

# Reveleris® X2 Flash System

Reveleris® X2 System Purifies Ferulic Acid in Rhizoma Chuanxiong Extract with Greater Recovery

## Introduction

Medicinal plants are an important resource for drug development. They are commonly analyzed in biochemical, pharmaceutical, and clinical research for their complex constituents and low quantities of bioactive ingredients.

Ferulic acid is known to be one of the main bioactive components found in Rhizoma chuanxiong.<sup>1</sup> The plant has been extracted here and used for the separation and identification of its scarce ingredients using the Reveleris® X2 flash chromatography system.

### Extraction Conditions:

**Extract Type:** Pulverized  
**Weight:** 2g  
**Extraction Solvent:** Ether  
**Solvent Volume:** 40mL  
**Ultra-sonication:** 20 min

### Flash Chromatography Conditions:

**Cartridge:** Reveleris® silica 12g  
**Solvent A:** Hexane  
**Solvent B:** Ethyl acetate  
**Flow Rate:** 25mL/min  
**UV1 Wavelength:** 254nm  
**UV2 Wavelength:** 280nm  
**Cartridge Equilibration:** 3.0 min  
**Injection Type:** Liquid

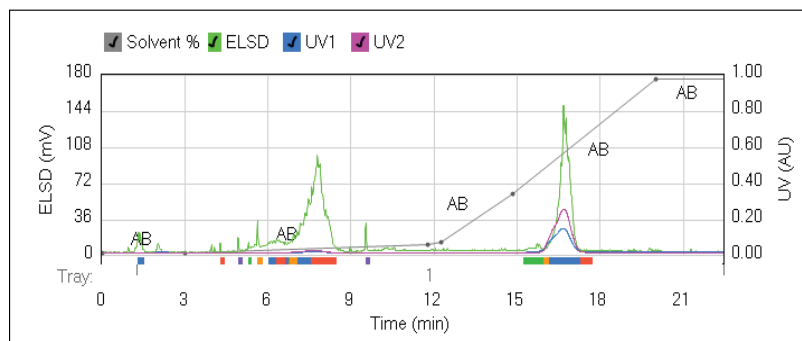


Figure 1: Separation of Rhizoma chuanxiong extract shows the detection of peaks using the UV and the evaporative light scattering detectors.

Gradient Table

Step	Time (min.)	%B
1	0.0	0
2	3.0	0
3	8.8	5
4	0.5	6
5	2.6	33
6	5.2	98
7	2.6	98

## HPLC Conditions:

**Cartridge:** Reveleris® silica 12g

**Column:** Alltima™ silica 5µm, 250 x 4.6mm

**Mobile Phase A:** 1% Formic acid in Hexane

**Mobile Phase B:** 1% Formic acid in Ethyl acetate

**Flow Rate:** 1.0mL/min

**UV Detector:** 280nm

Gradient:	Time:	0	10	20
	%B:	0	50	100

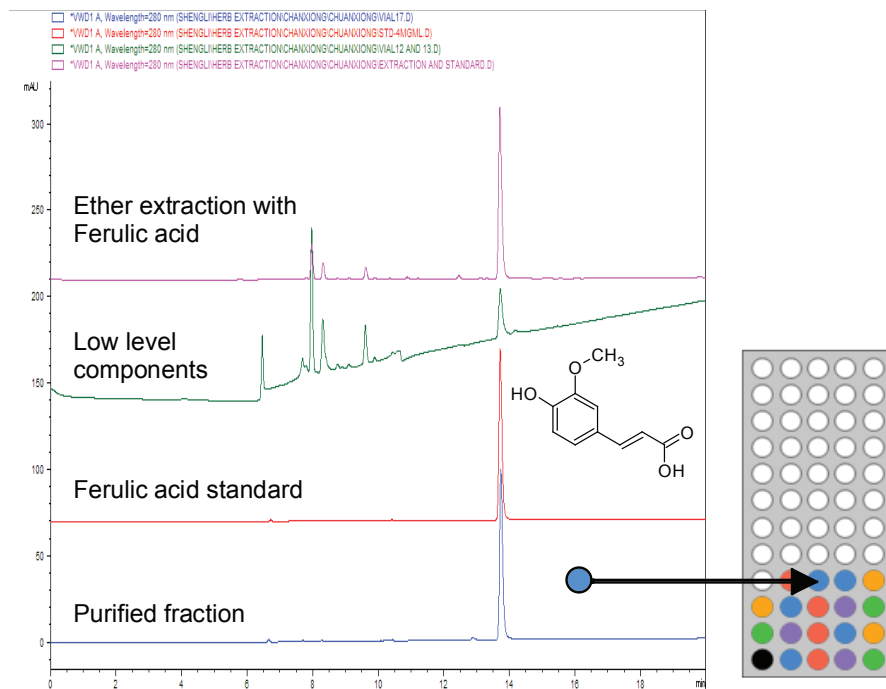


Figure 2: Ferulic acid recovery = 97% (calculated by peak area)

## Conclusion

Using the sensitive Reveleris® X2 flash chromatography system, the critical components of the plant extract at low levels have been isolated and collected. The RevealX™ technology also allows non-chromophoric peaks to be detected with the chromophoric ones in the same run for fraction collection and further analysis. This allows purification of compounds present in the natural product extract, compounds that are not always easily detectable using traditional flash chromatography system and are present at low amounts and useful for medicinal purposes.

## References

- Chen, X.; Kong, L.; Su, X.; Fu, H.; Ni, J.; Zhao, R.; Zou, H.; Separation and identification of compounds in Rhizoma chuanxiong by comprehensive two-dimensional liquid chromatography coupled to mass spectrometry; J. Chromatography A, 1040, (2004), pp. 169-178.

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07/2013 M355a

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