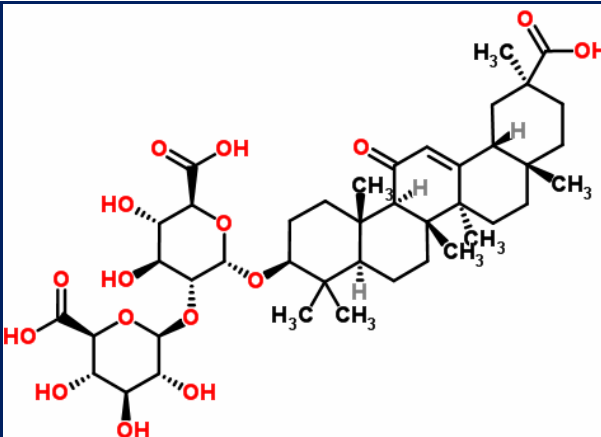


## Certificate of Analysis

<b>Product Name</b>	Glycyrrhizic acid / 甘草酸	
<b>Catalog Number</b>	10017	
<b>Lot Number</b>	100171	

<b>Chemical Name</b>	<b>Glycyrrhizic acid</b>
<b>Chemical Formula</b>	<b>C<sub>42</sub>H<sub>62</sub>O<sub>16</sub></b>
<b>Chemical Family</b>	<b>Saponin</b>
<b>Molecular Weight</b>	<b>822.93</b>
<b>CAS Number</b>	<b>1405-86-3</b>
<b>Appearance (Color)</b>	<b>White</b>
<b>Appearance (Form)</b>	<b>Powder</b>

### Analytical Test

Test	Result
Identity by LC/MS Analysis	Consistent with structure
Purity by HPLC/DAD Analysis	≥98.0%

### Storage Conditions:

<b>Storage:</b>	<b>Refer to label</b>
<b>Before use:</b>	<b>Keep container tightly closed</b>

*TLCM certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated criteria. Warranty does not apply after opening.*

Date of Certificate: 23/01/2013

## Product Analysis Report

### Analytical Test

Test	Results
Identity by LC/MS Analysis	Consistent with structure
Purity by HPLC/DAD Analysis	≥98.0%

### Spectral and Physical Data

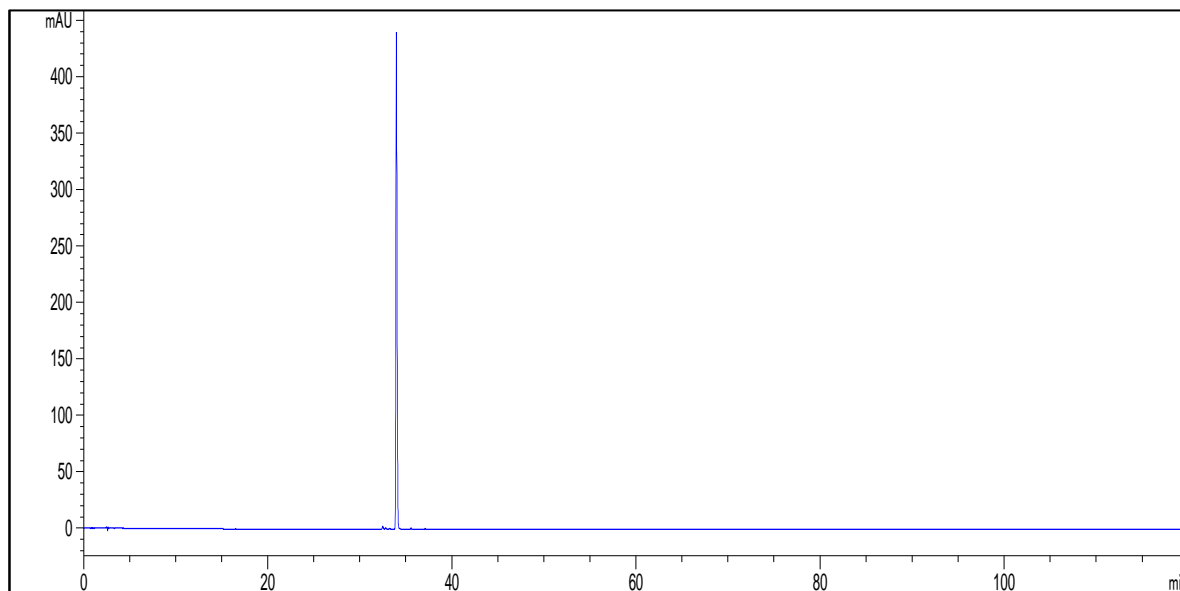
#### HPLC

HPLC system : Agilent Technologies 1260 Series  
Column : Agilent Eclipse XDB-C18, 4.6 x 250 mm, 5 μm or equivalent  
Injection volume : 10 μl  
Detector : DAD  
Detector wavelength : 254 nm  
Flow rate : 1.0 mL/min  
Mobile phase :

Time (min)	% ACN	% 0.03% Phosphoric acid	Flow rate (mL/min)
0 → 10	5 → 25	95 → 75	1.0
10 → 20	25	75	1.0
20 → 36	25 → 50	75 → 50	1.0
36 → 40	50 → 45	50 → 55	1.0
40 → 120	45	55	1.0

Date File Name : A5-D: \\KELLYLAM\DATA\MARKER\GCS 2012-10-30 11-52-11\GCS.D  
Operator : Kelly Lam  
Sample Lot Number : 1001701  
Method File : A5-D: \\KELLYLAM\METHOD\GCS.M  
Acquired : 30/10/2012

**I. HPLC chromatogram**



<b>Product</b>	<b>RT (min)</b>	<b>Area (mAu*s)</b>	<b>Relative Area %</b>
<b>Glycyrrhizic acid</b>	33.983	3824.7	99.12