

Research project IZS VE 01/12

Exploring metabolomics as a novel approach for discriminating samples derived from animals treated with growth promoters: standardization of a protocol for the analytical method and for a statistical multivariate analysis

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Novel approaches based on “omics” science may represent the tools of the future not only in human medicine, where they have been successfully adopted to identify tumoral biomarkers, but also in the area of food safety and food quality to control possible illicit veterinary treatments or to monitor specific characteristics of certain commodities. Beside proteomics and genomics, now also metabolomics is demonstrating to be a powerful tool to screen samples within these purposes.

By means of this project we intend to develop and standardize a scientific protocol for sample preparation and instrumental analyses based on HPLC-HRMS (high performance liquid chromatography - high resolution mass spectrometry) to collect robust series of data which, combined with multivariate statistics, may help to discriminate animals treated with growth-promoters from non treated ones. The availability in our labs of several biological samples derived from previous experimental in vivo-studies aimed at evaluating the residual levels of growth promoters like β -agonists, corticosteroids, and steroids represents the great advantage in terms of reduced economic impact of this study.