

高速液体クロマトグラフィによる安息香酸および馬尿酸の重水素標識体分離

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Isotopic Fractionation of Benzoic Acid and Hippuric Acid from Their Deuterated Analogues by High Performance Liquid Chromatography

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Isotopic fractionation of benzoic acid (BA) and hippuric acid (HA) from their deuterated analogues (BA-d₅ and HA-d₅) were examined by high performance liquid chromatography (HPLC). Reversed-phase HPLC was used with C₁₈ column and MeOH-phosphoric acid solution mixture as mobile phase. The resolution coefficients between protio- and deuterio-forms were 1.22 for BA and 1.05 for HA, respectively.

The present method was applied to determine the urinary excretion of HA-d₅ in man after oral administration of BA-d₅. Two methods were examined for determination of HA-d₅. One was the measurement of BA-d₅ after hydrolysis of HA-d₅, and another was direct measurement of HA-d₅. Former method is superior to latter method in the separation of protio- and deuterio-forms, while, requires the complex procedures, conversion, extraction and evaporation. These isotopic fractionation of BA from BA-d₅ and HA from HA-d₅ by HPLC are simple and specific methods for determination of exogenous HA without the interference of endogenous HA.

安息香酸(BA)と馬尿酸(HA)についてそれらの重水素標識体(BA-d₅とHA-d₅)との同位体分離測定を高速液体クロマトグラフィ(HPLC)で検討した。逆相系C₁₈カラ

ムを用い、メタノールリン酸を移動相にして実施したところ、軽水素体と重水素標識体の分離係数はBAでは1.22、HAでは1.05を示した。本方法を重水素標識BA経口投与後の尿中標識HAの測定に応用してみた。その結果、本方法は内因性のHAの妨害を受けずに、投与物由来のHAが測定できる簡単で優れた方法であることが認められた。