



ADRA1A–G α_q signalling potentiates adipocyte thermogenesis through CKB and TNAP

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Supplementary Table 1

Genotyping oligonucleotides

Sequences

Ckb (WT and conditional alleles):

Ckb forward AGG TGG TGG CTA GAG TGA GC
Ckb reverse CAA GGA TCC CAC TGC TCT TC

Adrb1:

Adrb1⁺ forward TCG CTA CCA GAG TTT GCT GA
Adrb1⁺ reverse GGC ACG TAG AAG GAG ACG AC
Adrb1⁻ forward TCG CCT TCT TGA CGA GTT CT
Adrb1⁻ reverse TGG CTC TCT ACA CCT TGG AC

Ebf1/Ebf2 (WT and conditional alleles):

Ebf1 forward CCC CCA CTT CTT GAG GCC TGT GTT GC
Ebf1 reverse CCT GGG AGT GGA GGG AGG AAG GAA AAT
Ebf2 forward GAA CTT GGG GCC AGC CTT TT
Ebf2 reverse TGT CCT TGA GCT CCC AGG CT

Essra/Essrg (WT and conditional alleles):

Essra forward ATG AGC CAG GAT GCA GGT GCC TGC A
Essra reverse GGC TGA GGC AAA GGG ATG GAG GGG T
Essrg forward GTT TTA AAG GCC CTT GGT GAT CTC GC
Essrg reverse CTG CAA CCC TTG GAC TGC CAG AAC

Ppargc1a (WT and conditional alleles):

Ppargc1a forward TCC AGT AGG CAG AGA TTT ATG AC
Ppargc1a reverse TGT CTG GTT TGA CAA TCT GCT AGG TC

CAG-LSL-Gq-DREAD:

GqDREADD forward CGC CAC CAT GTA CCC ATA C
GqDREADD reverse GTG GTA CCG TCT GGA GAG GA

AdipoqCre:

AdipoqCre forward ACG GAC AGA AGC ATT TTC CA
AdipoqCre reverse GGA TGT GCC ATG TGA GTC TG

Ucp1CreERT2:

Ucp1CreERT2 forward GAA CCT GAT GGA CAT GTT CAG G
Ucp1CreERT2 reverse AGT GCG TTC GAA CGC TAG AGC CTG T

Supplementary Table 2

RT-qPCR oligonucleotides (mouse)

Sequences

<i>Ckb</i> forward	GCC TCA CTC AGA TCG AAA CTC
<i>Ckb</i> reverse	GGC ATG TGA GGA TGT AGC CC
<i>Alpl</i> forward	CCA ACT CTT TTG TGC CAG AGA
<i>Alpl</i> reverse	GGC TAC ATT GGT GTT GAG CTT TT
<i>Ppargc1a</i> forward	AGC CGT GAC CAC TGA CAA CGA G
<i>Ppargc1a</i> reverse	GCT GCA TGG TTC TGA GTG CTA AG
<i>Esrra</i> forward	CCA GAG GTG GAC CCT TTG CCT TTC
<i>Esrra</i> reverse	CAC CAG CAG ATG CGA CAC CAG AG
<i>Esrrg</i> forward	CTC CAG CAC CAT CGT AGA GGA TC
<i>Esrrg</i> reverse	GAT CTC ACA TTC ATT CGT GGC TG
<i>Ucp1</i> forward	AAG CTG TGC GAT GTC CAT GT
<i>Ucp1</i> reverse	AAG CCA CAA ACC CTT TGA AAA
<i>Ebf1</i> forward	CCA ACA GCG AAA AGA CCA ATA A
<i>Ebf1</i> reverse	TGT TCT GTC CGT ATC CCA TTG
<i>Ebf2</i> forward	CCA GCT CTG AAA GAC AAG TCG
<i>Ebf2</i> reverse	GAG GTT GCT TTT CAA AAT GGG C
<i>Ppib</i> forward	GGA GAT GGC ACA GGA GGA A
<i>Ppib</i> reverse	GCC CGT AGT GCT TCA GCT T
<i>36b4</i> forward	TCA TCC AGC AGG TGT TTG ACA
<i>36b4</i> reverse	GGC ACC GAG GCA ACA GTT

RT-qPCR oligonucleotides (human)

Sequences

<i>CKB</i> forward	ACT TCA GAA GCG AGG CAC AG
<i>CKB</i> reverse	GAT GAG CAG CTT CAC TCC GT
<i>ADRA1A</i> forward	AAT GCT TCC GAC AGC TCC AA
<i>ADRA1A</i> reverse	TAG TGC GTG ACT GAG TGC AG
<i>ADRB1</i> forward	GTG GCC CTG CGC GAG CAG AAG
<i>ADRB1</i> reverse	GCG TAG CCC AGC CAG TTG AAG A
<i>ADRB3</i> forward	CTC CCC TGG TTC CAT TCC TT
<i>ADRB3</i> reverse	TGG TCT TTT CTA CCC TGC TGC
<i>PPIA</i> forward	TCC TGG CAT CTT GTC CAT
<i>PPIA</i> reverse	TGC TGG TCT TGC CAT TCC T

Supplementary Table 3

ChIP-qPCR oligonucleotides (mouse)

Sequences

ERRα -550 (positive control)

ERRα -550 forward GTG GCC CCG CCT TTC CCC GTG ACC TTC ATT
ERRα -550 reverse ACC CCT GAG GAC CCT CAA GTG GAG AAG CAG

ERRα -3722 (negative control)

ERRα -3722 forward TTG GCA TTG ATA TTG GGG GTG GGA GCA ACT
ERRα -3722 reverse GAC TTC TTA CTT TGA CGC TTT CCT CCA TCG

Prox1 -55772 (negative control)

Prox1 -55772 forward CCA AGC ACA AAT ATC TAA TCA CCC TTT C
Prox1 -55772 reverse CTT CTT GAT AGG TTT ATG GGT TGG GC

Ckb DAR 1

chr12:111672017-111672490

Ckb DAR 1 forward GAC CTG CAA ACC ACT TGG GAC C
Ckb DAR 1 reverse GAT GCG CTG GAC TCT GAC GAT G

Ckb DAR 2

chr12:111670556-111670909

Ckb DAR 2 forward CAG ACG CCA AAG AGA CTG GTC A
Ckb DAR 2 reverse CCT AGT TTG TGC AGT GCC TCC C

Alpl DAR 1

chr4:111672017-111672490

Alpl DAR 1 forward CAC TGG CCC CAT ACT TCA GGG T
Alpl DAR 1 reverse AGG CTT CTC AGC TCT TGG GGA G

Alpl DAR 2

chr4:111670556-111670909

Alpl DAR 2 forward GGG CAG AAG GCT TGT CCA AGG G
Alpl DAR 2 reverse GAG CTG ACA TGT CCA GAA AAG AGC

Alpl DAR 3

chr4:111672017-111672490

Alpl DAR 3 forward TTC TTC TCA CAA GCC CCA GGC
Alpl DAR 3 reverse AGG CTC CCC GGT GAC CTT TTA G

Alpl DAR 4

chr4:111670556-111670909

Alpl DAR 4 forward GGC TGC CAG AGC TGG AAA TCA G
Alpl DAR 4 reverse AAC CCA TGA GGC TGT CTG GTG T

Alpl DAR 5

chr4:111672017-111672490

Alpl DAR 5 forward GTC ACT GAC CCA GCA ACT ATA GCC
Alpl DAR 5 reverse TCT AGG GTC AAT ATC CTG CCC A

Alpl DAR 6

chr4:111670556-111670909

Alpl DAR 6 forward TTG CTG TCC CAT CTG TAC CTG A
Alpl DAR 6 reverse TGG TGA CCT CTT AAC AAC AGA GTG GC

Alpl DAR 7

chr4:111672017-111672490

Alpl DAR 7 forward AGG CCA CTC ACC TCT GCA GTC
Alpl DAR 7 reverse GGA GGG TGG AGC TAG GGG TGA T

Alpl DAR 8

chr4:111670556-111670909

Alpl DAR 8 forward TCC CCT CCC TTT TGC TTT GTT TC
Alpl DAR 8 reverse GCA TTT CAA GGT GGC AGC CAG A