
Poster

Identification of CSN1S1 polymorphisms in Malagueña goat stallions to improve the dairy production



Purificación Jiménez Martín (1) y Víctor Álvarez Tallada (1,*)

(1) Departamento de Genética/Centro Andaluz de Biología del Desarrollo (CABD), Carretera de Utrera km 1, 41013 Sevilla.

Keywords: α -S1-casein; Malagueña goat; polymorphisms

ABSTRACT

Motivation: Alpha-S1-casein is one of the most abundant proteins in milk of ruminants, and the extensive polymorphisms at CNS1S1 locus not only affect the quantity, but also the quality of milk (Martin et al. 2002). Up to 18 polymorphisms have been identified at CNS1S1 locus and have been classified into 4 groups based on milk production (high, medium, low, null) (Caravaca et al. 2008). Currently, there is a program to improve the Malagueña Goat breed, whose purpose is the selection of individuals based on different criteria, including the optimization of dairy production (Serradilla, 2012). One of the most important characteristic of Malagueña goat is the high milk production, both in quantity and quality; thus, our objective is to identify individuals with a favorable allelic combination to select those stallions with a value suitable for reproduction. Genotyping of 77 stallions will provide advice on best individuals for insemination in the improvement program.

Methods: Genomic DNA is obtained from blood samples. After DNA extraction, three levels of diagnostic PCRs will be performed in a progressive order based on the results obtained in each level. The results of the diagnostic PCRs will be analyzed by gel electrophoresis, obtaining the final results according to the size of fragment expected for each polymorphism (Ramuno et al. 2000; Cosenza et al. 2003; Caravaca et al. 2008).

REFERENCES

- Ramuno, L. et al. (2000) Identification of the goat CSN1S1 F allele by means of PCR-RFLP method. *Animal Genetics*, 31, 333–346.
- Martin, et al. (2002) The impact of genetic polymorphisms on the protein composition of ruminant milks. *Reproduction Nutrition Development*. 42, 433
- Cosenza, G. et al. (2003) Molecular characterization of the goat CSN1S1 01 allele. *J. of dairy Research*, 70(2), 237-240.
- Caravaca, F. (2008) Effect of α S1-casein (CSN1S1) genotype on milk CSN1S1 content in Malagueña and Murciano-Granadina goats. *J. of dairy Research*, 75, 481-484.
- Serradilla, J.M. (2012) Programa de mejora de la raza caprina malagueña. Departamento de producción animal, Universidad de Córdoba. Ministerio de Agricultura, Alimentación y Medio Ambiente.