マウス糞便を用いた大黄甘草湯中の
センノシドA腸内代謝とHPLC定量分析

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High-Performance Liquid Chromatographic Determination and Metabolic Study of Sennoside A in Daiokanzoto by Mouse Intestinal Bacteria

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ABSTRACT: Daiokanzoto (DKT, combination of rhubarb and glycyrrhiza), a Kampo medicine, is clinically effective for constipation. Sennoside A is well known to induce diarrhea. Sennoside A is a prodrug that is transformed into an active metabolite, rheinanthrone, by intestinal bacteria. In this study, we investigated the effects of glycyrrhiza on the activity of sennoside A metabolism in intestinal bacteria using mouse feces. A high-performance liquid chromatography (HPLC) method for the determination of sennoside A in incubation mixture of DKT with mouse feces was established. The retention time of sennoside A was 9.26 ± 0.02 min with a TSKgel ODS-80TsQA column by linear gradient elution using a mobile phase containing aqueous phosphoric acid and acetonitrile and detection at 265 nm. We found that the activity of sennoside A metabolism in intestinal bacteria was significantly accelerated when glycyrrhiza, liquiritin or liquiritin apioside coexisted with sennoside A, whereas that of glycyrrhizin was not altered. This method is applicable for determination of the activity of sennoside A metabolism by anaerobic incubation of DKT with mouse feces.