

HPLC-蛍光検出による人尿中イミダゾール酢酸及び N^γ-及びN^π-メチルイミダゾール酢酸の同時定量

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Journal of Chromatography, 416, 63-69 (1987)

Simultaneous Determination of Imidazoleacetic Acid and N^γ-and N^π-Methylimidazoleacetic Acids in Human Urine by High-Performance Liquid Chromatography with Fluorescence Detection

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ABSTRACT: A sensitive method for the simultaneous determination of urinary imidazoleacetic acid and N^γ-and N^π-methylimidazoleacetic acids which employs high-performance liquid chromatography with fluorescence detection is described. The compounds were converted into the corresponding fluorescent esters by reaction with 4-bromomethyl-7-methoxycoumarin. These derivatives were separated by liquid chromatography on a Radial-Pak silica column. The detection limits for imidazoleacetic acid and N^γ-and N^π-methylimidazoleacetic acids in urine were 15, 10 and 20 pmol/ml, respectively. The 24-h urinary excretion of imidazoleacetic acid and N^γ-and N^π-methylimidazoleacetic acids by healthy persons was 5.7-39.9, 4.3-24.6 and 1.5-19.3 nmol/mg of creatinine, respectively.

抄録 HPLC-蛍光検出による人尿中イミダゾール酢酸及びN^γ-及びN^π-メチルイミダゾール酢酸の高感度な同時定量法を確立した。イミダゾール酢酸類を4-ブロモメチル-7-メトキシクマリンによって蛍光誘導体としたのち、シリカカラムを用いてHPLCで分離し、定量した。尿中イミダゾール酢酸、N^γ-及びN^π-メチルイミダゾール酢酸を測定したとき、検出限界はそれぞれ15、10及び20pmol/ml尿であり、それらの健常人の24時間尿中排泄量はそれぞれ5.7-39.9、4.3-24.6及び1.5-19.3nmol/mgクレアチニンであった。

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