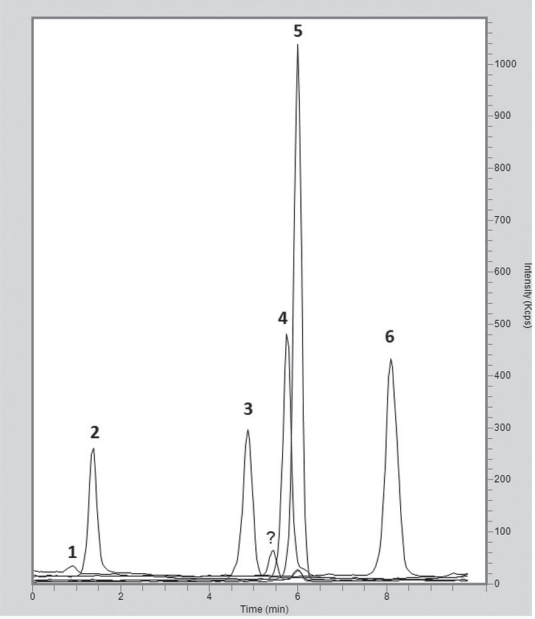
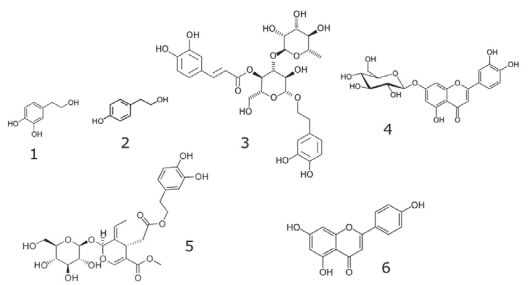
Compounds in Olive Leaves Extract

Determination of phenolic composition using LC-MS





Peaks: 1. Hydroxytyrosol m/z 177 [M + Na]+
2. Tyrosol m/z 161 [M + Na]+
3. Verbascoside m/z 647 [M + Na]+
4. Luteolin-7-O-glucoside m/z 449 [M + H]+
5. Oleuropein m/z 563 [M + Na]+
6. Apigenin m/z 449 [M + H]+

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	5
3	15
4	15
6	30
7	30
11	95
14	95
15	5

Post Time: 3 min

Injection vol.: 1µL

Flow rate: 0.4 mL/min

Detection: ESI – NEG - Perkin Elmer, Flexar SQ 300 mass spectrometer

Sample: Commercial olive leaves extract was dissolved in DI H_2O and spiked at a concentration 25 ppm.

Peak: Peonidin 3-O-glucoside 463 m/z [M^+]

t_0: 0.4 min

Discussion

A commercial olive extract was analyzed using the Cogent Phenyl Hydride column. Only one oleuropein peak was detected. The obtained peak was symmetrical and compound was well retained. The results were reproducible (%RSD = 0.2 for retention times). However according to the literature1 the extract form olive leaves should contain additional compounds. To confirm that the extract doesn't contain these compounds, spiked olive leaves extract was analyzed. All the compounds were detected and separated.

[1] J.E. Hayes, P. Allen, N. Brunton, M.N. O'Grady, and J.P. Kerry, Food Chemistry, 126, (2011) 948–955

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