

## PROJECT REVIEW

### *“In vitro generation of <sup>34</sup>S-labelled steroid sulfates as reference material”*

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In anti-doping control, the detection of steroid conjugates is of increasing relevance. The wide detection window of certain conjugates in combination with efficient and highly sensitive LC-MS technology enables a prolonged traceability of hormone misuse. The reliable quantitation of steroid conjugates requires isotope-labelled reference materials, which are only available for a minority of doping relevant conjugates. An approach to generate steroid sulfates is the in vitro incubation with human liver S9 fraction.

The objective of the present study is to produce isotope-labelled steroid sulfates in vitro. This will be accomplished by the incubation of relevant steroids or their metabolites with liver S9 fraction and <sup>34</sup>S-sodium sulfate. The in vitro generated reference material can be directly used for dilute-and-shoot quantification of the respective steroid sulfates in human urine samples. Moreover, the established approach could be rapidly expanded to comparable steroids and methods or materials may be shared with other WADA accredited laboratories.