

Certificate of Analysis

| | | |
|----------------|----------------------|--|
| Product Name | Catharanthine / 長春質鹼 |  |
| Catalog Number | 1008 | |
| Lot Number | 10081 | |

| | |
|--------------------|---|
| Chemical Name | Catharanthine |
| Chemical Formula | C ₂₁ H ₂₄ N ₂ O ₂ |
| Chemical Family | Alkaloids |
| Molecular Weight | 336.43 |
| CAS Number | 2468-21-5 |
| Appearance (Color) | White |
| Appearance (Form) | Powder |

Analytical Test

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

Storage Conditions:

| | |
|-------------|-------------------------------|
| Storage: | Refer to label |
| Before use: | Keep container tightly closed |

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: 15/01/2014

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

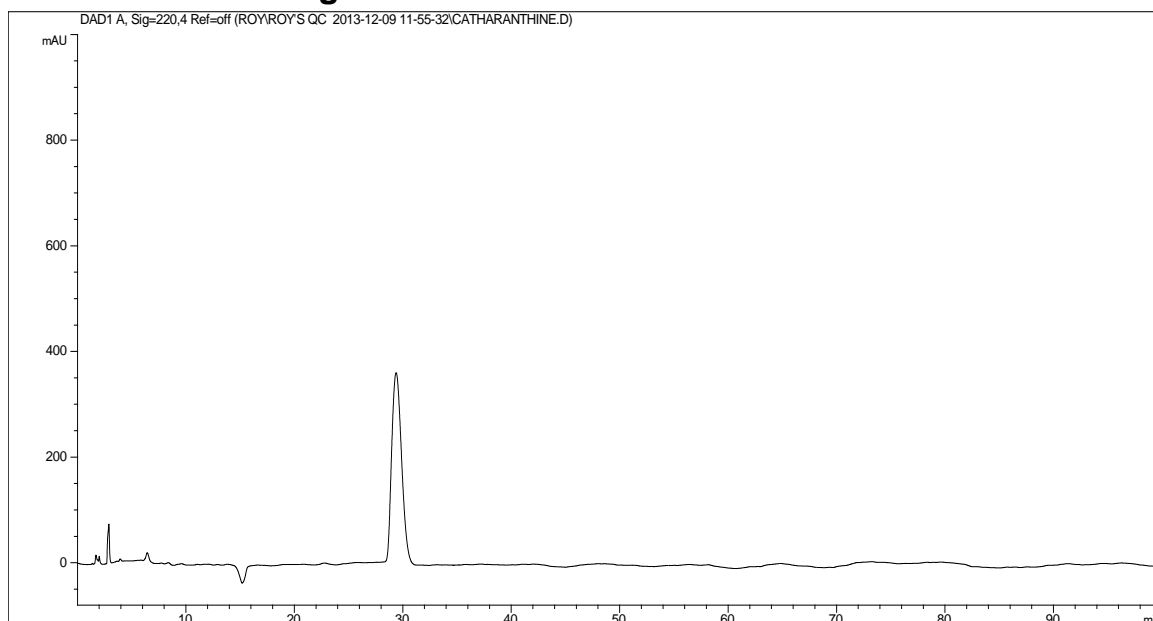
HPLC

HPLC system : Agilent Technologies 1200 Series
Column : Inertsil ODS-4 column, 4.6 x 250 mm, 5 µm
Injection volume : 10 µl
Detector : DAD
Detector wavelength : 220 nm
Flow rate : 1.0 mL/min
Mobile phase :

| Time (min) | % 0.1% Triethylamine | % MeOH | Flow rate (mL/min) |
|------------|-------------------------|--------|-----------------------|
| 0 → 100 | 36 | 64 | 1.0 |

Date File Name : A1-C:\CHEM32\1\DATA\ROY\ROY'S QC 2013-12-09
11-55-32\CATHARANTHINE.D
Operator : DUAN Ran
Sample Lot Number : 10081
Method File : CATHARANTHINE.M
Acquired : 09/12/2013

I. HPLC chromatogram



| Product | RT (min) | Area (mAu*s) | Relative Area % |
|---------------|----------|--------------|-----------------|
| Catharanthine | 29.385 | 23096.2 | 99.181 |