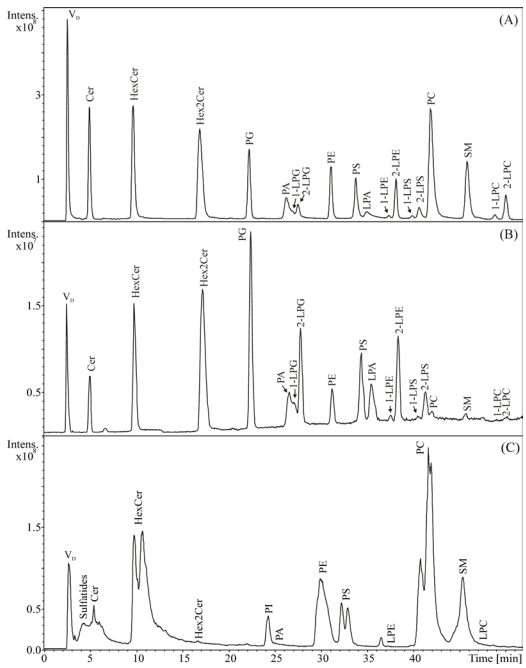
Phospholipids

Separation of different classes in porcine brain extract



Note: This application note was produced from data conducted by the following authors: E. Cífková, R. Hájek, M. Lísa, M. Holčapek, Hydrophilic interaction liquid chromatography–mass spectrometry of (lyso)phosphatidic acids, (lyso)phosphatidylserines and other lipid classes, J. Chromatogr. A (2016), in press.

Method Conditions

Column: **Cogent Diamond Hydride™**, 4µm, 100Å

Catalog No.: 70000-15P

Dimensions: 4.6 x 150 mm

Solvents: A: DI water / 40 mM ammonium formate, adjusted to pH 4 with formic acid
B: Acetonitrile / formic acid

Gradient:

time (min.)	%B
0	99.7
60	75

Temperature: 40˚C

Injection vol.: 3.0 microL

Flow rate: 1.0mL/min

Detection: Agilent 1290 ESI – POS/NEG – Esquire 3000 ion trap analyzer

Peaks: Various classes of phospholipids

Figures: A: Lipid standard mixture, positive mode
B: Lipid standard mixture, negative mode
C: Porcine brain extract, negative mode

Discussion

Phospholipids are an important group of biological compounds. Their separation in LC-MS can be difficult to achieve due to MS incompatibility of reagents typically required in the mobile phase. In this work, phosphatidic acids, phosphatidylserines, and their lyso derivatives were separated and detected in an LC-MS method with the Cogent Diamond Hydride column. Figures A and B demonstrate how the analytes can be detected in either positive or negative mode. Figure C shows the applicability of the technique to a real world sample, a porcine brain extract.

The original article can be found here:

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