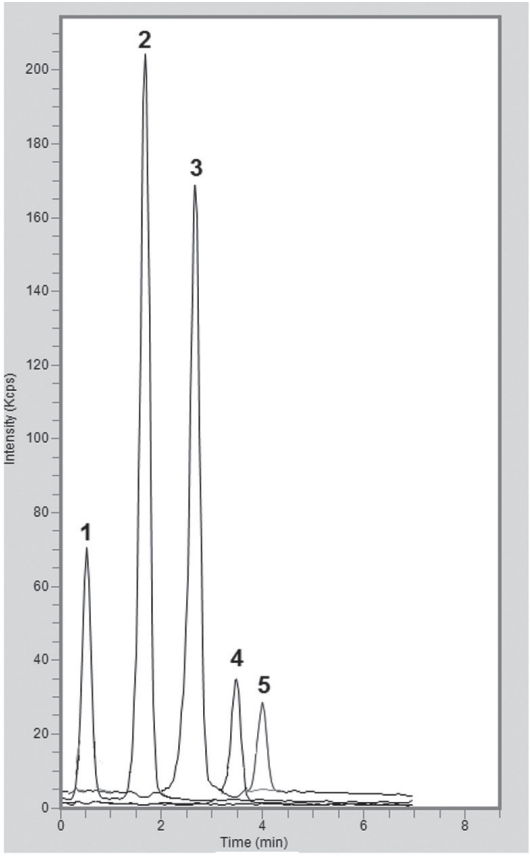
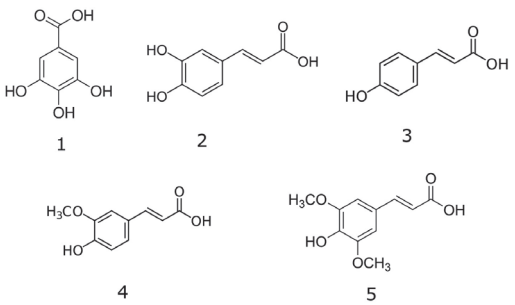
Spiked Rice Extract

LC-MS method for phenolic compounds





Note: Rice is a staple food in many countries. It contains phenolic compounds which have anticancer, antioxidant, and antimutagenic effects. It is important to analyze rice extracts to confirm the content of the phenolic compounds in rice.

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
5	20
6	20
7	10

Post Time: 3 min

Injection vol.: 1µL

Flow rate: 0.4 mL/min

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

Sample: Commercial rice extract 2 was spiked with standards at a concentration of 12.5 ppm and was analyzed.

Peaks: 1. Gallic acid 169 m/z $[M-H]^-$
2. Caffeic acid 179 m/z $[M-H]^-$
3. p-coumaric acid 163 m/z $[M-H]^-$
4. ferulic acid 193 m/z $[M-H]^-$
5. 3,5-dimethoxy-4-hydroxycinnamic acid 223 m/z $[M-H]^-$

t_0: 0.5 min

Discussion

When commercial rice extracts were analyzed, only 6'-O-Feruloylsucrose at 3.01 min (peak not shown for the clarity of the chromatogram) was found in this particular rice extract sample. Next, the sample was spiked with the standards according to reference [1]. The analysis was done in a single run by switching polarity between positive and negative ionization mode. The Cogent Phenyl Hydride column was an excellent choice to use for analysis of phenolic compounds.

[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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