

グリチルリチンを添加したラット糞便懸濁液における グリチルリチン代謝物のセミマイクロHPLC同時定量法

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Simultaneous Determination of Glycyrrhizin Metabolites Formed by the Incubation of Glycyrrhizin with Rat Feces by Semi-micro High-Performance Liquid Chromatography

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ABSTRACT : A method for semi-micro high-performance Liquid chromatography (HPLC) has been established for the simultaneous determination of 3 α -hydroxyglycyrrhetic acid and 3-dehydroglycyrrhetic acid together with glycyrrhizin, glycyrrhetic acid and glycyrrhetic acid monoglucuronide formed by incubation of glycyrrhizin with rat feces. The analysis was accomplished within 25 min with a TSKgel ODS-80TsQA (150 x 2.0 mm i.d.) column by linear gradient elution using a mobile phase containing aqueous phosphoric acid and acetonitrile at a flow rate of 0.2 ml/min, a thermostatic oven at 25 °C, and detection at 254 nm. The detection limits of these compounds were 0.2 pmol per injection (5 μ l). The metabolites of glycyrrhizin, by anaerobic or aerobic incubation with rat fecal suspension over 48 h, were determined. Glycyrrhizin was almost completely converted to metabolite glycyrrhetic acid, and metabolites 3 α -hydroxyglycyrrhetic acid and 3-dehydroglycyrrhetic acid in negligible amounts in anaerobic conditions. However, the metabolic time courses of 3-dehydroglycyrrhetic acid when incubated in aerobic conditions revealed that it apparently continued increasing during the whole incubation period.

抄録 グリチルリチンを添加したラット糞便懸濁液におけるグリチルリチン代謝物であるグリチルレチン酸、グリチルレチン酸モノグルクロナイド、3 α -ヒドロキシグリチルレチン酸、3-デヒドログリチルレチン酸のセミマイクロHPLC同時分析法を確立した。この分析法はTSKgel ODS-80TsQAカラムにリン酸水溶液とアセトニトリルの直線的な濃度勾配を用い、流速0.2ml、カラム温度25°C、検出波長254 nmで行った。これらの化合物の検出限界は注入量当たり0.2 pmolであった。嫌気条件または好気条件下、グリチルリチンを糞便懸濁液中で48時間反応させた。嫌気条件下ではほとんどがグリチルレチン酸に変換され、3 α -ヒドロキシグリチルレチン酸や3-デヒドログリチルレチン酸はわずかであっ

た。しかし好気条件下では明らかに3-デヒドログリチルレチン酸が経時的に増加した。