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Handling of highly coeluted chromatographic peaks by multivariate curve resolution for a complex bioanalytical problem: Quantitation of selected corticosteroids and mycophenolic acid in human plasma

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Abstract:

The present study describes the analytical performance of a fast-elution protocol and smart methodology based on multivariate curve resolution-alternating least square (MCR-ALS) modeling of high performance liquid chromatography with photodiode-array detection (HPLC-DAD) data for simultaneous determination of prednisolone (Predl), methylprednisolone (Mpredl) and mycophenolic acid (MPA) in plasma samples. The LC method optimized at two isocratic reverse phase over a symmetric C18 column, a 60:40 (v/v) mixture of acetonitrile and water (0.02 M KH₂PO₄ (pH=3.7) buffer solution) and a 10:70:20 (v/v/v) mixture of acetonitrile, methanol and water. The most challenges in the present study were the severe coelution of analytes of interest with each other and the matrix interferences, and high spectral similarity of

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