

キャピラリーガスクロマトグラフィによるアミノピリンの重水素標識体分離と肝機能評価への応用

五郎丸 毅, 前田晴美, 松木洋子*, 際田弘志*

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Isotopic Fractionation of Aminopyrine from Its Deuterated Analogues and Application for Evaluation of Hepatic Function by Capillary Gas Chromatography

Tsuyoshi Goromaru, Harumi Maeda, Yōko Matsuki*
and Hiroshi Kiwada*

Abstract *Quantitative analysis of aminopyrine (AM) and its deuterated analogues (AM-d₆ and AM-d₉) were carried out by gas chromatography. The separation of protio- and deuterio-forms of AM was achieved by gas chromatography using a fused-silica capillary column (25m). The resolution coefficients between AM and deuterated AM were 1.05 for AM-d₆ and 1.52 for AM-d₉, respectively.*

The present isotopic fractionation procedure was applied to the isotope dilution analysis of AM. By the measurement of the samples prepared by the addition of known amount of AM and AM-d₉ to the control blood of rat, a linear relationship between peak area ratio and added amount ratio was observed. The correlation coefficients obtained by regression analysis was 0.9999.

The present method was applied to determine the blood level of AM in rat after i.v. injection of AM. The kinetic parameters of AM, V_d , k_{el} and total body clearance, were estimated from the time course of blood concentration of AM. The pretreatment with carbon tetrachloride or phenobarbital led to a significant change in the k_{el} and the clearance of AM. The present results indicate that this isotopic fractionation would be a suitable method for evaluation of hepatic function.

キャピラリーガスクロマトグラフィによる重水素標識アミノピリン(AM)と非標識AMとの分離測定を試みたところ、AM-d₉とAMとをほぼ完全に分離できることを認

めた。これを利用して同位体希釈分析を実施し、AM投与後のラットの血中濃度の時間推移からクリアランスを求めた。四塩化炭素およびフェノバルビタール前処理により、AMのクリアランスは鋭敏に変化し、肝機能の評価に利用できることを認めた。

* University of Tokushima 徳島大学