

Table S1

Functional gene-groups:	Symbol	Fold change (RQ)	p value of 2 <sup>-dCT</sup>	Role in PPAR $\gamma$ signaling	Description	Gene name
Pro-adipogenesis related genes:	Axin1	2,00	0,043		Axin 1	AI316800/Axin/Fu/Kb/Ki/fused/kinky/knobly
	Ccnd1	1,66	0,428		Cyclin D1	AI327039/CycD1/Cyl-1/PRAD1/bcl-1/cD1
	Lmna	0,63	0,009		Lamin A	Dhe
	Cebpb	0,61	0,096		CCAAT/enhancer binding protein (C/EBP), beta	C/EBPbeta/CRP2/IL-6DBP/LAP/LIP/NF-IL6/NF-M/Nfil6
	Irs2	0,48	0,185	PPAR $\gamma$ target gene	Insulin receptor substrate 2	Irs-2
	Slc2a4	0,48	0,051	PPAR $\gamma$ target gene	Solute carrier family 2 (facilitated glucose transporter), member 4, GLUT4	Glut-4/Glut4
	Lpl	0,41	0,036	PPAR $\gamma$ target gene	Lipoprotein lipase	-
	Pparg	0,41	0,072	PPAR $\gamma$ target gene	Peroxisome proliferator activated receptor gamma	Nr1c3/PPAR-gamma/PPAR-gamma2/PPARgamma/PPARgamma2
	Fasn	0,37	0,127	PPAR $\gamma$ target gene	Fatty acid synthase	A630082H08Rik/FAS
	Cebpd	0,35	0,059		CCAAT/enhancer binding protein (C/EBP), delta	-
	Sfrp5	0,01	0,019		Secreted frizzled-related sequence protein 5	AI605071/SARP3
Anti-adipogenesis related genes:	Vdr	70,62	0,091		Vitamin D receptor	Nr1i1
	Wnt1	24,61	0,003		Wingless-related MMTV integration site 1	Int-1/Wnt-1/sw/swaying
	Dlk1	15,89	0,018		Delta-like 1 homolog (Drosophila)	AW742678/DLK-1/Dkl/FA1/Ly107/Peg9/SCP1/ZOG/pG2/pref-1
	Shh	7,11	0,407		Sonic hedgehog	9530036O11Rik/Dsh/Hhg1/Hx/Hxl3/M100081
	Wnt3a	4,72	0,279		Wingless-related MMTV integration site 3A	Wnt-3a/vt
	Runx1t1	3,41	0,095		Runt-related transcription factor 1; translocated to, 1 (cyclin D-related)	Cbfa2t1h/ETO/MTG8
	Sirt1	2,96	0,099	Corepressor of PPAR $\gamma$	Sirtuin 1 (silent mating type information regulation 2, homolog) 1 (S. cerevisiae)	AA673258/SIR2L1/Sir2/Sir2a/Sir2alpha
	Ddit3	2,43	0,199		DNA-damage inducible transcript 3	CHOP-10/CHOP10/chop/gadd153
	Sirt2	2,13	0,253		Sirtuin 2 (silent mating type information regulation 2, homolog) 2 (S. cerevisiae)	5730427M03Rik/SIR2L2/Sir2l
	Cdkn1b	1,93	0,019		Cyclin-dependent kinase inhibitor 1B	AA408329/AI843786/Kip1/p27/p27Kip1
	Hes1	1,87	0,021		Hairy and enhancer of split 1 (Drosophila)	Hry/bHLHb39
	Lrp5	1,71	0,113		Low density lipoprotein receptor-related protein 5	BMND1/HBM/LR3/LRP7/OPPG/mKIAA4142
	Cdkn1a	0,55	0,290		Cyclin-dependent kinase inhibitor 1A (P21)	CAP20/CDKI/CIP1/Cdkn1/P21/SDI1/Waf1/mda6/p21Cip1/p21WAF
	Adrb2	0,45	0,064		Adrenergic receptor, beta 2	Adrb-2/Badm/Gpcr7
	Adipoq	0,50	0,207	PPAR $\gamma$ target gene	Adiponectin, C1Q and collagen domain containing	30kDa/APN/Acdc/Acrp30/Ad/GBP28/adipo/apM1
	Retn	0,38	0,087	PPAR $\gamma$ target gene	Resistin	ADSF/Fizz3/Rstrn/Xcp4
Adipogen enzyme:	Lep	0,13	0,038		Leptin	ob/obese
	Lipe	0,35	0,037	PPAR $\gamma$ target gene	Lipase, hormone sensitive	4933403G17Rik/HSL
Pro-Brown Adipose Tissue related genes:	Ucp1	12,14	0,158		Uncoupling protein 1 (mitochondrial, proton carrier)	AI385626/Slc25a7/Ucp
	Dio2	6,41	0,385		Deiodinase, iodothyronine, type II	5DI/II/AI324267/DIOII
	Ppargc1a	3,76	0,073	Cofactor of PPAR $\gamma$ , PPAR $\gamma$ target gene	Peroxisome proliferative activated receptor, gamma, coactivator 1 alpha (PGC-1a)	A830037N07Rik/ENSMUSG00000079510/Gm11133/Pgc-1a/Pgc1/Pgco1/Ppargc1a
	Sirt3	3,19	0,078	PPAR $\gamma$ target gene	Sirtuin 3 (silent mating type information regulation 2, homolog) 3 (S. cerevisiae)	2310003L23Rik/AI848213/Sir2i3
	Prdm16	2,93	0,248		PR domain containing 16	5730557K01Rik/csp1/mel1
	Ppara	2,82	0,076		Peroxisome proliferator activated receptor alpha	4933429D07Rik/AW742785/Nr1c1/PPAR-alpha/PPARalpha/Ppar
	Ppargc1b	2,81	0,314		Peroxisome proliferative activated receptor, gamma, coactivator 1 beta (PGC-1b)	4631412G21Rik/Perc
	Nrf1	2,32	0,163		Nuclear respiratory factor 1	C87038/D6Ert415e
	Src	1,80	0,072		Rous sarcoma oncogene	AW259666/pp60c-src
	Bmp7	1,50	0,257		Bone morphogenetic protein 7	OP1
	Irs1	0,65	0,186		Insulin receptor substrate 1	G972R/IRS-1
Anti-Brown Adipose Tisse related genes:	Nr0b2	7,02	0,137	Cofactor of PPAR $\gamma$	Nuclear receptor subfamily 0, group B, member 2	Wnt12
	Ncoa2	2,70	0,112	Cofactor of PPAR $\gamma$	Nuclear receptor coactivator 2	Rb/Rb-1/pRb
	Twist1	0,58	0,278		Twist homolog 1 (Drosophila)	D1Ert433e/GRIP-1/Grip1/KAT13C/NCoA-2/SRC-2/TIF2/bHLHe75
	Nr1h3	0,54	0,177		Nuclear receptor subfamily 1, group H, member 3	M-Twist/Pde/Ska10/Ska<m10Jus>/Twist/bHLHa38/pdt
	Wnt10b	0,44	0,021		Wingless related MMTV integration site 10b	AU018371/LXR/RLD1/Unr1
Pro-White Adipose Tisse related genes:	Bmp4	1,97	0,351		Bone morphogenetic protein 4	Bmp-4/Bmp2b/Bmp2b-1/Bmp2b1
	Klf4	1,66	0,269		Kruppel-like factor 4 (gut)	EZF/Gklf/Zie
	Fgf10	0,45	0,124		Fibroblast growth factor 10	AEY17/BB213776/Fgf-10/Gsfaey17
	Egr2	0,36	0,094		Early growth response 2	Egr-2/Krox-20/Krox20/NGF1-B/Zfp-25/Zfp-6
Anti-White Adipose Tissue related genes:	Gata2	4,85	0,095		GATA binding protein 2	Gata-2
	Gata3	2,41	0,425		GATA binding protein 3	Gata-3/jal

**Table S1. Results of the Mouse Adipogenesis RT<sup>2</sup> Profile Array.** Fold changes labelled in red indicate upregulated genes while those labelled in green indicate downregulated genes in the Tks4-KO gWAT relative to their levels in the WT animals. The up- and downregulated genes in the table were included in the ARN analysis, the results of which are presented in Figure 3E. The statistical significance of the 2<sup>- $\Delta$ CT</sup> data was assessed via unpaired Student's t-tests.