

## 定量用グリチルリチン酸に含まれる類縁物質に関する研究

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Galacturoglycyrrhizic Acid Contained in Glycyrrhizic Acid Reference Standard:  
Characterization and Its Influence on the JP Assay

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### Summary

Glycyrrhizic acid reference standard (RS) for the Japanese Pharmacopoeia (JP) also contains an analogue of glycyrrhizic acid. Although the analogue is not separable from glycyrrhizic acid under the assay conditions of "Glycyrrhiza" in the 16th edition of JP (JP16), an HPLC procedure to separate the analogue from glycyrrhizic acid is adopted in the 17th edition of JP (JP17). Therefore, it is important to clarify the nature of the analogue. The structure of the analogue was presented at the 111st Annual Meeting of the Pharmaceutical Society of Japan, but the details have not yet been published. Thus, we isolated the analogue (compound X) and identified it as 3-[ $\beta$ -D-galactopyranuronosyl-(1  $\rightarrow$  2)- $\beta$ -D-glucopyranuronosyloxy] glycyrrhetic acid, named galacturoglycyrrhizic acid. We also examined the influence of the analogue on the assay of glycyrrhizic acid in "Glycyrrhiza" under the conditions adopted in JP16 and JP17. Mixtures of glycyrrhizic acid and compound X in various ratios showed a single peak under the conditions of JP16 with a standard deviation of peak areas of 1.31%, indicating that the content of compound X does not affect the assay result. The contents of compound X in 20 lots of glycyrrhizic acid RS for JP distributed since 1996 were not more than 1.24%, and the contents in the lots distributed between 2004 and 2012 were less than 1%. These results indicate that the glycyrrhizic acid RS for JP distributed so far can be used in the assay of "Glycyrrhiza" in JP17.

### Key words

Glycyrrhizic acid, Galacturoglycyrrhizic acid, NMR, HPLC, Leguminosae