

Analysis of Glycyrrhizic Acid in Licorice According to the Japanese Pharmacopoeia

Licorice is a dried crude drug containing 2.5 % or more (under dry conditions) of from the roots of Glycyrrhiza (Glycyrrhiza uralensis Fishier, etc.).

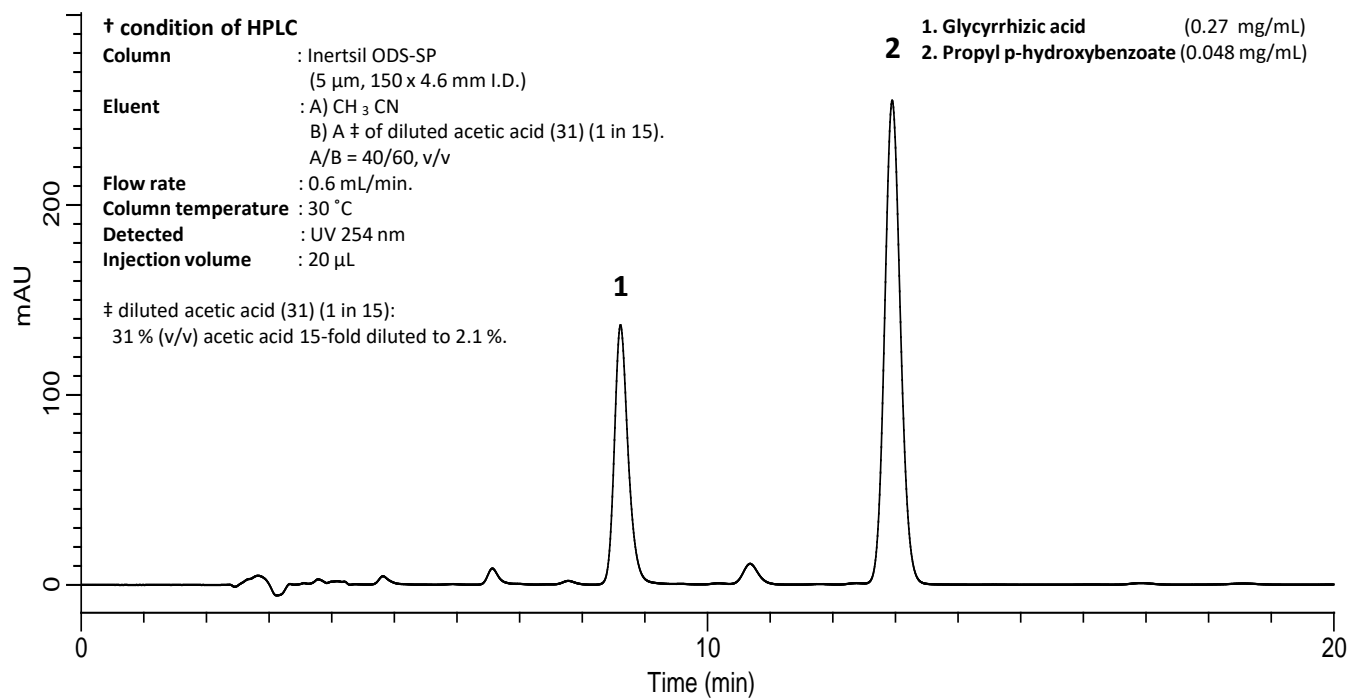
These drugs have anti-ulcer, anti-tussive, anti-allergic, and anti-inflammatory properties and are frequently incorporated into cold remedies, anti-inflammatory analgesics, and anti-diarrheal drugs. Glycyrrhizic acid, the main ingredient, has a considerable sweetness and is used as a sweetener in foods.

The Japanese Pharmacopoeia employs an ODS-column HPLC method for the determination of in licorice. The system compliance items listed below are also specified.

We are pleased to report that we have achieved this requirement.

(T. Fukaya)

Example: measurement of standard



System suitability test

When analyzed under the above HPLC conditions,

1. Elution is in the following order, glycyrrhizic acid and propyl parahydroxybenzoate
2. Each peak is completely separated.
3. For 5 repeat analyses, the relative standard deviation of the glycyrrhizic acid peak area is not more than 1.5 %.

Our results

Elution order : Satisfies the provisions

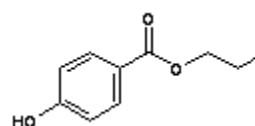
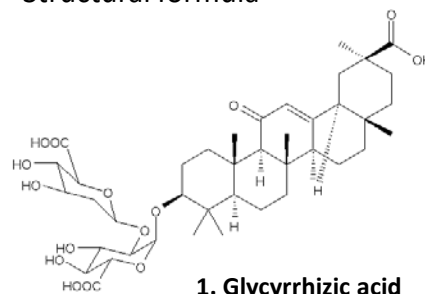
Resolution : Complete separation

Relative standard deviation : 0.33% (Table 1)

N	Area
1	16285407
2	16233767
3	16142486
4	16249604
5	16220029
Average	16226259
RSD (%)	0.325

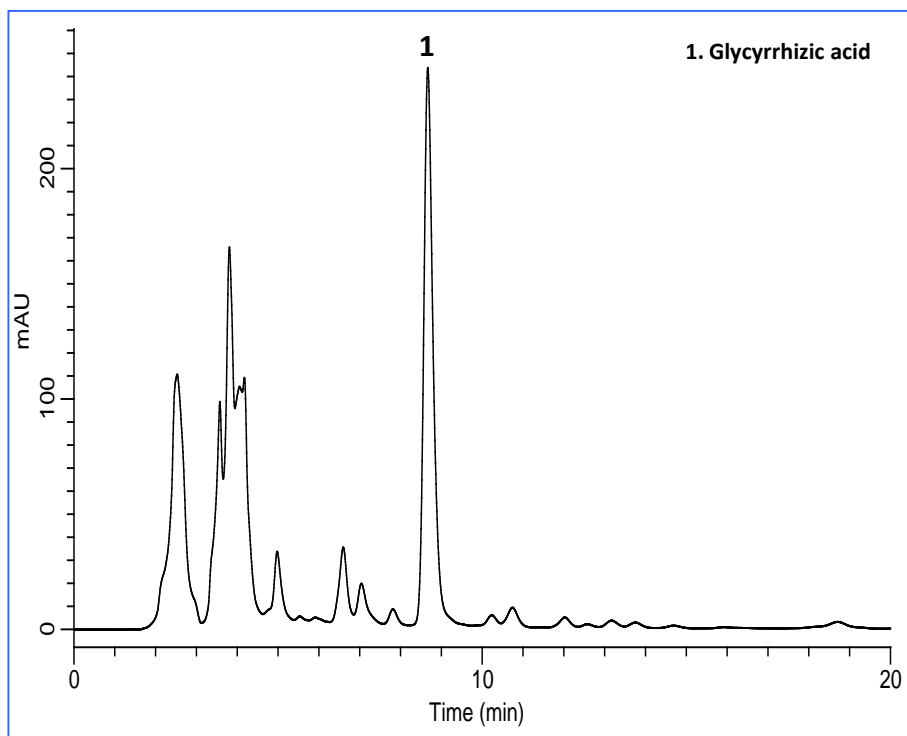
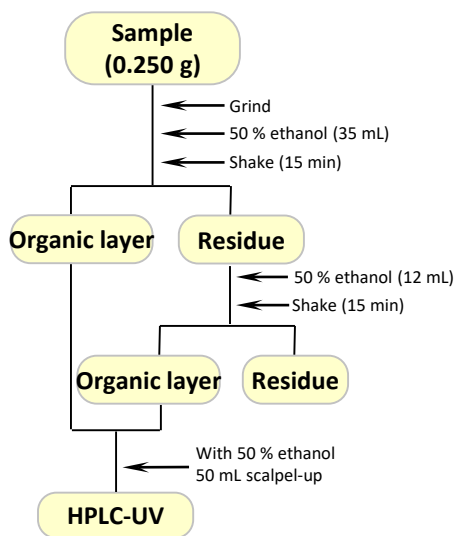
Table 1: Glycyrrhizic acid
Area value reproducibility

Structural formula



Analysis of glycyrrhizic acid in commercial licorice

Example of pretreatment



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