

P4010 Everything matters in a promoter. New insights on the ovine *HSP90AA1* gene regulation. Judit Salces-Ortiz and Carmen González (nstituto Nacional de Investigación y Tecnología Agraria y Alimentaria (INIA)), Alfonso Bolado-Carrancio (Department of Molecular Biology), JC Rodríguez-Rey (2Department of Molecular Biology) and M. Magdalena Serrano (nstituto Nacional de Investigación y Tecnología Agraria y Alimentaria (INIA))

Polymorphisms at the *HSP90AA1* ovine gene, which encodes the Hsp90 α chaperone, have been related with the *scrapie* incubation period, the adaptation to this specie to differential thermal conditions and the sperm DNA fragmentation rate. All these facts are consequence of the differences in the gene expression rate caused by some of the polymorphisms existing at its promoter. The region between -1500 and -250bp before the transcription start site (TSS) contains the main core of the regulation of the gene and is highly polymorphic (14 polymorphisms). Therefore it has been deeply studied in this work by three different approaches. a) - By studying the methylation pattern of this region and its relationship with the previously detected SNPs. It has been enclosed for the first time in the ovine HSP90AA1 gene the limits of its promoter which has previously described with a typical core promoter of TATA box, even so a different promoter pattern has also been observed. This characteristic can be the responsible of a more dispersed initiation of transcription and could be the clue of the differences of expression patterns. b) - By studying the differences of joining affinity of the transcription factors (TF) to a sequence where a SNP, INDEL or a methyl group is located. Using EMSA analysis, we studied the SNPs independently. This is possible even for those SNPs that cosegregate together. c) -By in vitro expression assays of the promoter region, using the luciferase reporter gene. It permitted us to quantify the exact differences of in vitro transcription, based on only one change in the sequence of the promoter that allows or blocks the joining of transcription activators or repressors.



ISAG 34th
XI'AN 2014

ABSTRACT

2014.7.27 - 8.1

**The 34th International Society for
Animal Genetics Conference**