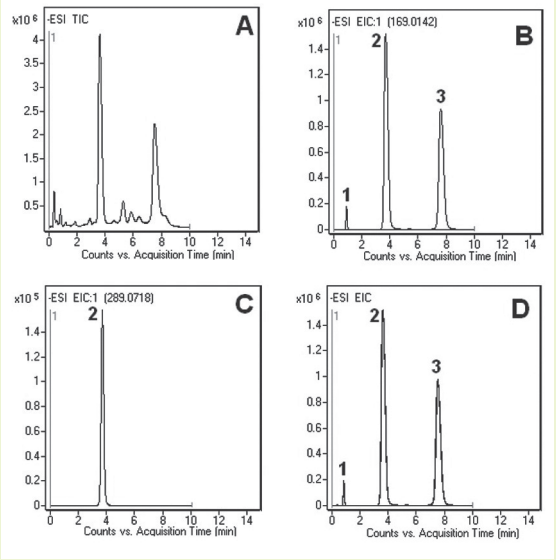
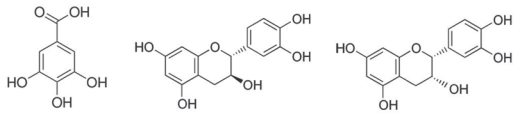
Polyphenols in Grape Seed Extract

Gallic acid, catechin, and epicatechin





1. Gallic acid 2. Catechin 3. Eipcatechin

Note: Grape seed extracts have a high content of phenolic compounds, such as gallic acid, catechin, epicatechin and procyanidins. They have been the matter of intense investigations with respect to their potentially beneficial effects on human health. Phenolic compounds are secondary plant metabolites and they play an important role in plant grow, reproduction, and protection against pathogens and predators. This data was presented at the American Society of Pharmacognosy Annual Meeting and Exhibition, July 30 – August 3, 2011, San Diego, California.

Method Conditions

Column: **Cogent Bidentate C18™**, 4µm, 100Å

Catalog No.: 40018-05P-2

Dimensions: 2.1 x 50 mm

Solvents: A: DI H_2O / 0.1% formic acid
B: Methanol / 0.1% formic acid

Gradient:

time (min.)	%B
0	10
5	15
7	15
8	10

Injection vol.: 1µL

Flow rate: 0.4 mL/min

Detection: ESI – NEG - Agilent 6210 MSD TOF mass spectrometer

Sample: Grape seed extract tablet was crushed and extracted with DI H_2O at 40°C. Before injection, sample solution was filtered using a 0.45µm nylon filter (MicroSolv Tech Corp.).

Peaks: 1. Gallic acid 169.0142 m/z $(M-H)^-$, RT=0.862 min
2. Catechin 289.0718 m/z $(M-H)^-$, RT=3.739 min
3. Epicatechin 289.0718 m/z $(M-H)^-$, RT=7.626 min

t_0: 0.4 min

Discussion

The analytical method presented in this study was applied to the determination of phenolics in a grape seed extract. From Figure B, it can be determined that the aqueous extract contains a high amount of gallic acid, catechin and epicatechin. A Cogent Bidentate C18 column used for the analysis was chosen because of rapid equilibration time when a gradient analysis is required.

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