**Supplementary Table 1.** Antisense oligonucleotides for in situ hybridization analysis.

| mRNA | GenBank Accession number | Sequence |
|------|--------------------------|----------|
| AgRP | AF206017                 | 5'-CGACGCGGAGAAGAGACTCGCGGGTTCTGTGAGATCTAGCACCTCTGCC-3' |
| CART | M29712                   | 5'-CCGAAGGGGCTGTCACCCCTCACA-3' |
| FAS  | NM_017332                | 5'-GGGTCCATTGTTGTGCTGCTTGGGCGT-3' |
| NPY  | M20373                   | 5'-AGATGAGATGTGGGGAACACTAGGAAAGTCAGGAGAGCAAGTTCATT-3' |
| POMC | AF510391                 | 5'-CTTGATGATGCGCTTCTTGAAGAGCGTACCAGGCGGTCTGCTTT-3' |

**Supplementary Table 2.** Primers and probes for real-time PCR (TaqMan®) analysis

| mRNA | GenBank Accession number | Sequence |
|------|--------------------------|----------|
| HPRT | NM_012583                | Fw Primer: 5'-AGCGACCAGCGGTCTGTG-3'  |
|      |                          | Rv Primer: 5'-GGTCATAACCTGGTTCATC-3'  |
|      |                          | Probe: TGCTGATCAGTTCTCTCAGGATCTATC-3'-TAMRA |
| PGC1α| NM_031347                | Fw Primer: 5'-CGATCCACCATATTCCAGGTC-3' |
|      |                          | Rv Primer: 5'-CGATGCTGCGGTGCTGCTT-3' |
|      |                          | Probe: GGCCAGCTTTGATCAGTTCTCTCAGG-3' |
| PGC1β| NM_176075                | Assay ID: Applied Biosystems TaqMan® Gene Expression Assays Assay ID Rn00598552_m1 |
| UCP1 | NM_012682                | Fw Primer: 5'-CAATGACCAGATGACCAAGGAA-3' |
|      |                          | Rv Primer: 5'-GATCGAGTCGGCGAAAGA-3' |
|      |                          | Probe: FAM-5'-ACCAGAGCGCTTTTCAAAGGTTTG-3'-TAMRA |
Supplementary Figure 1. Effects of nicotine administration on AMPK pathway in liver and muscle. Western blot analysis of the different proteins of the AMPK pathway in (A) liver and (B) muscle of vehicle and nicotine treated rats for 48 hours. All data are expressed as mean±SEM.