Nucleotide sequence of rat adipose hormone sensitive lipase cDNA

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Hormone sensitive lipase catalyzes the rate limiting step in triglyceride lipolysis, thereby resulting in fatty acid mobilization in adipose tissue. In addition, hormone sensitive lipase has cholesterol ester hydrolase activity and it presumably plays an important role in steriod production in steroidogenic tissues. We have isolated overlapping clones encoding hormone sensitive lipase from a rat adipose cell λgt11 cDNA library (1). We report here the complete nucleotide sequence of rat adipose hormone sensitive lipase cDNA. The 5'-untranslated, coding, and 3'-untranslated sequences are 615 nt, 2271 nt, and 339 nt, respectively. Two apparent polymorphisms that occur in the sequence are indicated by boxes and a putative polyadenylation signal is underlined.

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                                                                    1  GAAGAAACTCGTAATGGGGCTTGAG
  26  TGTGTGGGTAAGGAAGGGAACTGCTGAGCGTCCAGATTTCCCAGAACAAGAAGGACAAGTCCAAAGACAATAAACAAAGATAGGAGTTCATCGTTGAATACCTGGAAGGAA
 137  GAAGGAAGAGGGTGGGCAGCTTCTGGGATAGAGAAGCAGATTCTTTGGAGTTCAGGAGATTGGACTCCTAGATCCAGGAAAGAGGGCAAAAGCCATGGACAGTGGGTTTCT
 248  GATTCTGAAGAGGAGAGATAGGCAGGGGCTGCTTAGCCTGGGGCTTCGACTCCCAGCCGATAGGCAGAAAGAGGATGAGGCCCCAGACTTCTAGAAGACAAGGAGATAAAT
 359  TCCGAGGTGTGAGAGAGAAGATAATGGAAAGCTCCTGCATCTCCAGGAGGCTTGGAACAGACCGGTGAACCTGAGGAAGGAGAGGGCTACGGCTTTGGACTCCTGAATCTC
 470  CTGTATCTTGGCAGGGATGGTCCTCGGTTTGAATACTGGGTTGGGCCTAGGGAGAGAGAGGTAGGAGCTGTACCCCTGGGCCTGACAGAGCAAAGAGTAATCCCAGACCTT
 581  CCCATCTTCCCGCAGCCTCGGCATTCTCACACAGC ATG GAT TTA CGC ACA ATG ACA CAG TCG CTG GTG GCG CTC GCA GAA GAC AAC ATG GCC
 673  TTC TTC TCA AGC CAG GGC CCA GGA GAG ACA GCA CGG CGG CTG TCC AA[G] GTC TTT GCA GGT GTT CGG GAA CAG GCA CTG GGG CTA
 757  GAA CCA ACT CTA GGT CAG CTC TTG GGT GTG GCA CAC CAT TTC GAC CTG GAC ACT GAG ACA CCA GCC AAC GGA TAC CGT AGC TTG
 841  GTG CAC ACA GCT CGT TGC TGC CTG GCA CAC CTA CTA CAC AAA TCC CGC TAT GTG GCC TCT AAC CGC AGA AGT ATC TTC TTC CGT
 925  GCC AGC CAC AAC CTA GCA GAA CTG GAG GCC TAC CTG GCT GCC CTC ACC CAG CTC CGT GCT CTA GCC TAC TAC GCC CAG CGC CTG
1009  CTG ACC ATC AAC CGA CCA GGA GTG CTC TTC TTT GAG GGC GAT GAG GGA CTC AGC GCT GAC TTC CTA CAG GAC TAT GTC ACG CTA
1093  CAT AAA GGC TGC TTT TAC GGT CGC TGC CTG GGC TTC CAG TTC ACA CCT GCC ATC CGG CCG TTC CTG CAG ACT CTC TCC ATC GGG
1177  CTG GTG TCC TTC GGG GAA CAC TAC AAA CGC AAC GAG ACG GGC CTC AGT GTG ACT GCA AGT TCC CTC TTT ACG GGT GGC CGA TTC
1261  GCC ATA GAC CCA GAG TTG CGT GGG GCT GAA TTT GAG CGC ATC ATA CAG AAC CTG GAC GTG CAC TTC TGG AAA GCC TTC TGG AAT
1345  ATC ACG GAG ATC GAG GTG CTA TCG TCT CTG GCC AAC ATG GCA TCA ACC ACC GTG AGG GTA AGC CGC CTG CTT AGC TTG CCG CCT
1429  GAG GCC TTT GAG ATG CCA CTA ACC TCT GAC CCC AAG CTC ACA GTT ACC ATC TCA CCT CCC TTG GCA CAC ACG GGA CCA GGC CCT
1513  GTG CTA GCC AGG CTC ATC TCC TAT GAC CTG CGG GAA GGG CAG GAC AGC AAG ATG CTC AAC AGC CTG GCA AAA TCT GAG GGC CCA
1597  CGC CTG GAG CTG CGC CCA CGG CCT CAA CAA GCC CCC CGC TCA CGA GCC CTG GTT GTC CAC ATT CAC GGT GGT GGC TTT GTG GCA
1681  CAG ACC TCC AAA TCC CAT GAG CCC TAC CTC AAG AAC TGG GCC CAG GAG CTA GGC GTC CCC ATC ATC TCC ATC GAC TAC TCC CTG
1765  GCC CCT GAG GCC CCC TTC CCC CGA GCA CTG GAG GAG TGT TTT TTT GCC TAC TAC TGC TGG GCT GTC AAG CAC TGT CTT GGT
1849  TCA ACC GGA GAG CGG ATA TGC CTT GCG GGG GAC AGC GCA GGT GGG AAC CTC TGC ATC ACC GTG TCC CTT CGG GCA GCA GCC TAT
1933  GGG GTG AGG GTG CCA GAT GGC ATC ATG GCA GCC TAC CCA GTT ACC ACC CTG CAG TCC TCT GCT TCT CCC TCT CGT CTG CTG AGC
2017  CTC ATG GAT CCT CTT CTA CCA CTG AGC GTA CTC TCC AAG TGT GTG AGC GCC TAT TCA GGG ACA GAG ACG AGG GAC CAT TTT GAC
2101  TCA GAC CAG AAG GCA TTG GGC GTG ATG GGG CTG GTG CAG AGA GAC ACG TCC CTG TTC CTC AGA GAC CTC CGC CTG GGC GCC TCC
2185  TCA TGG CTC AAC TCC TTC CTG GAG TTA AGT GGG CGC AAG CCC CAT AAG ACC CCA GTT GCC [T]GC AAC AGA GAC ACT GCG CCC CAC
2269  GGA TTC TGG GCG CTT ACG GAG TCT ATG CGC AGG AGT GTG TCT GAG GCA GCC CTG GCC CAG CCT GAG GGC TTG CTG GGC ACA GAT
2353  TCC TTG AAG AAG CTA ACA ATA AAG GAC TTG AGC TTT AAG GGC AAC TCA GAG CCA TCA GAC AGC CCC GAG ATG TCA CAG TCA ATG
2437  GAG ACA CTT GGC CCC TCC ACA CCC TCG GAT GTC AAC TTT TTT CTG CGA TCC GGG AAT TCC CAG GAA GAG GCT GAA ACC AGA GAT
2521  GAT ATA AGC CCC ATG GAC GGA ATC CCC CGC GTG CGC GCT GCC TTC CCT GAT GGT TTC CAC CCA CGG CGC TCA AGC CAA GGT GTC
2605  CTC CAC ATG CCC CTC TAC TCG TCA CCC ATA GTC AAG AAC CCC TTC ATG TCT CCT CTG CTG GCC CCT GAC GTC ATG CTG AAG ACC
2689  CTG CCG CCC GTG CAC CTT GTG GCG TGC GCT CTG GAC CCC ATG CTG GAT GAC TCG GTC ATG TTC GCG CGG CGA CTG AAG GAC CTG
2773  GGC CAG CCC GTG ACG CTG AAA GTG GTA GAG GAC CTG CCG CAT GGT TTC CTG AGC TTA GCA GCC CTG TGT CGT GAG ACC GGC AGG
2857  CCG CGG AGT TGT GCG TGC AGC GCA TCC GGC TGA TCCTCACCCCCCCTGCTGCACCGCTGACCTGAGCTGGGAACGGCGGGGGGCGCACTAAAAGACCTC
2957  TTGCACCCTTCTGCGCGGGCTTCCGTGATGAGTGCGCTCCGAGTCGGGCTCTAGGCCCCCTCGGTCGGGCTGGGCGGGAGGGGGCGGGCCGTGCCTTAACCATAAGTGGGG
3068  CGGGGCAGGGGCCAAAAGCTGAACCTGGGGGAGGGGGACGCACACACACACACCTGTCACCGAGACAGCTGGACCTGCACTCTACCACTGCCTTCTACTGCTGCTGTGACC
3179  GACCACCGCTAGTCGGTTTTGCTTTTTGTA_AATAAA_AGTTATTTAAT
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Reference

1. Holm, C., Kirchgessner, T.G., Svenson, K.L., Fredrikson, G., Nilsson, S., Miller, C.G., Shively, J.E., Heinzmann, C., Sparkes, R.S., Mohandas, T., Lusis, A.J., Belfrage, P., and Schotz, M.C. (1988) Science, in press.