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Risk-orientated veterinary drug testing

Multi-class analysis allows simultaneous analysis of up to 100 actives

Veterinary drugs are used within animal husbandry not only to cure and prevent diseases, but also to increase weight gain and tranquilise during transportation. The groups of veterinary drugs mainly used are antibiotics and antiparasitic agents. Unwanted side-effects of antibiotic use are the development of resistance and the potential for allergies.

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Our analysis at a glance

Experts from the Eurofins Competence Centre for Veterinary Drug Analysis established an analytical method for the simultaneous determination of over 100 veterinary drugs from 10 different antibiotic and antiparasitic substance classes.

Samples are analysed after **simple and rapid extraction** via LC-MS/MS. Due to measuring in the Multiple-Reaction-Monitoring-Modus (MRM-Modus), we are able to offer **selective detection** and **low limits of quantification**. This method is validated for poultry meat and reaches coefficients of variation ≤ 10 %. Compared to the conventional individual group analysis, the actual **duration of analysis** has been significantly reduced and is now in the area of a couple of hours only. At the same time, the **use of chemicals** has also been **lowered drastically**.
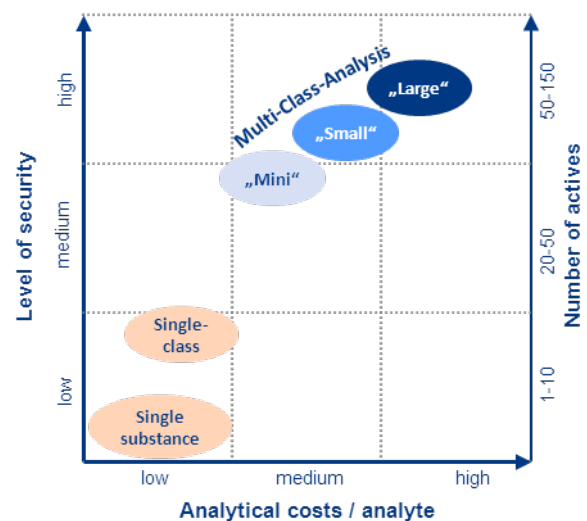
In the spotlight: antibiotics & antiparasitics

The following substance classes are part of the test scope:

- avermectins
- amphenicoles
- benzimidazoles
- quinolones
- ß-lactames
- macrolides
- nitroimidazoles
- sulfonamides
- tetracyclines
- triphenylmethane dyes

Risk-orientated scopes: *Large, Small, Mini*

Not all of the veterinary drugs are of equal importance or relevance for risk monitoring. In fact, the relevance of certain actives depends on the specific matrix, country of origin and the stage of sampling within the food supply chain. Based on evaluations of the European Rapid Alert Systems for Food and Feed (RASFF) and Eurofins´ in-depth experience, the actives included in the overall analytical scope were classified according to their relevance, resulting in three different Multi-Class-Analyses of combined analytes for the commodities meat and fish namely "Large", "Small" and "Mini":

The Multi-Class-Analysis "Large" contains approximately 90 analytes per matrix, includes almost the complete spectrum of active compounds, offers optimal safety and would be a reasonable choice for samples with unknown origin. The Multi-Class-Analysis "Small" covers well over 40 analytes, and the Multi-Class-Analysis "Mini" 30 active substances. However, the risk-orientated selection of the substances in the smaller scope provides a comparatively high level of safety at reduced costs. An extremely high level of food safety can be ensured by cleverly combining the different analytical groups.

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