Nucleotide sequence of a cDNA encoding bovine brown fat uncoupling protein. Homology with ADP binding site of ADP/ATP carrier

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We report the cloning and sequencing of a cDNA for bovine mitochondrial uncoupling protein (pUCP-B24). Both strands were sequenced. The cDNA lacks the first aminoacids and encodes a 288 aminoacid protein whereas rodent protein has 306 residues (1). Stop codon and polyadenylation site are underlined. A sequence highly homologous to an ADP-binding site of bovine ADP/ATP carrier (2) is boxed. This cDNA has been used to detect UCP mRNA in bovines (3).

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6 ATC TTC TCG GCT GGG GTG GCG GCC TGC GTG GCT GAC ATA ATC ACC TTC CCG CTG GAC ACC GCC AAA GTC CGG CTA CAG ATC CAG
  I  F  S  A  G  V  A  A  C  V  A  D  I  I  T  F  P  L  D  T  A  K  V  R  L  Q  I  Q

  GGC GAA TGC CTG ATC TCC AGT GCC ATT AGG TAT AAA GGT GTC CTG GGA ACA ATC ATC ACT CTG GCA AAA ACA GAA GGG CCA GTG
   G  E  C  L  I  S  S  A  I  R  Y  K  G  V  L  G  T  I  I  T  L  A  K  T  E  G  P  V

  AAA CTC TAC AGT GGG CTG CCT GCT GGT CTC CAG AGA CAA ATA AGC TTG GCG TCT CTT AGG ATC GGC CTC TAT GAT ACT GTC CAG
   K  L  Y  S  G  L  P  A  G  L  Q  R  Q  I  S  L  A  S  L  R  I  G  L  Y  D  T  V  Q

  GAG TTC TTC ACC ACA GGG AAA GAA GCT AGT TTA GGA AGC AAG ATC TCA GCG GGC CTA ATG ACT GGA GGC GTG GCG GTG TTC ATT
   E  F  F  T  T  G  K  E  A  S  L  G  S  K  I  S  A  G  L  M  T  G  G  V  A  V  F  I

  GGG CAA CCC ACA GAG GTG GTC AAG GTC AGA CTG CAA GCT CAG AGC CAT CTG CAC GGT CCC AAA CCT CGA TAC ACT GGG ACT TAC
   G  Q  P  T  E  V  V  K  V  R  L  Q  A  Q  S  H  L  H  G  P  K  P  R  Y  T  G  T  Y

  AAT GCT TAC AGA ATT ATA GCA ACA ACA GAA GGC TTG ACG GGG CTT TGG AAA GGG ACA TCT CCC AAT CTG ACA ACC AAT GTC ATC
   N  A  Y  R  I  I  A  T  T  E  G  L  T  G  L  W  K  G  T  S  P  N  L  T  T  N  V  I

  ATC AAC TGT ACA GAG CTA GTA ACA TAT GAC CTA ATG AAG GAG GCC CTG GTG AAA AAC AAA CTA TTA GCA GAC GAT GTG CCC TGC
   I  N  C  T  E  L  V  T  Y  D  L  M  K  E  A  L  V  K  N  K  L  L  A  D  D  V  P  C

  CAC TTC GTG TCC GCT GTT GTT GCT GGA TTC TGC ACA ACG GTT CTG TCC TCT CCC GTG GAT GTG GTG AAA ACC CGA TTT GTT AAT
   H  F  V  S  A  V  V  A  G  F  C  T  T  V  L  S  S  P  V  D  V  V  K  T  R  F  V  N

  TCT TCA CCA GGA CAG AAC ACA AGT GTG CCC AAC TGT GCA ATG ATG ATG CTC ACT AGG GAA GGA CCG TCA GCT TTT TTC AAA GGA
   S  S  P  G  Q  N  T  S  V  P  N  C  A  M  M  M  L  T  R  E  G  P  S  A  F  F  K  G

  TTT GTA CCT TCC TTC TTG CGA CTG GGA TCC TGG AAC ATC ATG TTT GTG TGC TTC GAA CGA CTG AAG CAA GAA TTG ATG AAG TGC
   F  V  P  S  F  L  R  L  G  S  W  N  I  M  F  V  C  F  E  R  L  K  Q  E  L  M  K  C

  AGG CAC ACC ATG GAC TGC GCA ACC TAG TCCTCCTGGGAAGAAGACGGAACACACCAGTGGGGATCTTTGCTAACCAGATAATTTTAAAAAGCAAGCGAAATG
   R  H  T  M  D  C  A  T

  TCTCACTTTATTTCACCCAGATAAGGGAAATTCTGATAGAGAGTTCTGGACTATTTTTTTTCCAAGGGAAAATCACTATTTCCTATGATTTTTTATTCTACGTATTTTAAG
  GAAGGAAAGCAAAACATTCAGTGTAGACCCTGGCAAATGTAATATCCAGATTAAGCTACTGTACCTAATTGACTATTTAATTGGGGGGAGGGATTTTCTAGCCGAATATG
  AAGAGCCTTTAACTGTTTTAATTATTATTCAATTATTAATTGATGGAAAGGAAACAGAGTGAATACGCTTTATCAATACTTAAAACTAGTTCTTTTATTATTACTGTTAT
  CAGTTAATATATTCAATAAATATTCGTAATATCTCCTTAAAA
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