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# DOPING CONTROL ANALYSIS OF 121 PROHIBITED SUBSTANCES IN EQUINE HAIR BY LIQUID CHROMATOGRAPHY-TANDEM MASS SPECTROMETRY

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## GRAPHICAL ABSTRACT



## Highlights

### *Doping control analysis of 121 prohibited substances in equine hair by liquid chromatography-tandem mass spectrometry*

- Detection of 121 drug analytes in equine hair;
- Mane hair is collected, pulverised and processed by solid-phase extraction;
- The 121 drug analytes are detected by liquid chromatography-tandem mass spectrometry using UHPLC for separation and analysis by selected reaction monitoring;
- The estimated limits of detection for the 121 drug analytes are in the range of 0.1 to 10 pg/mg;
- The method has been validated for its specificity, precision and method recovery;
- Soaked quality control samples are recommended to be prepared and analysed in parallel with each analysis;
- Preparation of soaked hair samples with basic drugs are best carried out using a 1:1 mixture of DMSO:water;
- The method has been able to detect the presence of clenbuterol, 2-(1-hydroxyethyl) promazine sulfoxide, acepromazine and tetrahydrozoline in genuine equine mane samples.

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