

RevealX™ Technology Purifies Antioxidants in Caryophylli Flos (Dingxiang) Extract

Reveleris® iES Flash Chromatography System

Introduction

Cell membrane lipids can undergo peroxidation from free radicals, leading to cell death and causing several diseases such as atherosclerosis, diabetes, cancer, and ischemia-reperfusion injury¹. Naturally occurring plants tend to inhibit lipid peroxidation due to the presence of

phenolic compounds, such as acid-phenols or flavonoids and their esters. Natural products, such as caryophylli flos, contain eugenol, which has been shown to carry such antioxidant properties.

Experimental

Extraction Conditions

Extract type: Pulverized

Weight: 2 g

Extraction solvent: Ethanol

Solvent volume: 20 mL

Ultra-sonication: 30 min

Run Conditions

Cartridge: Reveleris® silica 12g

Flow rate: 25 mL/min

Equilibration: 5.0 min

UV1 wavelength: 254 nm

UV2 wavelength: 280 nm

ELSD carrier: Iso-proponal

Injection type: Liquid

Solvent A: Hexane

Solvent B: Ethyl acetate

Gradient Method

Step	Time (min.)	%B
1	0	0
2	5	5
3	8.7	56
4	1.7	83
5	0.6	100



Results and Discussion

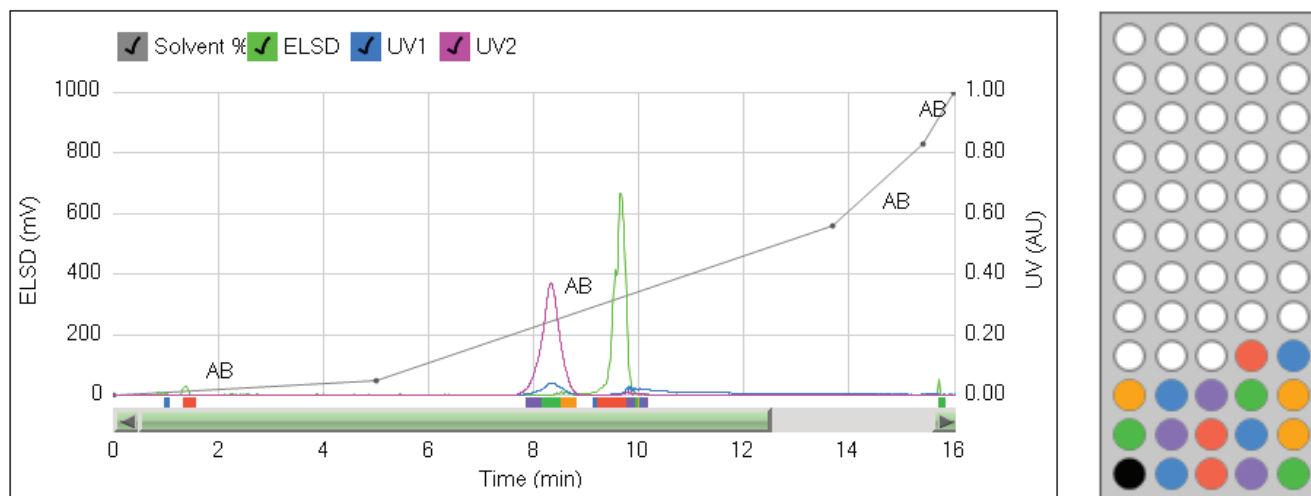


Figure 1: Separation of caryophylli flos extract shows the closely eluting non-chromophoric peak detected by the evaporative light scattering detector in the same run.

Conclusion

Natural product extracts have been shown to contain critical components that are both chromophoric and non-chromophoric. The Reveleris® flash chromatography system shows the benefits of RevealX™ technology in having multiple detection capabilities and integrated

fraction collection for isolating compounds, helping to reduce post-run analysis time. The purification process can thus be more efficient and productive, even in the presence of low quantities of sample components.

References

1. Ogata, M.; Hoshi, M.; Urano, S.; Endo, T.; Antioxidant activity of Eugenol and related monomeric and dimeric compounds; Chem. Phar. Bull. 48(10), 1467, (2000), pp. 1467-1469.

Americas
Deerfield, Illinois
Tel: +1 847.948.8600
discoverysciences@
grace.com

Europe
Lokeren, Belgium
Tel: +32 (0)9.340.65.65
discoverysciences.EU@
grace.com

India
Pune
Tel: +91 20.6644.9900
pune@grace.com

China
Shanghai
Tel: +86 21.5467.4678
dsbiz.asia@grace.com

Australia
Rowville
Tel: +61 3.9237.6100
discoverysciences.AU@
grace.com

GRACE®, GRACE DAVISON® are trademarks, registered in the United States and/or other countries, of W. R. Grace & Co.-Conn. REVELERIS® is a trademark, registered in the United States and/or other countries, of Alltech Associates, Inc. REVEALX™ is a trademark of Alltech Associates, Inc. This trademark list has been compiled using available published information as of the publication date of this brochure and may not accurately reflect current trademark ownership or status. Grace Davison Discovery Sciences is a product group of W. R. Grace & Co.-Conn., which now includes all product lines formerly sold under the Alltech brand. Alltech Associates, Inc. is a wholly owned subsidiary of W. R. Grace & Co.-Conn. The information presented herein is derived from our testing and experience. It is offered for your consideration and verification. Since operating conditions vary significantly, and are not under our control, we disclaim all warranties on the results that may be obtained from the use of our products. W. R. Grace & Co.-Conn. and its subsidiaries can not be held responsible for any damage or injury occurring as a result of improper installation or use of its products. Grace reserves the right to change prices and/or specifications without prior notification. © Copyright 2011 W. R. Grace & Co.-Conn. All rights reserved.