عنوان مقاله:

Simultaneous Spectrophotometric Determination of Mycophenolate Mofetil and Its Active Metabolite in Human Plasma Using Chemometrics Methods

محل انتشار:

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خلاصه مقاله:

A spectrophotometric method for selective complexation reaction and simultaneous determination of mycophenolate mofetil (MPM), and mycophenolic acid (MPA) using three multivariate chemometric methods, i.e. partial least squares regression, principal component regression and principal component artificial neural networks, is proposed. The method is based on the complexation reaction of MPM and MPA with Fe(III) ion in the solution. A nonionic surfactant, Triton X-۱۰۰, was used for dissolving the complexes and intensifying the signals. The linear determination ranges for the determination of MPA and MPM were ۵.۰-۲۱۵.۰ mg l-۱, and ۱۰.۰-۱۰۰۰.۰ mg l-۱, respectively. The detection limit for MPA and MPM was obtained as ۰.۳ mg l-۱ and ۱.۱ mg l-۱, respectively. Satisfactory results were obtained by the combination of spectrophotometric method and chemometrics techniques. The method was successfully applied to the simultaneous determination of MPM and MPA in serum sample and the results were comparable with HPLC method.

کلمات کلیدی:

Mycophenolate mofetil, Mycophenolic acid, Simultaneous determination, Chemometric methods, Spectrophotometry