

**Characterization of the ovine lipoprotein lipase (LPL), Scavenger Receptor BI (SCARB1) and alpha-tocopherol transfer protein (TTPA) genes: it is role in vitamin E content**

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Vitamin E is the collective name for a group of fat-soluble compounds with distinctive antioxidant activities. Antioxidants protect cells from the damaging effects of free radicals, which damage cells and might contribute to the development of cardiovascular disease and cancer. Furthermore, antioxidants increase shelf life of animal products improving colour and fat stability. To obtain this effect vitamin E can be added directly to meat or milk, but this may not be acceptable to consumers, or included in animals' diets. LPL, SCARB1 and TTPA in the metabolism of vitamin E. This work focuses on the characterization and evaluation of LPL, SCARB1 and TTPA as a candidate genes related to the vitamin E content. Genomic DNA from animals with extreme values for the vitamin E content (n=4, Rasa aragonesa) and four domestic sheep breeds (Churra Tensina, Assaf, Manchega, Churra) was used to search polymorphisms. Studies of putative regulatory elements within the promoter and potential target sites for miRNA within the 3' UTR regions were performed using TF Search and microinspector softwares. Promoter region of LPL was isolated finding a SNP affecting a CdxA and Tst-1 consensus sites. The total coding region sequence, UTRs and promoter regions of SCARB1 and TTPA genes were isolated. In SCARB1 14 SNPs were isolated: 5 conservative SNPs in the coding region, 5 SNPs in the UTRs, and 7 intronic polymorphisms. For TTPA, 6 polymorphisms were identified: 1 conservative SNP (exon 2), 1 Leucine for Phenilalanine substitution SNP (exon 5), and 4 intronic polymorphisms. Finally, the specific expression of these genes in two groups of animals with extreme values for vitamin E content was investigated by RT-PCR.