OMICS International
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Francesco Napolitano, J Veterinar Sci Technolo 2015, 6:5
http://dx.doi.org/10.4172/2157-7579.C1.009

Global Veterinary Summit

August 31- September 02, 2015 Orlando-FL, USA

Gelsolin expression in sheep mammary gland

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Gelsolin (GSN) is representative of a class of actin-modulating proteins found in lower eukaryotes through mammals acting both as an intrinsic cytoplasmic protein and as a secreted plasma protein. In mammalian three main gelsolin isoforms have been characterized: The isoform a, which is 782-amino acid secretory protein; isoform b, which is 731-amino acid cytosolic protein and isoform c or gelsolin-3, which is 742-amino acid protein localized primarily in the central nervous system. All isoforms arise by alternative splicing from the same gene. The cytoplasmic and secreted forms of gelsolin are the most potent actin filament-severing proteins. Actin, one of major components of the cytoskeleton, plays important roles in the cells eliciting cell shape and organization. Actin is pivotal to a set of processes that involve motility and/or structural rearrangement within cells, example cell migration, development, morphogenesis, metastasis, cell-cell and cell-matrix adhesion and apoptosis. Our study produced evidence of the differential expression of gelsolin isoform b in milk somatic cells of sheep breeds highly different in milk production traits and we speculated about a possible association of the protein with milk fat globule movement inside mammary gland epithelial cells.

Biography

Francesco Napolitano has completed his PhD in Animal Production Sciences in July 1990, Faculty of Agriculture at University of Naples, Italy. He worked as a Senior Researcher at the Animal Production Research Centre (Council for Agricultural Research and Economics, CRA). He was the responsible person for scientific project "Improvement of the Italian livestock through advanced tools of genomics, transcriptomics and proteomics-GENZOOT" (2006-2015). He has published more than 20 papers in the last five years.

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