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High-Performance Liquid Chromatographic Analysis of Ginsenosides in *Panax Ginseng* Extracts Using Glass-ODS Column*

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A high-performance liquid chromatographic (HPLC) method using a column of octadecylsilyl porous glass (glass-ODS) achieved rapid and excellent separation. As a part of our interest in HPLC analysis of biological and medical materials, we applied the method for analysis of ginsenosides.

A mixture of ginsenosides was analyzed by the chromatography with 203 nm detection. Ginsenosides Rf, Rg_2, Rb_1, Rc, Rb_2, and Rd were separated with acetonitrile-water (27.5 : 72.5) as the mobile phase. Also a well-resoluted chromatogram of ginsenosides Ro, Rg_1 and Re was obtained with acetonitrile-water (16.5 : 83.5). The whole separation was achieved in 12 min with a flow-rate of 1 ml/min. Calibration curves of ginsenosides Rb_1, Rc, Rb_2, Rd, Rg_1 and Re were linear up to 5 μg.

Ginseng was extracted with methanol and the extract was filtered, dried and refrigerated. Separation of the ginsenoside peaks of the extract was quite satisfactory. The ginsenoside fractions were taken and subjected to the HPLC analysis. Each fraction gave a single chromatographic peak. The fractions were also analyzed by means of the thin layer chromatography. They gave single spots and showed the same Rf values as the standard samples of the assigned peaks.

The present method using glass-ODS column has an advantage in rapid separation of ginsenosides and will find its place among other analytical methods which are in routine use.

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