /len=221 /NOTE=replacement for probe set(s) 102509_f_at on MG-U74A	CCR4 carbon catabolite repression 4-like (S. cerevisiae)	7.2	1.8
29	Cluster Incl AW120867:UI-M-BH2.3-aoa-g-06-0-UI.s1 Mus musculus cDNA, 3' end /clone=UI-M-BH2.3-aoa-g-06-0-UI /clone_end=3' /gb=AW120867 /gi=6096200 /ug=Mm.27777 /len=312	RIKEN cDNA 1700013H19 gene	6.8	-2.5
30	Cluster Incl L22218:Potassium voltage gated channel, shaker related subfamily, member 5 /cds=(297,2105) /gb=L22218 /gi=435603 /ug=Mm.1241 /len=2912	potassium voltage-gated channel, shaker-related subfamily, member 5	6.8	-15.4
31	Cluster Incl X00472:Nerve growth factor, gamma /cds=(0,407) /gb=X00472 /gi=54260 /ug=Mm.14086 /len=428	nerve growth factor, gamma	6.3	-0.1
32	Cluster Incl AV043739:AV043739 Mus musculus cDNA /clone=1700029O22 /clone_end=3' /gb=AV043739 /gi=4863404 /ug=Mm.75037 /len=301 /NOTE=replacement for probe set(s) 98262_at on MG-U74A	nerve growth factor, gamma	6.2	19
33	Cluster Incl AW049685:UI-M-BH1-ani-c-01-0-UI.s1 Mus musculus cDNA, 3' end /clone=UI-M-BH1-ani-c-01-0-UI /clone_end=3' /gb=AW049685 /gi=5910214 /ug=Mm.4436 /len=515	RAS-related protein-1a	6	1.9
34	Cluster Incl M21041:Microtubule-associated protein 2 /cds=(213,5699) /gb=M21041 /gi=199022 /ug=Mm.413 /len=5881	microtubule-associated protein 2	5.6	-8
35	Cluster Incl AF016190:Mus musculus connexin-36 (Cx36) gene, complete cds /cds=(0,965) /gb=AF016190 /gi=2828579 /ug=Mm.57046 /len=966		5.5	9.7

36	Cluster Incl AB004639:Mus musculus mRNA for fibroblast growth factor (FGF-18), complete cds /cds=(0,623) /gb=AB004639 /gi=3355891 /ug=Mm.20424 /len=624	fibroblast growth factor 18	5.4	-28.9
37	Cluster Incl M70642:Fibroblast inducible secreted protein /cds=(137,1183) /gb=M70642 /gi=193315 /ug=Mm.1810 /len=2267	connective tissue growth factor	5.3	12.2
38	Cluster Incl AA408477:EST02958 Mus musculus cDNA, 3' end /clone=C0028F02 /clone_end=3' /gb=AA408477 /gi=2067873 /ug=Mm.24490 /len=301	ESTs, Weakly similar to IGEB_MOUSE IGE-BINDING PROTEIN [M.musculus]	5.2	-10.6
39	Cluster Incl D14011:Rat regenerating islet-derived, mouse homolog 2 /cds=(71,592) /gb=D14011 /gi=391773 /ug=Mm.87811 /len=692		5.1	490.7
40	Cluster Incl AI836322:UI-M-AQ0-aag-a-02-0-UI.s2 Mus musculus cDNA, 3' end /clone=UI-M-AQ0-aag-a-02-0-UI /clone_end=3' /gb=AI836322 /gi=5470530 /ug=Mm.939 /len=211	RIKEN cDNA 6720463E02 gene	5	161.4
41	Cluster Incl AF087826:Mus musculus claudin-8 mRNA, complete cds /cds=(0,677) /gb=AF087826 /gi=4191359 /ug=Mm.52263 /len=678	claudin 8	4.9	-49.8
42	Cluster Incl AF060539:Mus musculus channel interacting PDZ domain protein mRNA, complete cds /cds=(249,2087) /gb=AF060539 /gi=3108056 /ug=Mm.29127 /len=3761	channel-interacting PDZ domain protein	4.8	4.3
43	Cluster Incl M77196:Biliary glycoprotein 1 /cds=(69,1445) /gb=M77196 /gi=194002 /ug=Mm.14114 /len=2645	CEA-related cell adhesion molecule 1	4.7	38.8
44	Cluster Incl V00829:Mouse complete gene for a mouse kallikrein (serine protease) and fragment of a second kallikrein gene. Genes are mGK-1 (complete gene) and mGK-2 (fragment). Kallikreins are necessary for the processing of hormones, e.g., growth hormone		4.7	192.9
45	Cluster Incl AV371861:AV371861 Mus musculus cDNA, 3' end /clone=9030421B08 /clone_end=3' /gb=AV371861 /gi=6419508 /ug=Mm.92442 /len=254 /NOTE=replacement for probe set(s) 98678_f_at on MG-U74A	pancreatitis-associated protein	4.7	96.8
46	Cluster Incl D88793:Cysteine rich protein /cds=(130,711) /gb=D88793 /gi=1695703 /ug=Mm.10919 /len=938	cysteine rich protein 1	4.5	31.3
47	Cluster Incl AA608277:vn61g12.r1 Mus musculus cDNA, 5' end /clone=IMAGE-1025734 /clone_end=5' /gb=AA608277 /gi=2456852 /ug=Mm.7071 /len=415	adenosine A2b receptor	4.5	26.2
48	Cluster Incl AW123947:UI-M-BH2.3-aqc-c-12-0-UI.s1 Mus musculus cDNA, 3' end /clone=UI-M-BH2.3-aqc-c-12-0-UI /clone_end=3' /gb=AW123947 /gi=6099477 /ug=Mm.27790 /len=505	RIKEN cDNA 2610510E10 gene	4.2	12
49	Cluster Incl AB000713:Mus musculus mCPE-R mRNA for CPE-receptor, complete cds /cds=(170,802) /gb=AB000713 /gi=2570126 /ug=Mm.7339 /len=1783	claudin 4	4.1	250.6
50	Cluster Incl X56690:Chromobox homolog (Drosophila HP1 beta) /cds=(0,557) /gb=X56690 /gi=53162 /ug=Mm.29055 /len=558	chromobox homolog 1 (Drosophila HP1 beta)	4	35.8
51	Cluster Incl AB013852:Mus musculus mRNA for Nrf3, complete cds /cds=(237,2219) /gb=AB013852 /gi=4521228 /ug=Mm.42138 /len=2544	nuclear factor, erythroid derived 2, like 3	4	-8.9
52	Cluster Incl AI504338:vl06g04.x1 Mus musculus cDNA, 3' end /clone=IMAGE-963414 /clone_end=3' /gb=AI504338 /gi=4402189 /ug=Mm.2460 /len=459 /NOTE=replacement for probe set(s) 103758_at on MG-U74A	ESTs	4	22.9
53	Cluster Incl M36120:Keratin complex 1, acidic, gene 19 /cds=(0,1211) /gb=M36120 /gi=198583 /ug=Mm.1012 /len=1212		3.9	61.1
54	Cluster Incl AI197507:ud56b04.r1 Mus musculus cDNA, 5' end /clone=IMAGE-1449871 /clone_end=5' /gb=AI197507 /gi=3750113 /ug=Mm.18062 /len=436	RIKEN cDNA 3830613O22 gene	3.9	1.7

55	Cluster Incl M63695:CD1d1 antigen /cds=(91,1101) /gb=M63695 /gi=192471 /ug=Mm.1894 /len=1838	CD1d1 antigen	3.9	-0.4
56	Cluster Incl AI553024:vf37g06.y1 Mus musculus cDNA, 5' end /clone=IMAGE-846010 /clone_end=5' /gb=AI553024 /gi=4485387 /ug=Mm.34106 /len=367	ESTs, Highly similar to 2118318A promyelocyte leukemia Zn finger protein [Mus musculus] [M.musculus]	3.9	3.1
57	Cluster Incl M13500:Mouse potential kallikrein gene /cds=(0,785) /gb=M13500 /gi=4263012 /ug=Mm.4486 /len=786		3.8	375.2
58	Cluster Incl AJ223206:Mus musculus mRNA for scrapie responsive protein 1 /cds=(216,512) /gb=AJ223206 /gi=3319771 /ug=Mm.12886 /len=700	scrapie responsive gene 1	3.8	-14.7
59	Cluster Incl AB005663:Mus musculus mRNA for JNK1, complete cds /cds=(24,1178) /gb=AB005663 /gi=6141550 /ug=Mm.89839 /len=1197	mitogen activated protein kinase 8	3.7	-1.2
60	Cluster Incl AW122207:UI-M-BH2.2-aov-c-06-0-UI.s1 Mus musculus cDNA, 3' end /clone=UI-M-BH2.2-aov-c-06-0-UI /clone_end=3' /gb=AW122207 /gi=6097668 /ug=Mm.38184 /len=605 /NOTE=replacement for probe set(s) 98592_at on MG-U74A	down-regulator of transcription 1	3.7	50.2
61	Cluster Incl U70538:Mus musculus UDP-GalNAc-polypeptide N-acetylgalactosaminyltransferase-T3 mRNA, complete cds /cds=(222,2123) /gb=U70538 /gi=1575722 /ug=Mm.38441 /len=2879	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 3	3.5	-0.4
62	Cluster Incl X01801:Nerve growth factor, alpha /cds=(0,724) /gb=X01801 /gi=53369 /ug=Mm.16730 /len=725		3.5	119.2
63	Cluster Incl AW047343:UI-M-BH1-ame-a-08-0-UI.s1 Mus musculus cDNA, 3' end /clone=UI-M-BH1-ame-a-08-0-UI /clone_end=3' /gb=AW047343 /gi=5907872 /ug=Mm.3459 /len=321 /NOTE=replacement for probe set(s) 98450_at on MG-U74A	D site albumin promoter binding protein	3.5	30.4
64	Cluster Incl X60103:Ribonuclease 1, pancreatic /cds=(76,525) /gb=X60103 /gi=53981 /ug=Mm.3412 /len=793		3.4	124.3
65	Cluster Incl AA738776:vv67d07.r1 Mus musculus cDNA, 5' end /clone=IMAGE-1227469 /clone_end=5' /gb=AA738776 /gi=2776028 /ug=Mm.18659 /len=385	RIKEN cDNA 5730470C09 gene	3.4	21.2
66	Cluster Incl AI849396:UI-M-AJ1-ahc-b-12-0-UI.s1 Mus musculus cDNA, 3' end /clone=UI-M-AJ1-ahc-b-12-0-UI /clone_end=3' /gb=AI849396 /gi=5493302 /ug=Mm.24002 /len=304	RIKEN cDNA 1700023O11 gene	3.4	6.9
67	Cluster Incl D63359:Pancreatitis-associated protein /cds=(31,558) /gb=D63359 /gi=1911090 /ug=Mm.2553 /len=759	pancreatitis-associated protein	3.3	615.7
68	Cluster Incl AI837415:UI-M-AP0-abm-f-06-0-UI.s1 Mus musculus cDNA, 3' end /clone=UI-M-AP0-abm-f-06-0-UI /clone_end=3' /gb=AI837415 /gi=5471628 /ug=Mm.22491 /len=360	RIKEN cDNA 6720465F12 gene	3.2	64.1
69	Cluster Incl X14432:Thrombomodulin /cds=(158,1891) /gb=X14432 /gi=54781 /ug=Mm.24096 /len=3636	thrombomodulin	3.2	8.4
70	Cluster Incl M80631:Guanine nucleotide binding protein, alpha 14 /cds=(156,1223) /gb=M80631 /gi=193568 /ug=Mm.22322 /len=1503	guanine nucleotide binding protein, alpha 14	3.2	-0.1

71	Cluster Incl AI837838:UI-M-AP0-abk-b-09-0-UI.s1 Mus musculus cDNA, 3' end /clone=UI-M-AP0-abk-b-09-0-UI /clone_end=3' /gb=AI837838 /gi=5472051 /ug=Mm.41772 /len=465 /NOTE=replacement for probe set(s) 99173_s_at, 99174_r_at on MG-U74A	transmembrane protein with EGF-like and two follistatin-like domains 1	3.2	2
72	Cluster Incl AI853079:UI-M-BH0-ajf-a-07-0-UI.s1 Mus musculus cDNA, 3' end /clone=UI-M-BH0-ajf-a-07-0-UI /clone_end=3' /gb=AI853079 /gi=5496985 /ug=Mm.198 /len=477 /NOTE=replacement for probe set(s) 103583_at on MG-U74A	transmembrane protein 5	3.2	5.2
73	Cluster Incl AV053434:AV053434 Mus musculus cDNA /clone=1810027B03 /clone_end=3' /gb=AV053434 /gi=5153181 /ug=Mm.47347 /len=237 /NOTE=replacement for probe set(s) 102188_f_at on MG-U74A	regenerating islet-derived 1	3.2	51.3
74	Cluster Incl U37438:Mus musculus CRP-ductin-alpha mRNA, complete cds /cds=(8,6259) /gb=U37438 /gi=1276646 /ug=Mm.4138 /len=6652	deleted in malignant brain tumors 1	3.1	243.2
75	Cluster Incl AJ001633:Annexin III /cds=(200,1171) /gb=AJ001633 /gi=2437839 /ug=Mm.7214 /len=1602	annexin A3	3.1	32.7
76	Cluster Incl AV313457:AV313457 Mus musculus cDNA, 3' end /clone=5830410H16 /clone_end=3' /gb=AV313457 /gi=6278709 /ug=Mm.79249 /len=184 /NOTE=replacement for probe set(s) 99709_f_at on MG-U74A	N-terminal Asn amidase	3.1	14.3
77	Cluster Incl AV259769:AV259769 Mus musculus cDNA, 3' end /clone=4930406C13 /clone_end=3' /gb=AV259769 /gi=6247228 /ug=Mm.50132 /len=240 /NOTE=replacement for probe set(s) 102516_at on MG-U74A	complement component 4 (within H-2S)	3.1	-8.6
78	Cluster Incl Y00500:Kallikrein 5 /cds=(42,827) /gb=Y00500 /gi=51071 /ug=Mm.30375 /len=887		3	402.5
79	Cluster Incl M17962:Epidermal growth factor binding protein type C /cds=(36,821) /gb=M17962 /gi=192997 /ug=Mm.14090 /len=870	kallikrein 9	3	651.2
80	Cluster Incl AA655804:vs44f02.r1 Mus musculus cDNA, 5' end /clone=IMAGE-1149147 /clone_end=5' /gb=AA655804 /gi=2591958 /ug=Mm.21105 /len=255 /NOTE=replacement for probe set(s) 103304_at on MG-U74A		3	0.4
81	Cluster Incl AV306568:AV306568 Mus musculus cDNA, 3' end /clone=5730542F02 /clone_end=3' /gb=AV306568 /gi=6339082 /ug=Mm.85816 /len=250 /NOTE=replacement for probe set(s) 102598_at on MG-U74A	proteasome (prosome, macropain) 28 subunit, alpha	3	0.3

Ratio means the ratio of level of expression in wild-type mice to that in Gck (+/-) mice, and "wild-type signal" means the intensity of level of expression in wild-type mice. Statistical significance was calculated with Microarray Suite software.

Supplementary Table 2. List of underexpressed genes in islets from the Gck(+/-) mice on the high-fat diet compared to the islets from the wild-type mice on the high-fat diet

	Description	Gene	ratio	wild-type signal
1	"Cluster Incl U58882:LIM and SH3 protein 1 /cds=(0,617) /gb=U58882 /gi=1407650 /ug=Mm.89941 /len=1199"	LIM and SH3 protein 1	-39.7	55
2	"Cluster Incl AF090738:Mus musculus insulin receptor substrate-2 (Irs2) gene, partial cds /cds=(0,2206) /gb=AF090738 /gi=3661524 /ug=Mm.34143 /len=2207"	IRS2	-25.5	-0.6
3	"Cluster Incl U37545:Steroid sulfatase /cds=(255,2129) /gb=U37545 /gi=1017810 /ug=Mm.5129 /len=2283"	steroid sulfatase	-25.3	-86.2
4	"Cluster Incl AW122517:UI-M-BH2.2-aox-a-10-0-UI.s1 Mus musculus cDNA, 3' end /clone=UI-M-BH2.2-aox-a-10-0-UI /clone_end=3' /gb=AW122517 /gi=6098041 /ug=Mm.69024 /len=439"	RIKEN cDNA 8430421107 gene	-24.5	32.1
5	"Cluster Incl AA589418:vl46g07.s1 Mus musculus cDNA, 3' end /clone=IMAGE-975324 /clone_end=3' /gb=AA589418 /gi=2402798 /ug=Mm.7001 /len=450"		-22.5	83
6	"Cluster Incl X51975:Interleukin 6 receptor, alpha /cds=(0,1382) /gb=X51975 /gi=49725 /ug=Mm.2856 /len=2499"	interleukin 6 receptor, alpha	-18.4	113.4
7	"Cluster Incl AV380793:AV380793 Mus musculus cDNA, 3' end /clone=9230102C24 /clone_end=3' /gb=AV380793 /gi=6429870 /ug=Mm.25082 /len=255"	hypothetical protein MGC37551	-18.3	36.9
8	"Cluster Incl X91617:M.musculus mRNA for 5'-3' exonuclease /cds=(102,5261) /gb=X91617 /gi=1894790 /ug=Mm.42050 /len=5495"	5'-3' exoribonuclease 1	-15.2	4.4
9	"Cluster Incl AW046671:UI-M-BH1-alm-a-09-0-UI.s1 Mus musculus cDNA, 3' end /clone=UI-M-BH1-alm-a-09-0-UI /clone_end=3' /gb=AW046671 /gi=5907200 /ug=Mm.27094 /len=240"	SKI interacting protein	-12.7	22.9
10	"Cluster Incl L46651:Mus musculus alpha-D-galactosidase (Ags) gene, complete cds /cds=(0,1259) /gb=L46651 /gi=945408 /ug=Mm.1114 /len=1260"		-12.2	25.6
11	"Cluster Incl AF051337:Mus musculus cytohesin-1 mRNA, complete cds /cds=(0,1196) /gb=AF051337 /gi=3834396 /ug=Mm.20443 /len=1197"	pleckstrin homology, Sec7 and coiled/coil domains 1	-10.9	42.1
12	"Cluster Incl L36062:Mus musculus nuclear-encoded mitochondrial steroidogenic acute regulatory protein (Star) mRNA, complete cds /cds=(72,926) /gb=L36062 /gi=1236242 /ug=Mm.3436 /len=1466"	steroidogenic acute regulatory protein	-10.3	34.5
13	"Cluster Incl M80423:Mus castaneus IgK chain gene, C-region, 3' end /cds=(0,322) /gb=M80423 /gi=196865 /ug=Mm.46804 /len=323"		-10.1	30.1
14	"Cluster Incl AA266467:mz67g09.r1 Mus musculus cDNA, 5' end /clone=IMAGE-718528 /clone_end=5' /gb=AA266467 /gi=1902637	sema domain, immunoglobulin	-9.6	61
15	"Cluster Incl U49393:Mus musculus sarcoendoplasmic reticulum Ca2+ ATPase SERCA3b mRNA, complete cds /cds=(46,3162) /gb=U49393 /gi=1438538 /ug=Mm.6306 /len=3349"	ATPase, Ca++ transporting, ubiquitous	-9	167.7
16	"Cluster Incl U64445:Ubiquitin fusion degradation 1 - like /cds=(106,1029) /gb=U64445 /gi=1654347 /ug=Mm.1830 /len=1479"	ubiquitin fusion degradation 1 like	-7.4	156.2
17	"Cluster Incl U86783:Nur related protein 1 /cds=(624,2420) /gb=U86783 /gi=2052389 /ug=Mm.3507 /len=2421"		-7.4	36.3
18	"Cluster Incl AB025413:Mus musculus mRNA for Ten-m4, complete cds /cds=(187,8502) /gb=AB025413 /gi=4760781 /ug=Mm.42204 /len=8585"	odd Oz/ten-m homolog 4 (Drosophila)	-7.4	23.4
19	"Cluster Incl U54803:Caspase 3, apoptosis related cysteine protease /cds=(15,848) /gb=U54803 /gi=1518967 /ug=Mm.34405 /len=1418"		-7.1	3.5
20	"Cluster Incl X17320:Purkinje cell protein 4 /cds=(15,203) /gb=X17320 /gi=53607 /ug=Mm.5023 /len=474 /NOTE=replacement for probe set(s) 100485_at on MG-U74A"	Purkinje cell protein 4	-7	31.1
21	"Cluster Incl X60136:Trans-acting transcription factor 1 /cds=(0,307) /gb=X60136 /gi=54158 /ug=Mm.4618 /len=454"		-6.9	91.9

22	"Cluster Incl AF038995:Mus musculus putative RNA helicase RCK mRNA, partial cds /cds=(0,1359) /gb=AF038995 /gi=2745893 /ug=Mm.97095 /len=1360"	DEAD/H (Asp-Glu-Ala-Asp/His) box polypeptide 6	-6.6	74.2
23	"Cluster Incl AV319920:AV319920 Mus musculus cDNA, 3' end /clone=6030414A10 /clone_end=3' /gb=AV319920 /gi=6289753 /ug=Mm.85283 /len=250 /NOTE=replacement for probe set(s) 101750_at on MG-U74A"	hypothetical protein LOC269796	-6.4	15.6
24	"Cluster Incl AW047616:UI-M-BH1-akm-e-07-0-UI.s1 Mus musculus cDNA, 3' end /clone=UI-M-BH1-akm-e-07-0-UI /clone_end=3' /gb=AW047616 /gi=5908145 /ug=Mm.89571 /len=422"	hypothetical protein LOC224727	-5.9	17.7
25	"Cluster Incl M83749:Cyclin D2 /cds=(270,1139) /gb=M83749 /gi=192938 /ug=Mm.3141 /len=1255"	cyclin D2	-5.8	360.1
26	"Cluster Incl AI843258:UI-M-AO1-aei-b-08-0-UI.s1 Mus musculus cDNA, 3' end /clone=UI-M-AO1-aei-b-08-0-UI /clone_end=3' /gb=AI843258 /gi=5477471 /ug=Mm.2875 /len=308"	nuclear localized protein 1	-5.6	107.7
27	"Cluster Incl U49393:Mus musculus sarcoendoplasmic reticulum Ca2+ ATPase SERCA3b mRNA, complete cds /cds=(46,3162) /gb=U49393 /gi=1438538 /ug=Mm.6306 /len=3349"	ATPase, Ca++ transporting, ubiquitous	-5.2	411.7
28	"Cluster Incl L08061:Caudal type homeo box 4 /cds=(165,1013) /gb=L08061 /gi=388039 /ug=Mm.4353 /len=1598"	caudal type homeo box 4	-5.2	11.2
29	"Cluster Incl Y00884:Mouse mRNA (3.4J) from concanavalin A-stimulated LB3 T-cells /cds=(22,1776) /gb=Y00884 /gi=49727 /ug=Mm.2442 /len=1957"	calcium binding protein, intestinal	-4.8	267.6
30	"Cluster Incl M29793:M.musculus slow/cardiac troponin C (cTnC) mRNA, complete cds /cds=(43,528) /gb=M29793 /gi=192839 /ug=Mm.712 /len=703"	troponin C, cardiac/slow skeletal	-4.7	11.7
31	"Cluster Incl AI848924:UI-M-AJ1-ahh-e-10-0-UI.s1 Mus musculus cDNA, 3' end /clone=UI-M-AJ1-ahh-e-10-0-UI /clone_end=3' /gb=AI848924 /gi=5492830 /ug=Mm.15962 /len=477 /NOTE=replacement for probe set(s) 102909_r_at on MG-U74A"	poly (ADP-ribose) glycohydrolase	-4.7	123.9
32	"Cluster Incl Z47088:Transcription elongation factor B (SIII), polypeptide 1 (15 kDa),-like /cds=UNKNOWN /gb=Z47088 /gi=861057 /ug=Mm.42944 /len=1219"	transcription elongation factor B (SIII), polypeptide 1-like	-4.6	181.3
33	"Cluster Incl AI507104:vj81c01.x1 Mus musculus cDNA, 3' end /clone=IMAGE-935424 /clone_end=3' /gb=AI507104 /gi=4404955 /ug=Mm.19937 /len=561"	gamma-glutamyl carboxylase	-4.6	22.9
34	"Cluster Incl AI551087:vx36f11.x1 Mus musculus cDNA, 3' end /clone=IMAGE-1277325 /clone_end=3' /gb=AI551087 /gi=4483450 /ug=Mm.11223 /len=446"		-4.5	80.7
35	"Cluster Incl AF012834:Mus musculus inwardly rectifying potassium channel ROMK-2 mRNA, complete cds /cds=(38,1156) /gb=AF012834 /gi=3282370 /ug=Mm.25731 /len=1252"	potassium inwardly-rectifying channel, subfamily J, member 1	-4.5	1.6
36	"Cluster Incl U62522:Trans-acting transcription factor 4 /cds=(136,2484) /gb=U62522 /gi=1421809 /ug=Mm.5073 /len=2678"	trans-acting transcription factor 4	-4.4	4.3
37	"Cluster Incl AF039021:Mus musculus pericentriolar material 1 (Pcm1) gene, partial cds /cds=(0,196) /gb=AF039021 /gi=3170134 /ug=Mm.28192 /len=197"		-4.3	40.4
38	"Cluster Incl AA184423:mt52b02.r1 Mus musculus cDNA, 5' end /clone=IMAGE-633483 /clone_end=5' /gb=AA184423 /gi=1768072 /ug=Mm.5999 /len=414 /NOTE=replacement for probe set(s) 100918_at, 100919_g_at on MG-U74A"		-4.2	-1.2
39	"Cluster Incl AV232449:AV232449 Mus musculus cDNA, 3' end /clone=4632415C05 /clone_end=3' /gb=AV232449 /gi=6184964 /ug=Mm.59702 /len=241 /NOTE=replacement for probe set(s) 94660_at on MG-U74A"	cadherin 15	-4.2	6.8
40	"Cluster Incl X55038:Centromere autoantigen B /cds=(0,1799) /gb=X55038 /gi=50381 /ug=Mm.41454 /len=1800"		-4	55.4

41	"Cluster Incl J00413:Hemoglobin, beta adult major chain /cds=(0,443) /gb=J00413 /gi=193793 /ug=Mm.87778 /len=444"		-4	107
42	"Cluster Incl AA914345:vy94a08.r1 Mus musculus cDNA, 5' end /clone=IMAGE-1313846 /clone_end=5' /gb=AA914345 /gi=3053737 /ug=Mm.25624 /len=452"	interferon-inducible GTPase	-4	-13.9
43	"Cluster Incl U76716:Calcium channel, P/Q type, alpha 1A /cds=(0,6494) /gb=U76716 /gi=1710176 /ug=Mm.41842 /len=6495"	calcium channel, voltage-dependent, P/Q type, alpha 1A subunit	-4	31.9
44	"Cluster Incl AA408453:EST02923 Mus musculus cDNA, 3' end /clone=C0028A12 /clone_end=3' /gb=AA408453 /gi=2067838 /ug=Mm.13144 /len=362"	transcription factor MLR2	-4	17.2
45	"Cluster Incl X00652:Mouse DNA for Ig-kappa light chain V-J kappa 5 joining region (cell line CH2) /cds=(0,342) /gb=X00652 /gi=52193 /ug=Mm.88807 /len=343"		-4	48.1
46	"Cluster Incl AB028868:Mus musculus P4(21)n mRNA, partial cds /cds=(0,1202) /gb=AB028868 /gi=5103286 /ug=Mm.42043 /len=1730"		-3.9	1
47	"Cluster Incl AV327149:AV327149 Mus musculus cDNA, 3' end /clone=6330417D18 /clone_end=3' /gb=AV327149 /gi=6367201 /ug=Mm.94418 /len=229 /NOTE=replacement for probe set(s) 99244_f_at on MG-U74A"	RIKEN cDNA 6330403K07 gene	-3.9	8
48	"Cluster Incl AV295836:AV295836 Mus musculus cDNA, 3' end /clone=5730437D16 /clone_end=3' /gb=AV295836 /gi=6327853 /ug=Mm.79733 /len=219 /NOTE=replacement for probe set(s) 99745_f_at on MG-U74A"	lurcher transcript 1	-3.9	5.5
49	"Cluster Incl U92437:Phosphatase and tensin homolog /cds=(948,2159) /gb=U92437 /gi=1916329 /ug=Mm.1591 /len=2160 /NOTE=replacement for probe set(s) 103019_at on MG-U74A"	phosphatase and tensin homolog	-3.8	151.2
50	"Cluster Incl AV315320:AV315320 Mus musculus cDNA, 3' end /clone=5830429G07 /clone_end=3' /gb=AV315320 /gi=6280738 /ug=Mm.85172 /len=185 /NOTE=replacement for probe set(s) 101322_at on MG-U74A"	DNA segment, Chr 16, ERATO Doi 480, expressed	-3.8	7.1
51	"Cluster Incl AW046036:UI-M-BH1-akv-b-01-0-UI.s1 Mus musculus cDNA, 3' end /clone=UI-M-BH1-akv-b-01-0-UI /clone_end=3' /gb=AW046036 /gi=5906565 /ug=Mm.25849 /len=289"	RIKEN cDNA 2010003O14 gene	-3.7	0.7
52	"Cluster Incl AF026537:Mus musculus prodynorphin mRNA, complete cds /cds=(203,949) /gb=AF026537 /gi=2582527 /ug=Mm.6239 /len=2400"	prodynorphin	-3.7	660.5
53	"Cluster Incl AW122820:UI-M-BH2.1-aoz-b-12-0-UI.s1 Mus musculus cDNA, 3' end /clone=UI-M-BH2.1-aoz-b-12-0-UI /clone_end=3' /gb=AW122820 /gi=6098350 /ug=Mm.28652 /len=302"	coronin, actin binding protein 1B	-3.6	104.6
54	"Cluster Incl X78545:M.musculus MCP-8 mRNA for serine protease /cds=(10,753) /gb=X78545 /gi=496642 /ug=Mm.41979 /len=845"	mast cell protease 8	-3.6	-22.1
55	"Cluster Incl X61597:M.musculus gene for kallikrein-binding protein /cds=(111,1364) /gb=X61597 /gi=52808 /ug=Mm.14191 /len=1690"		-3.5	4.3
56	"Cluster Incl AV336534:AV336534 Mus musculus cDNA, 3' end /clone=6330587N24 /clone_end=3' /gb=AV336534 /gi=6376586 /ug=Mm.97654 /len=229 /NOTE=replacement for probe set(s) 99796_f_at on MG-U74A"	mutS homolog 3 (E. coli)	-3.5	2.5
57	"Cluster Incl AI835081:UI-M-AI1-afn-h-02-0-UI.s1 Mus musculus cDNA, 3' end /clone=UI-M-AI1-afn-h-02-0-UI /clone_end=3' /gb=AI835081 /gi=5469294 /ug=Mm.27341 /len=449 /NOTE=replacement for probe set(s) 94996_at on MG-U74A"	hypothetical protein LOC269796	-3.4	24.7
58	"Cluster Incl AV367224:AV367224 Mus musculus cDNA, 3' end /clone=8430429D15 /clone_end=3' /gb=AV367224 /gi=6414871 /ug=Mm.98081 /len=249 /NOTE=replacement for probe set(s) 100181_f_at on MG-U74A"	bleomycin hydrolase	-3.3	17.4
59	"Cluster Incl X72307:Hepatocyte growth factor /cds=(0,2247) /gb=X72307 /gi=433430 /ug=Mm.15629 /len=2320"	RIKEN cDNA C230052L06 gene	-3.1	1.2

60	"Cluster Incl AV371850:AV371850 Mus musculus cDNA, 3' end /clone=9030420N10 /clone_end=3' /gb=AV371850 /gi=6419497 /ug=Mm.96728 /len=242 /NOTE=replacement for probe set(s) 99755_i_at on MG-U74A"	ATP synthase, H+ transporting, mitochondrial F1 complex, alpha subunit, isoform 1	-3.1	2.3
61	"Cluster Incl AF079535:Mus musculus 3-phosphoinositide dependent protein kinase-1 mRNA, complete cds /cds=(91,1770) /gb=AF079535 /gi=4028126 /ug=Mm.10504 /len=1923"	3-phosphoinositide dependent protein kinase-1	-3	32.5
62	"Cluster Incl Z11981:Plasmacytoma variant translocation 1 /cds=(22,282) /gb=Z11981 /gi=53831 /ug=Mm.4608 /len=6543"	plasmacytoma variant translocation 1	-3	8.2
63	/clone=9130209E15 /clone_end=3' /gb=AV376442 /gi=6424089 /ug=Mm.96853 /len=244 /NOTE=replacement for probe set(s)	days embryo head cDNA, RIKEN full-	-3	5.6

Ratio means the ratio of level of expression in wild-type mice to that in Gck (+/-) mice, and "wild-type signal" means the intensity of level of expression in wild-type mice. Statistical significance was calculated with Microarray Suite software.

Although LIM and SH3 protein1 (1) and caspase 3 (19) were underexpressed in this table, these results were not reproduced in the identical genes which were contained in this microarray. We therefore assume that expression levels of LIM and SH3 protein 1 and caspase 3 were not essentially altered between the two mouse groups.