

A COMPARISON OF DERIVATIVES OF ANABOLIC STEROIDS FOR DETECTION BY GC/MS.

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Anabolic steroids, both endogenous and exogenous, and their metabolites are found in urine at nanogram per millilitre concentrations. Therefore analytical methods need to be highly selective and sensitive. Derivatisation is used to increase sensitivity and stability, to facilitate chromatography and to enhance mass spectra in many types of compounds.

There has been a variety of derivatives used for the analysis of anabolic steroids. Derivatives of anabolic steroids with ketones that use methoxamine or hydroxamine form *syn*- and *anti*- isomers which may reduce sensitivity. This study aims to determine the most suitable derivative for use in the analysis of equine and canine urine.

The following derivatives were examined;

- Hydroxamine tert-butyldimethylsilyl (TBDMS)
- Enolised tert-butyldimethylsilyl (TBDMS)
- Enolised trimethylsilyl (TMS)
- Heptafluorobuturate (HFB)

Testosterone, nandrolone, boldenone, 5 α -estrane-3 β ,17 α -diol, 16-hydroxystanozolol and 3-hydroxystanozolol were used to assess the suitability of the derivatives. Assessment was made on response, selectivity, cost, matrix interferences and ease of use.

The results of this comparative study will be presented in an oral presentation.
