

Flavanone Glycoside Purification with Reveleris® Flash Chromatography System Improves Isolation of Polar Compounds

Reveleris® iES Flash Chromatography System

Introduction

Neohesperidin, naturally available from bitter orange, is an intensely bitter flavanone glycoside used for producing the non-sugar sweetening agent neohesperidin dihydrochalcones for diabetes related therapy.¹ The compound is known to have a strong synergistic effect in combination with other sweeteners, such as aspartame, xylitol, and saccharin, for controlling the sugar uptake in human body.

During the synthesis of neohesperidin, hesperitin and neohesperidose are used as reagents. Using the Reveleris® system with RevealX™ technology and the high capacity Reveleris® amino cartridges, unreacted or even degraded reagents that may be undetected with UV detection can be isolated from the mixture.

Experimental

Run Conditions

Cartridge: Reveleris® amino media 40g

Flow rate: 40 mL/min

Equilibration: 10.0 min

Run length: 25.0 min

UV1 wavelength: 220 nm

UV2 wavelength: 254 nm

ELSD carrier: Iso-proponal

Solvent A: Water

Solvent B: Acetonitrile

Gradient Method

Step	Time (min.)	%B
1	0	99
2	2	99
3	10	70
4	13	70



Results and Discussion

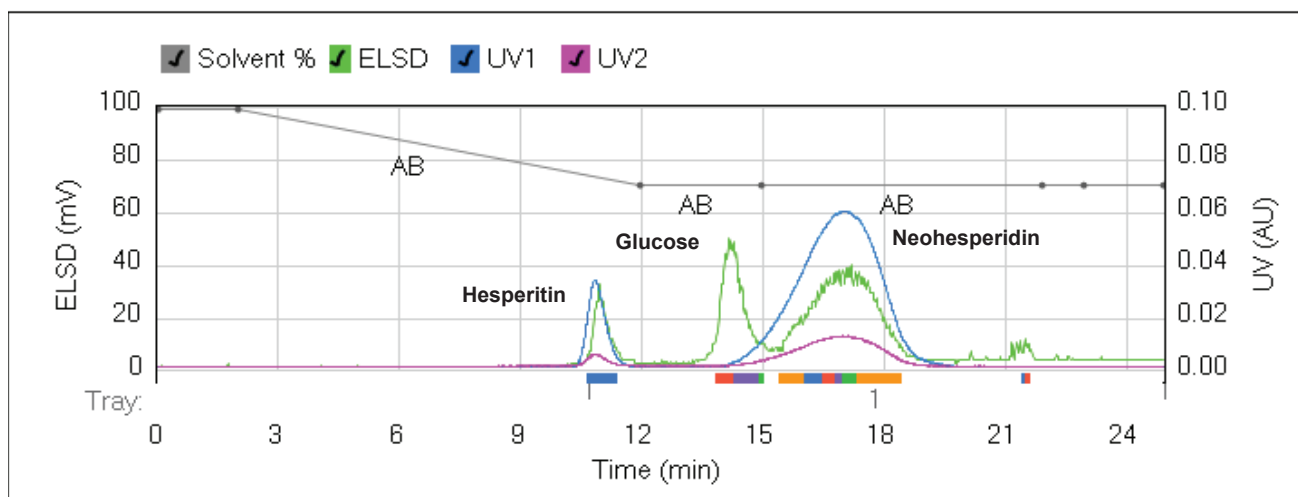
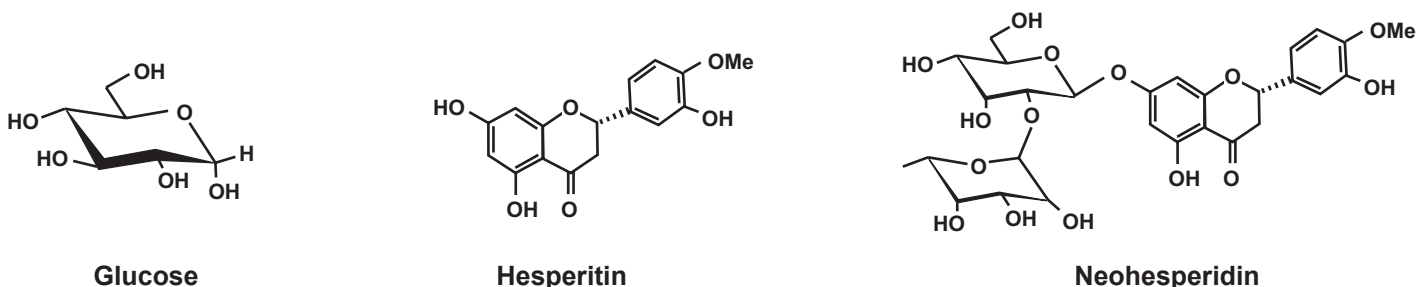


Figure 1: Purification of neohesperidin isolates glucose in the mixture using the RevealX™ detection



Conclusion

Glycosidic compounds such as neohesperidin are not easily separated on a reversed phase column from other polar components while traditional detectors, such as UV, fails to detect sugar compounds used for conjugation during synthesis. Silica gel modified with amino phase retains polar, basic molecules and may be used in the

separation of peptides, sugars, steroids, and triglycerides. Using the high capacity amino cartridge and the RevealX™ technology in the Reveleris® flash system, both polar and non-chromophoric compounds are separated and isolated during flash chromatography purification.

References

1. Medicinal natural products; a biosynthetic approach, 3rd edition; Dewick, P.; John Wiley & Sons, Inc., Hoboken, New Jersey, 2009.

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