

Table S1. Comparison of the gene array data from this study with array data obtained from ATF4-deficient fibroblasts

Product/homology	GenBank	This study	Atf4 ⁻		UT		Perk ⁻		UT		
			Tm		Tm		Tm		Tm		
			% of WT	SD	% of WT	SD	% of WT	SD	% of WT	SD	
Translation, amino acid import, and metabolism											
Asns	asparagine synthetase	U38940	x	14	1	24	4	67	11	58	4
EST	alanyl tRNA synthetase homolog	AI839392	x	17	1	42	5	67	7	91	5
Slc7a5	cationic amino acid transporter, y+ system	AB017189	x	18	1	40	9	40	18	55	13
AAAT	neutral amino acid transporter B	L42115		22	1	63	2	62	0	170	85
Mthfd2	methylenetetrahydrofolate dehydrogenase	J04627	x	22	5	36	7	87	21	68	8
Rpms7	phosphoserine aminotransferase homolog	AW122030	x	25	1	32	2	86	37	85	6
EST	L-3-phosphoserine phosphatase homolog	AI846545		27	1	52	10	63	3	63	5
PHAS-I; eIF4Ebp1	eukaryotic translation initiation regulator	U28656	x	27	2	46	1	59	15	64	0
Nars	asparaginyl-tRNA synthetase	AW125874	x	27	1	40	4	52	7	69	14
WRS	tryptophan-tRNA synthetase	X69656		31	2	44	19	10	3	43	13
meca39; Bcat1	branched chain aminotransferase 1	U42443		32	3	46	7	53	15	66	33
EST	threonyl-tRNA synthetase homolog	AI849620	x	32	6	45	7	58	24	74	11
EST	leucyl-tRNA synthetase homolog	AI844089		33	0	55	9	50	3	68	11
Slc3a2	4F2 antigen heavy chain, amino acid transporter	X14309	x	35	2	63	14	86	23	82	8
EST	SY-Y-Tyrosyl tRNA synthetase homolog	AW122542		40	2	64	3	70	2	89	7
EST	isoleucine-tRNA synthetase homolog	AI848393		45	0	52	8	83	5	89	14
Redox or detoxification											
EST	NADH-cytochrome B5 reductase homolog	AI839690		18	1	43	1	19	4	47	14
Cpo	coproporphyrinogen oxidase (hem6)	D16333		32	2	82	39	31	1	47	22
Ero11-pending	ERO1 like, oxidoreductase	AA798624		36	1	63	16	57	6	77	24
EST	FKBP13/PDI homolog	AW122851		39	6	25	0	81	2	75	0
HO-1, Gmox1	heme oxygenase	X56824	x	45	2	65	5	67	3	69	5
Transcription											
C/EBPBeta	CCAAT/enhancer binding protein, Beta	M61007	x	15	4	31	2	29	7	51	17
Prx2	homeo box of paired rule	X52875	x	32	2	22	2	52	2	59	6
C/EBRGamma	GPE1-BP (C/EBPGamma)	AB012273		48	5	65	12	41	2	85	26
Secreted or transmembrane protein											
ptx3	pentaxin related gene galactoside-binding lectin; IgE binding protein	X83601		7	1	31	14	10	1	32	10
Lgals3, L-34		X16834		15	1	18	11	238	120	207	148
EST	coagulation factor XIIIa homolog	AI839918		19	1	46	8	50	12	71	1
X11Gamma	X11gamma protein, mint3, APBA3, Mint-3	AF070975	x	33	2	46	3	58	3	99	17
PMP22	Peripheral myelin protein	Z38110	x	37	3	40	1	102	52	52	10
Nid2, Ly111	Nidogen 2; entactin-2	AB017202	x	41	14	38	9	154	15	57	10
Signalling											
IGFBP-2	insulin-like growth factor binding protein-2	X81580		7	0	9	1	13	7	12	2
Osmr	Oncostatin M receptor beta	AB015978		26	9	28	9	23	6	66	16
EST	EST, GTP-binding protein homolog	AA867773		36	6	60	0	88	16	100	10
OPG; Tnfrsf11b	osteoprotegerin, TGFbeta family	U94331		39	2	42	13	37	4	38	10
Arhj	Ras homolog gene family	AW121127		44	2	53	4	20	12	19	4
Wispl	WNT1 inducible signaling pathway protein 1	AF100777	x	46	0	97	11	21	2	27	8
Grb10	growth factor receptor binding protein	U18996		47	5	50	13	70	8	71	12
Miscellaneous											
Lon	Lon mitochondrial protease homolog	AI838015		2	1	104	109	27	3	195	174
PEDF, Serpinf11	serpin-f1 pigment epithelium-derived factor	AF036164	x	10	1	20	3	29	1	37	1
Gys	muscle glycogen synthase	U53218		43	0	50	0	44	3	56	4
Clic4	chloride intracellular channel 4 (mitochondrial)	AI849533	x	46	1	70	13	62	3	46	10
MIBP-1	myc-intron-binding protein-1	Y15907		47	0	69	8	24	33	56	12

An x indicates that the respective gene appears in both datasets as differentially expressed. 42 genes were extracted in the fibroblast array, of which 18 overlap with this study. These are 43% of the 42 genes of the fibroblast data resulting in a high level of significance at the hypergeometric test ($P < 0.00001$).

Table S2. Physiological data from ATF4^{+/+} and ATF4^{-/-} mice

		WT	KO
before MCAo			
pO ₂	mmHg	101.33 ± 3.51	101.33 ± 2.08
pCO ₂	mmHg	35.33 ± 0.58	33.67 ± 0.58
pH		7.44 ± 0.02	7.39 ± 0.02
HCO ₃ ⁻	mmol/l	22.61 ± 1.28	21.84 ± 0.42
Glucose	mg/dl	87.94 ± 3.78	90.38 ± 1.7
Lactate	mmol/l	1.20 ± 0.11	1.2 ± 0.07
mABP		73.95 ± 2.56	72.95 ± 2.94
mT	°C	36.01 ± 0.19	35.61 ± 0.4
after MCAo			
pO ₂	mmHg	97.67 ± 1.53	96.67 ± 0.58
pCO ₂	mmHg	32.33 ± 1.53	33.67 ± 1.15
pH		7.39 ± 0.02	7.38 ± 0.03
HCO ₃ ⁻	mmol/l	20.59 ± 0.66	20.86 ± 0.57
Glucose	mg/dl	86.58 ± 5.03	85.28 ± 1.05
Lactate	mmol/l	1.21 ± 0.05	1.19 ± 0.05
mABP		67.38 ± 2.71	66.31 ± 1.11
mT	°C	35.49 ± 0.37	35.61 ± 0.41

Shown are the values for blood gases, pH, levels of bicarbonate, glucose, and lactate, and values for mean arterial blood pressure and body temperature. Measurements were carried out 45 min before and after MCAo for three animals each.