Supporting Information

Lee *et al.* 10.1073/pnas.0810100105

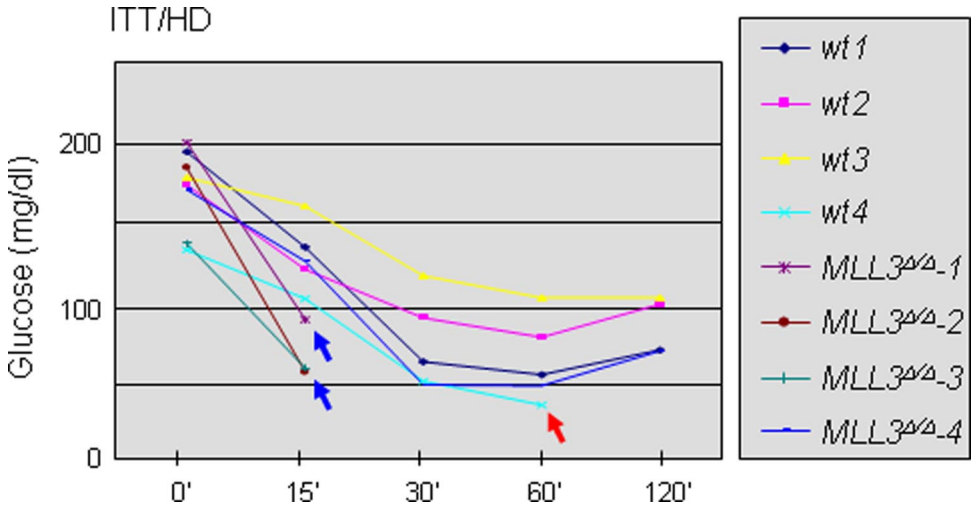

Fig. S1. ITT was carried out with 0.75 units of insulin after 4 h of fasting for WT ($n = 4$) and *MLL3*$^{\Delta/\Delta}$ ($n = 4$) mice fed 2 months of high-fat diet (HD). Two *MLL3*$^{\Delta/\Delta}$ mice showed hypoglycemia 15 min after insulin injection (blue arrows), and one *MLL3*$^{\Delta/\Delta}$ mouse showed hypoglycemia 60 min after insulin injection (red arrows).

Table S1. MLL3 target genes in WAT

upregulated genes (27)	downregulated genes (45)
Fmr1	8030445B08Rik
Apoc1 (1)	Msh4
Prdc	Myl1
Apod	Ucp3
Sox18	1810057C19Rik
Baisp2	9130017N09Rik
Cldn5	3110013H01Rik
Igfbp7	Cmklr1
Ets2	Stx3
Fscn1	Sfrp5
Ccl8	4933428A15Rik
Vesf1	**Vldlr** (2)
Ifi30	Dlc1
Clic1	Prnp
C1qr	Acadm
Bcl6b	1700017I11Rik
Cdkn2c	**Ctsl** (3)
9130409J20Rik	Nrg4
Igf1r (3)	Kera
0610009A07Rik	Rshl1
2010107K23Rik	Fmo1
H3f3b	Pon3
Agt	Ppp1r1a
Myo1b	Cyp1a1
Esam1	Igh-Ia
Fbxl14	9530081K03Rik
F11r	1700007N14Rik
	1810022C23Rik
	Lpin1 (4)
	1700023H08Rik
	Dnajd1Phlda3
	Serpine2
	2410066K11Rik
	Sncg
	Tex101
	9130010F19Rik
	Depdc6
	Dpt
	Rbp4 (5)
	AU018778
	Timp4
	Sycp3
	BC018222
	Spata6
	Enpep

Table S2. MLL3 target genes in BAT

upregulated genes (402)

Acta1
Tnni2
Pva
Myl2
Atp2a1
Tnnc2
Mylpf
Rgs2
Tnnt3
Myl1
Myoz1
Casq1
Ap1m2
Ckm
Tcrb-V8.2
Myh2
Tncc
4921513O20Rik
Myh3
Eno3
Myoz2
Gabt4
2310076E16Rik
Proc
Ldb3
Ivns1abp
Myh6
Apoe
Akap7
Tpm3
2310047C17Rik
Bcl7c
1700123I01Rik
Mybpc3
Smpx
Gsn
Cpsf1
Nphp1
Clic1
4930502M04Rik
Tna
Retnla
A730008L03Rik
Dpt
Ryr1
9130022B02Rik
Arid4b
6530402N02Rik
Des
Rest
Hmgcs2
Tfpi2
2010005H15Rik
Nnat
Myom1
4930455D15Rik
1810073O08Rik
Actg2
Abca4
Adh6-ps1
Rfrp
1110001E17Rik
1700024K14Rik
2700057C20Rik
1700019L03Rik
Og9x
Dmrt1
4932418C03Rik
4931417G12Rik
4930588G05Rik
Actn3
Pscd4
9430077D24Rik
Itgb1bp2
Lmod2
Phox2a
Selenbp2
Csda
BC021523
Arvcf
Ttid
2310061N23Rik
Mgst3
2300003F07Rik
Ak1
Tcf7l2
6330419D11Rik
Rgmc
Ms4a2
4933440H19Rik
Sprr2h
3110004H13Rik
Pkia
2010012L10Rik
Tnnt1
Myl3
Vasp
5330430P22Rik
Ftsj3
1700027D21Rik
Csrp3
Mlf1
1110028A07Rik
Gstm2
Nupr1
Pvrl3
Tmsb4x
Tfrc
Col3a1
Csen
Ghrhr
Adss
Tnk2
Snrpn
4921522E24Rik
Tnfsf14
Hrc
Cacna1s
6330407D06Rik
Synpo2
Serpinb6c
Rps27
Pip5k2b
Rbmx
Txnip
IMAGE:4010622
LOC228785
Sox14
1810015C04Rik
B830022L21Rik
Fhl1
D0H4S114
Rpl39
Il7r
Rpl23
Itgb2
Rps8
Lamr1
Anxa13
Mfap5
4933411B09Rik
Prph1
4632409L19Rik
Rps3a
Irx2
Scn4a
Rps5
D930010J01Rik
Hipk3
5430401F13Rik
Rpl31
Tead3
Tpm2
Gfra4
Lasp1
Optn
Mns1
Rpl37a
Cd24a
Hsd11b1
Rpl5
Ifld2
2810405I11Rik
Xlr3a
Ror2
Sah
2700055K07Rik
Cav2
2310046K23Rik
Rps7
Stard10
Synpo2l
Esrrg
Ncoa4
Trim16
1200015A22Rik
Arbp
Fhl4
Rarg
Ckmt2
Sh3md1
4930583H14Rik
Acdc
0610010I17Rik
Fbxo32
LOC381438
Serping1
Rps2
Gprk5
Rpl8
Ktn1
Eif3s6ip
Abca1
Shrm
Rps15
Pcdhb9
Krt2-10
Ubd
Cacna2d1
Rpl13
4930550L24Rik
Ptk9l
4933407O12Rik
Rhcg
Rpl38
Mcp
Dhrs3
Tgif
1700001M19Rik
Mcp-y1
1700020I14Rik
Rps16
1810029C22Rik
Crisp2
Vps29
Ebpl
Vapb
Rnf123
Fxyd6
Slpi
Ifitm3
Igh-6
6330404A12Rik
5730407K14Rik
2700049A03Rik
Rps13
1700018F24Rik
Bcl11a
Syn1
C330027I04Rik
Atp1b1
Rpl12
Mxi1
Sui1-rs1
Mtap4
Reg1
Rps10
1600010M07Rik
Bin1
Rps26
Snapc2
Ncam1
2310074I15Rik
2310001N14Rik
Hdlbp
Npc2
Zfy1
Rps24
Gstm3
Acrv1
Slc6a8
2610528E23Rik
1110033I14Rik
Srpx
Il12rb1
Kcnab2
1810008K03Rik
D14Ertd581e
Sox17
Htr3b
Mdk
A030012M09Rik
Herpud1
Rpl30
4921504K03Rik
Kcna7
1810009M01Rik
Ldhd
Rps12
Smc2l1
Ctsq
Mylc2b
Fut9
Ankrd2
Rpl26
4632427C23Rik
Lamc1
Nnt
Aplp2
2810441O16Rik
Agpt
Rpl7
Fcer1g
Mcsp
Olfr17
2810405K02Rik
1190003K14Rik
AV071179
2610318G18Rik
Arl3
Pfdn5
Capzb
D1Ertd622e
Nsep1
Gabra2
2410045D05Rik
Rps19
Idh2
Atp5j
D17H6S56E-5
1110049G11Rik
4833415N24Rik
AI839562
Es10
A730097G17Rik
9430041J12Rik
Clecsf10
Gstp1
Myl6
Oaz2
Cd209b
Ppp3ca
Adamts15
1200008A14Rik
Rpl6
Bmp10
Nasp
R74862
Edg4
2410127L17Rik
LOC211255
Lass2
Nola1
Rpl9
2200002D01Rik
1110030H18Rik
G2an
Kif4
Nope
Adora2a
Hars2
6720460F02Rik
Gprc5c
2810031L11Rik
Hoxd8
Ogt
4921511C04Rik
6430590I03Rik
Pfn2
Trappc6b
Mif
1700008G05Rik
Zfp292
2310042P20Rik
Ms4a4b
Rps27a
3110005O21Rik
Pdcd6ip
Sdh1
Amy1
2310042D19Rik
Tpd52
6030440G05Rik
A930024P13Rik
Gstm5
Smt3h2
4921510J17Rik
Rpl37
Nans
1810057P16Rik
D9Ertd392e
1110004D19Rik
Slc35b1
Ank1
C1qtnf3
AI586015
Dutp
Csnk
Jmjd2c
B130055D15Rik
Fgf5
Got1
0610006H10Rik
5430400N05Rik
5330434G04Rik
Pgcp
V1ra9
Pdcd5
Rpl13a
2900057D21Rik
Dars
Tube1
4930543N07Rik
Sema3b
Npc1
Snrpn
4930534I15Rik
Elp3
BC016423
Rpl29
Rpl24
Ldb1
2610009E16Rik
Usp12
Rpl36
2310067G05Rik
Mapk12
Nicn1
Usp25
2410004C24Rik
2310045B01Rik
Atp5h

downregulated genes (161)

Sephs2
Ndufs1
Pdgfc
4930519N16Rik
Sorl1
Sgk2
Chn1
A830016G23Rik
Angptl3
Psme2
Galnt3
Spred1
Krt1-19
Tnfsf6
Tcfap2b
Eif4g2
2310050B20Rik
Mga
Htr5a
Bphl
Bing4
Mrpl10
5730596K20Rik
Ddx5
Immp2l
Rbm8
Peli2
Tgfb1i4
Sh3glb1
Stk16
H2-Ea
Acadl
Pdgfa
Cryz
1700080E11Rik
Pigq
Sdha
Peci
Rtn4ip1
Lace1
4930544O15Rik
Pltp
Mrpl50
C030006K11Rik
Sphk1
2210010N04Rik
Ssty1
Pbef1
Napb
4930566N20Rik
1600020H07Rik
Dlst
Ep400
4921515G04Rik
Nsep1
Scarb2
Skp2
Sall3
Sepp1
Coasy
St13
Pdha2
1110018O08Rik
Tmepai
Epor
Eva
Dld
Suclg1
4933405E24Rik
Mccc1
Dusp1
Fah
Gapd
Nfatc1
Trfr2
1110007M04Rik
Fars1
4930445B03Rik
Uqcrfs1
Sc5d
1300002F13Rik
1110029F20Rik
Cyp51
1500001L20Rik
Pafah2
4930453J04Rik
Scp2
Mrps2
Ssfa2
2610312I10Rik
Sh3bgrl
1110008F13Rik
Sh3bgrl
Hsd17b12
Ddit4
1110021D01Rik
Chpt1
Ppp2r5a
1200015M12Rik
D130005A03Rik
3930401B19Rik
Ndufab1
Acox1
1500016O10Rik
Acat2
Rad1
Rps6ka3
Dgat2l1
5830411E10Rik
Mtbp
Slc6a6
Slc25a20
Rhob
Pcyt2
Mgll
1700027J07Rik
Ppp1r1a
5830411E10Rik
Tmepai
2310002J15Rik
Acacb
Ltk
Decr1
Svs6
Mmd2
2310001A20Rik
AI448216
Echdc1
Gpd2
Fbp2
Acadm
Dock8
Cpt2
AI843918
4933435A13Rik
Sycp3
Hk2
1300010F03Rik
Etfdh
Ucp3
Cebpb Snx10
Cyp19a1
Aacs
Gpd1
Ptplb
3110020O18Rik
Adcy3
Gadd45g
Cmkor1
Sod3
Dhrs7
Agpat2
Mod1
Adfp
Dio2
Ccrn4l
Ucp1
Gyk
Elovl3