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Isotope Dilution LC-ESI-MS/MS and low resolution Selected Reaction Monitoring as a tool for the accurate quantification of urinary testosterone

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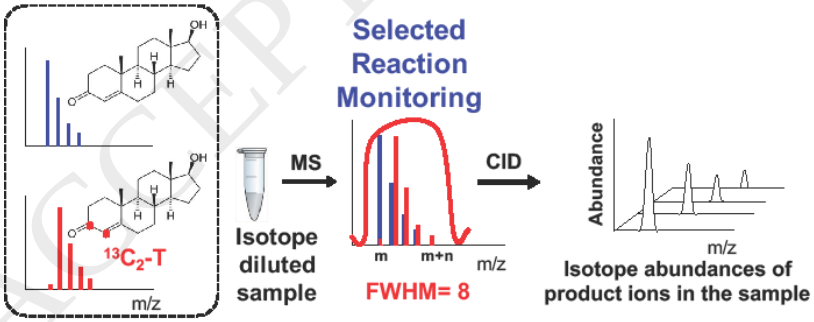
Highlights

- Testosterone quantification in urine by isotope dilution without calibration graphs
- Low resolution Selected Reaction Monitoring to measure isotope distributions
- Minimally $_{13}$C labelled testosterone to decrease isotope effects
- Satisfactory accuracy and precision to detect testosterone in different challenging
- scenarios
- Higher sensitivity over standard resolution approaches.

Graphical abstract



ABSTRACT

A new analytical method for the quantification of testosterone in human urine samples by isotope dilution mass spectrometry is proposed. A standard solution of $^{13}C_2$-testosterone is added to the samples at the beginning of the sample preparation procedure and then the measurements are carried out by UHPLC-ESI-MS/MS. In the