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## **Matrix effects marker for multianalyte analysis of glucocorticoids and diuretics by LC-MS/MS in biological samples.**

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### **Abstract**

Matrix effects (ion suppression/enhancement) are a well-observed phenomenon in analysis of biological matrices by high-performance liquid chromatography-mass spectrometry (HPLC-MS). However, scarcely simple solutions to detect and minimise these adverse effects have been described so far in multianalyte analysis, especially in the field of doping control. In this study, an exhaustive characterization of matrix effects in one hundred urine samples fortified with 42 analytes (glucocorticoids and diuretics) is described. A novel marker to identify samples where the reliability of the results is compromised because of acute ion suppression is introduced. This new strategy strengthens the analysis rigor for screening purposes. Once the matrix effect is identified, the use of a selective sample preparation is introduced to minimise the adverse ion suppression effect. That selective extraction together with the use of a deuterated internal standard permits to enhance the ruggedness of the estimation of glucocorticoids concentration in urine.

For the complete paper, please refer to:

Tudela E, Muñoz G, Muñoz-Guerra J A. (2012) Matrix effect marker for multianalyte analysis by LC-MS/MS in biological samples. *J. Chromatogr. B* **901**, 98-106.