Journal of Chromatography B. Biomedical Sciences and Applications, vol.673, no.1, pp.27-33, November, 1995.

# Simultaneous determination of cortisol and cortisone in urine by reversed-phase high-performance liquid chromatography. Clinical and doping control applications

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**Abstract-**

**A reversed-phase high-performance liquid chromatography (HPLC) method for the simultaneous determination of cortisol and cortisone in human urine samples using methylprednisolone as the internal standard is described. The method involves the systematic use of isocratic mobile phases of water and methanol, acetonitrile or tetrahydrofuran and a reversed-phase Hypersil C18 column. A water-acetonitrile mixture used as the mobile phase proved to be the most adequate one for analyzing urine samples purified by solvent extraction. The proposed method is sensitive, reproducible and selective. It was applied to the determination of cortisol and cortisone in several human urine samples: healthy subjects, sportsmen before and/or after stress for doping control purposes, and patients with Cushing's syndrome.**

**Index Terms-**



**Citation:**
*Santos-Montes, A.; Gonzalo-Lumbreras, R.; Izquierdo-Hornillos, R. "Simultaneous determination of cortisol and cortisone in urine by reversed-phase high-performance liquid chromatography. Clinical and doping control applications", Journal of Chromatography B. Biomedical Sciences and Applications, vol.673, no.1, pp.27-33, November, 1995.*