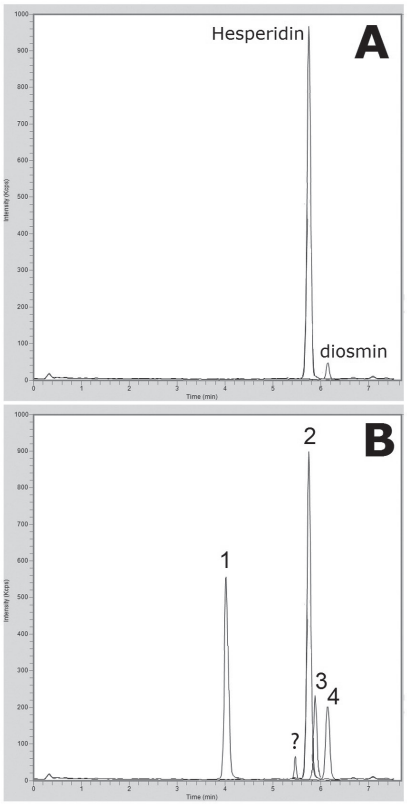
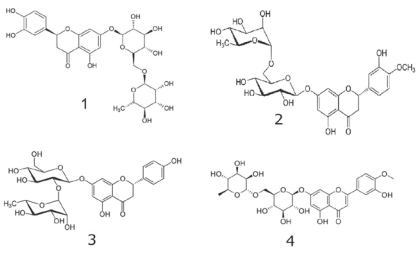
Spiked Hesperidin Extract

Analysis using Cogent Phenyl Hydride™ and MS detection





Note: Flavonoids are phenolic substances isolated from a variety of plants and fruits. They are low molecular weight compounds and in plants they are usually bound to sugar molecules as O-glycosides. Flavonoids are present in foods and beverages of plant origin, such as fruits, vegetables, tea, wine etc. They can be divided into fourteen classes, including flavonols, flavones, anthocyanins, isoflavonoids, and flavanones. They have been shown to have anti-inflammatory, anti-allergic, anti-carcinogenic, antihypertensive and anti-arthritic, and free radical scavenging properties.

Method Conditions

Column: **Cogent Phenyl Hydride**, 4µm, 100Å

Catalog No.: 69020-05P-2

Dimensions: 2.1 x 50 mm

Mobile Phase: A: DI H_2O / 0.1% formic acid (v/v)
B: Acetonitrile / 0.1% formic acid (v/v)

Gradient:

time (min.)	%B
0	10
1	10
9	70
10	10

Post Time: 3 min

Injection vol.: 1µL

Flow rate: 0.4 mL/min

Detection: ESI – POS - PerkinElmer, Flexar SQ 300 mass spectrometer

Samples: A: Hesperidin extract (1mg/mL) in DI H_2O, diluted 1:100 with solvent B.
B: Hesperidin extract (1mg/mL) in DI H_2O, diluted 1:100 with solvent B and spiked with 20 ppm of the standards (eriocitrin, naringin,diosmin).

Peaks: 1. Eriocitrin 595.2 $[M+H]^+$
2. Hesperidin 541.2 m/z $[M+H]^+$
3. Naringin 581.2 m/z $[M+H]^+$
4. Diosmin 609.2 m/z $[M+H]^+$

Discussion

In this method, the hesperidin extract was spiked with three glycosidic flavonoids. The Cogent Phenyl Hydride column was used to separate the main component of the extract (hesperidin) and three standards. The MS detection helped to distinguish between the naringin peak of the standard and a small impurity peak (peak marked "?").

When the hesperidin extract sample was analyzed, only peaks for hesperidin and a small peak for dosmin were detected. The Cogent Phenyl Hydride column is ideal for analysis of flavonoid type compounds, providing additional π-π interactions.

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