Quantification of antiepileptics in human plasma or serum by liquid chromatography-tandem mass spectrometry for clinical research

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ABSTRACT

Purpose

An analytical method for clinical research for the quantification of 25 antiepileptics in human plasma or serum was reported. Plasma or serum samples are extracted by off-line liquid-liquid extraction and subsequently transferred to a Thermo Scientific™ QuanChrom™ triple quadrupole mass spectrometer with heated electrospray ionization. Detection is performed by selected reaction monitoring (SRM) using a quadrupole ion trap mass spectrometer. 

Methods

Reagents for method implementation and evaluation included four calibrators (blank), and two controls from RECIPE. Calibration samples were prepared in 100 µl of precipitation solution containing the internal standards. Precipitated samples were centrifuged, and the supernatant was transferred to a clean plate or vial. Chromatographic separation was achieved using analytical column and mobile phase provided by RECIPE. Analytes and internal standards were detected by SRM on a TSQ Quanta triple quadrupole mass spectrometer with heated electrospray ionization operated in polarity switching mode. 

RESULTS

The inter-assay mean accuracy (bias) and precision (CV%) for the used control samples. RECIPE MS5002 batch #096 are reported in Table 4. The mean bias was always below 11% and the CV% was below 13.4% for all analytes.

ACKNOWLEDGEMENTS

We would like to thank RECIPE, Chemisches-Instrumenten-GmbH and especially Katharina Kern for providing the kit and support on the development and implementation of the method.

TRADEMARKS/LICENSING

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