

Lamy E, da Costa G, Santos R, Capela e Silva F, Potes J, Pereira A, Coelho AV, Sales Baptista E. Sheep and goat saliva proteome analysis: A useful tool for ingestive behavior research? *Physiology & Behavior* 2009; **98**: 393-401.

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Abstract

Sheep and goats differ in diet selection, which may reflect different abilities to deal with the ingestion of plant secondary metabolites. Although saliva provides a basis for immediate oral information via sensory cues and also a mechanism for detoxification, our understanding of the role of saliva in the pre-gastric control of the intake of herbivores is rudimentary. Salivary proteins have important biological functions, but despite their significance, their expression patterns in sheep and goats have been little studied. Protein separation techniques coupled to mass spectrometry based techniques have been used to obtain an extensive comprehension of human saliva protein composition but far fewer studies have been undertaken on animals' saliva. We used two-dimensional electrophoresis gel analysis to compare sheep and goats parotid saliva proteome. Matrix-assisted laser desorption ionization-time of flight (MALDI-TOF) and liquid chromatography tandem mass spectrometry (LC-MS/MS) were used to identify proteins. From a total of 260 sheep and 205 goat saliva protein spots, 117 and 106 were identified, respectively. A high proportion of serum proteins were found in both salivary protein profiles. Major differences between the two species were detected for proteins within the range of 25–35 kDa. This study presents the parotid saliva proteome of sheep and goat and highlights the potential of proteomics for investigation relating to intake behavior research.

Keywords: Feeding behavior; Goat; Mass spectrometry; Proteome; Salivary proteins; Sheep; Two-dimensional gel electrophoresis