



RIKILT

WAGENINGEN UR

High Temperature Liquid Chromatography-Mass Spectrometry for the analysis of anabolic agents



Supervisor:

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Cluster:

Growth promotors

Date:

3–12 months

Project description

Natural hormones (e.g. testosterone and estradiol) can be used as anabolic agents in animals used for human consumption. The use of growth promotors is illegal according to EU laws. Using conventional gas- or liquid chromatography (GC/LC) techniques, endogenous hormones cannot be distinguished from illegally administered (natural) hormones. This is, however, possible with isotope ratio mass spectrometry (IRMS), which determines the ratio of ^{13}C and ^{12}C isotopes. For component specific analyses IRMS is usually coupled to GC, but recently also an LC interface was developed. With LC-IRMS, however, no organic solvents can be used because it disturbs the isotope ratio the analytes of interest. Alternatively, ion exchange LC using a salt gradient or high temperature gradient LC with only water as solvent can be used. The goal of this project is to develop a HT-LC-(IR)MS method for the analysis of natural hormones in cattle.

Candidate requirements

Requirements

This project requires a well-motivated and versatile BSc or MSc student with a background in analytical chemistry or food science who is able to find creative solutions to a challenging chemical problem. Depending on the particular interest and level (BSc/MSc) of the candidate, the duration and the description of work will be further decided upon.

What we offer

Expert guidance during the internship. Next to that a monthly internship compensation of € 295,--.