

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.).

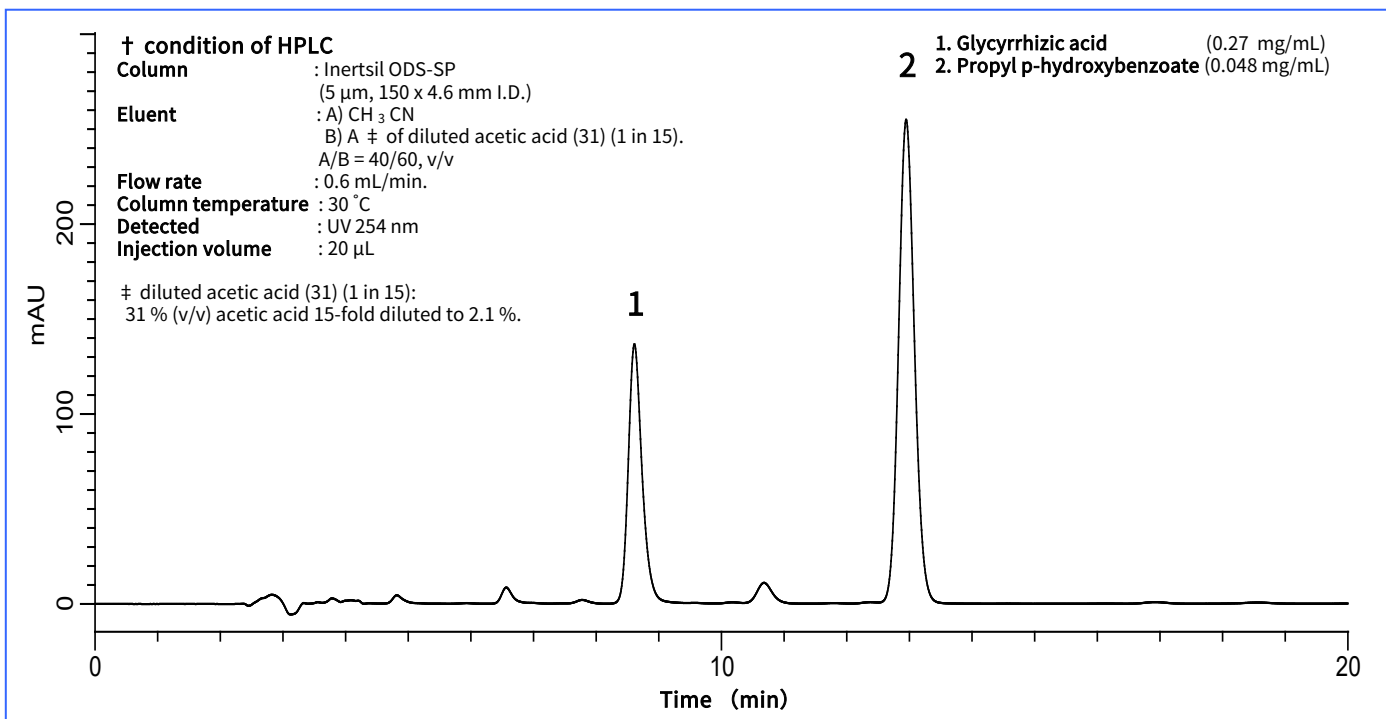
These drugs have anti-ulcer, anti-tussive, anti-allergic, and anti-inflammatory properties and are frequently incorporated into cold remedies, anti-inflammatory analgesics, and anti-diarrheal drugs. Glycyrrhizic acid, the main ingredient, has a considerable sweetness and is used as a sweetener in foods.

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 %.

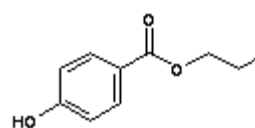
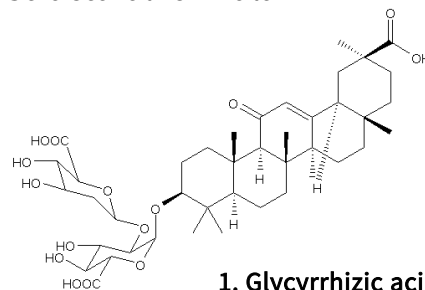
Our results

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 |

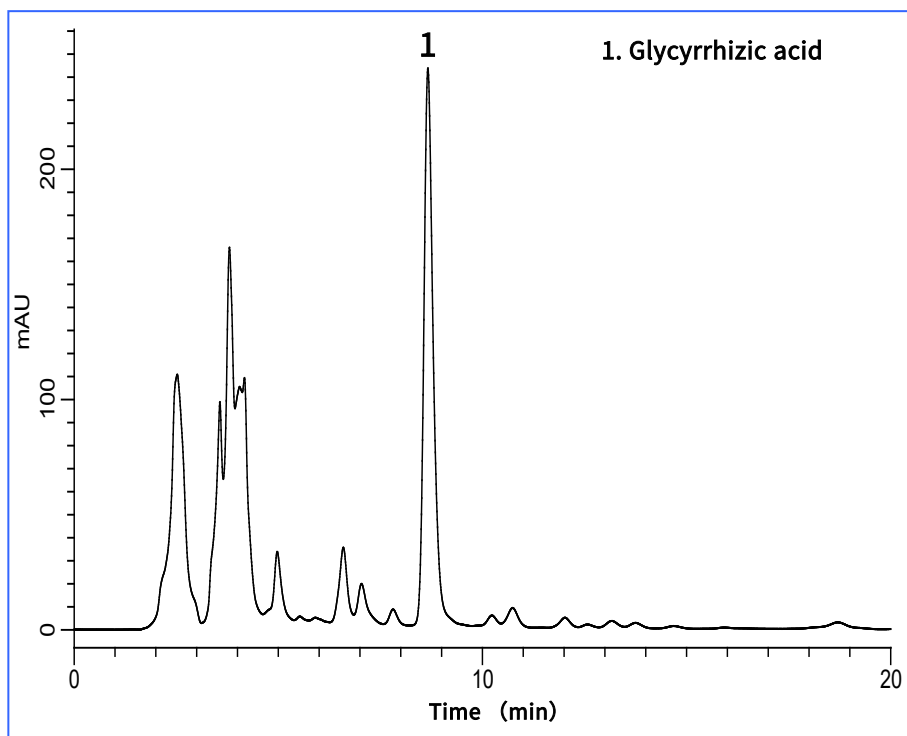
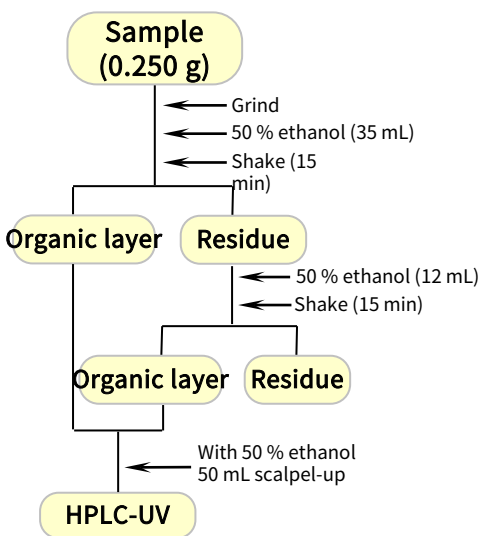
Table 1: Glycyrrhizic acid Area value reproducibility

Structural formula



Analysis of glycyrrhizic acid in commercial licorice

Example of pretreatment



GL Sciences disclaims any and all responsibility for any injury or damage which may be caused by this data directly or indirectly. We reserve the right to amend this information or data at any time and without any prior announcement.

GL Sciences Inc. Japan

22-1 Nishishinjuku 6-chome
Shinjuku-ku, Tokyo
163-1130, Japan

Phone: +81-3-5323-6620
Fax: +81-3-5323-6621
Email: world@glsc.co.jp
Web: www.glsciences.com

GL Sciences Inc. USA

4733 Torrance Blvd. Suite 255
Torrance, CA 90503
USA

Phone: +1-310-265-4424
Fax: +1-310-265-4425
Email: info@glsciencesinc.com
Web: www.glsciencesinc.com

GL Sciences B.V.

Dillenburgstraat 7C
5652AM, Eindhoven
The Netherlands

Phone: +31-40-254-9531
Email: info@glsciences.eu
Web: www.glsciences.eu

GL Sciences (Shanghai) Limited

Tower B, Room 2003
Far East International Plaza
No.317 Xianxia Road, Changning District
Shanghai, China 200051

Phone: +86-21-62782272
Email: contact@glsciences.com.cn
Web: www.glsciences.com.cn



International Distributors

Visit our Website at www.glsciences.com/distributors