

ADDITIONAL METHODS

RFLP analysis

To confirm the allele-specificity of *p57* expression, cDNAs from MyoD-infected polymorphic fibroblasts (C57BL/6 x SD7) were amplified by semiquantitative PCR with the following primers:

F: 5'-TTCAGATCTGACCTCAGACCC-3'

R: 5'-AGTTCTCTTGCGCTTGGC-3'.

Maternal and paternal products were distinguished by AVA I (Promega) digestion of a previously described polymorphic restriction site for this enzyme (Battistelli et al., 2014).

Methylated DNA Immunoprecipitation (MeDIP) assays

Genomic DNA was extracted, purified and sonicated in order to obtain fragments of a length in a range of 300-600 bp. 6 µg of sonicated DNA was re-suspended in 500 µL of Ip Buffer [Immunoprecipitation Buffer (NaCl 140mM, Triton X-100 0.05%, sodium phosphate 10mM pH=7)]. The denaturation of DNA was performed 5 minutes at 95 °C and the incubation with 5 µg of mouse anti 5-Methylcytidine antibody (Bi-Mecy 0100, Eurogentec) or with anti normal mouse IgG antibody (12-371, Merk Millipore) over-night at 4°C. 40 µL of protein G magnetic beads were added to samples and incubated 4 hours at 4 °C. The supernatant of the IgG sample was taken as Input and beads were washed 3 times with Ip Buffer. After washes samples were incubated for 2 hours at 56 °C and overnight at 37°C with proteinase K (Sigma-Aldrich). The extraction of DNA was performed with phenol-chloroform solution, precipitated with ethanol and the pellet of DNA was re-suspended in 50 µl of nuclease-free distilled water. qPCR analyses of immunoprecipitated maternal and paternal *p57* intragenic region and, as negative control, for of the *Translocase of inner mitochondrial membrane 17 (Timm)* were performed each in triplicate using 5 ng of DNA, GoTaq qPCR Master Mix (Promega) using the thermocycler “CFX Connect Real Time system” (Bio-Rad) and the following set of primers:

Maternal *p57* F: 5'- CAGATCTGACCTCAGACCCG-3'

R: 5'- GACCTGTTCTCGCCATCCT-3';

Paternal *p57* F: 5'-AACTTCCAGCAGGATGTGCC-3'

R: 5'-CATCCACTGCAGACGACCAG-3';

Timm prom: F: 5'-ACGGATGTGGCCCTTCTGGCT-3'

R: 5'-CCGCTGCGAAACGCCCACAA-3'.