

## **PROJECT REVIEW**

### ***"Clenbuterol in meat. Development of a decision model for the discrimination between contaminated meat and pharmaceutical preparations. Part 2"***

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Several elite athletes were tested positive for clenbuterol and claimed that these findings were caused by the consumption of meat containing clenbuterol. From several studies and EU monitoring programs it is shown that clenbuterol may be present in meat and after consumption of meat concentrations of clenbuterol in urine can be found. To discriminate between clenbuterol administered via a pharmaceutical preparation or by ingestion of contaminated meat products research was started in 2012 (WADA 11A18SS). The focus of this study was to determine if there was a difference between the ratio of the two enantiomers (left- and right-- hand form of clenbuterol) in meat, and if after consumption of meat there was a difference between the ratio of the two enantiomers in urine when compared to the ratio in urine after illegal oral administration of preparations to humans.

In 11A18SS the proof is given that the hypothesis is feasible and the analytical methods are in place and capable to detect the differences. In the proposed project the focus will be on establishing a relation between the consumption of contaminated meat and a change in ratio of clenbuterol enantiomers in urine via a controlled experiment. The project will result in a decision model that can be used to assess the source of an adverse analytical finding for clenbuterol. A new technique focusing on untargeted analyses will also be tested on the acquired samples. This will take into account if there are any other changes in metabolic profiles after both ways of ingestion and will try to discriminate on this basis. This technique is known as metabolomics.