

Quantitative ³¹P-NMR Analysis of Phospholipid Mixtures

Avanti Analytical Services Division

What is Quantitative ³¹P-NMR?

Quantitative ³¹P-NMR is an analytical technique that provides rapid, reliable characterization and quantitation of phospholipid species in a variety of matrices. The technique capitalizes on the wide variance of chemical shifts (ppm) in the phosphorus NMR spectrum for phospholipid classes, and the 100% isotopic abundance ensures accurate and reliable data (LOQ = 0.3 mM; %RSD = 2%). Depending on the matrix (e.g. soy, dairy, krill, sunflower), very robust, validated sample prep methods are used which allow for comprehensive analysis of most nutraceutical and liposomal formulations; an example is shown below. The response in mM concentration can be converted to weight/weight percent, mg per capsule, etc ...

Why should I use ³¹P-NMR analysis for my samples?

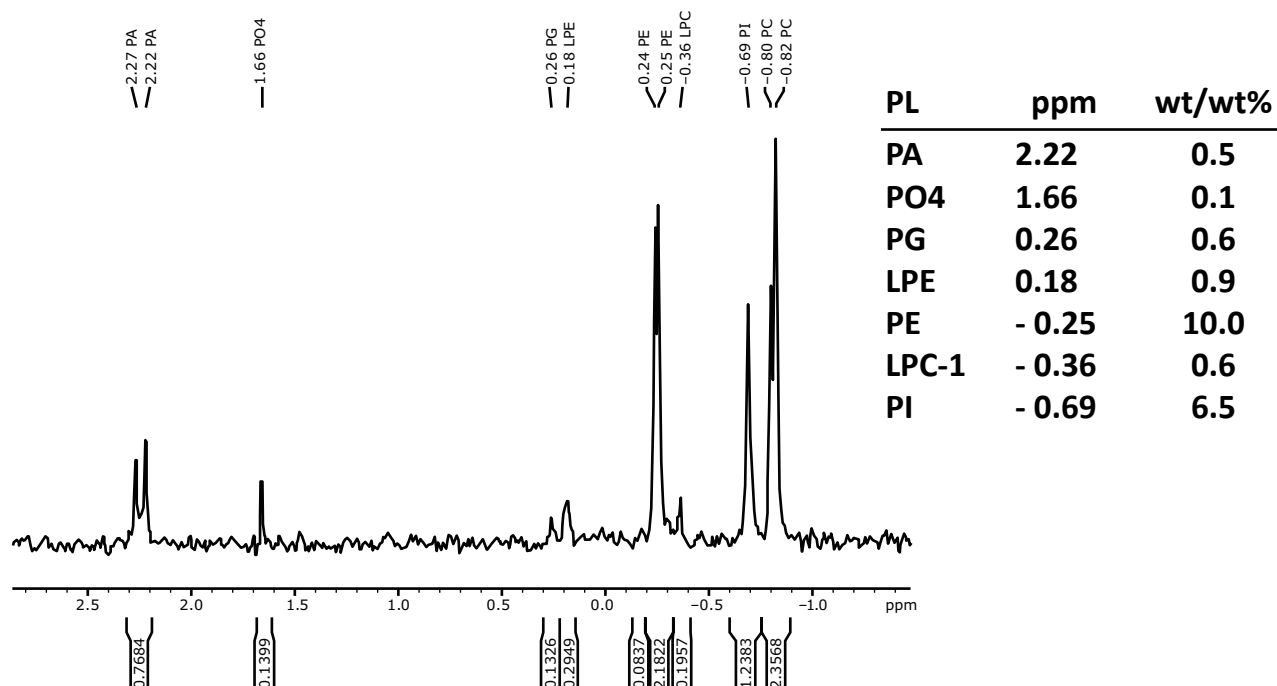
There are inherent challenges to quantitation of phospholipid mixtures by other techniques such as

mass spectrometry. Extensive isobaric interference and differential ionization and fragmentation efficiencies for different lipid classes makes mass spectrometry a challenging technique. Additionally, a comprehensive reference standard and internal standard is needed to accurately quantitate each class. If you desire a single concentration for each lipid class with unparalleled accuracy in your nutraceutical or formulation product, the ³¹P-NMR method is ideal.

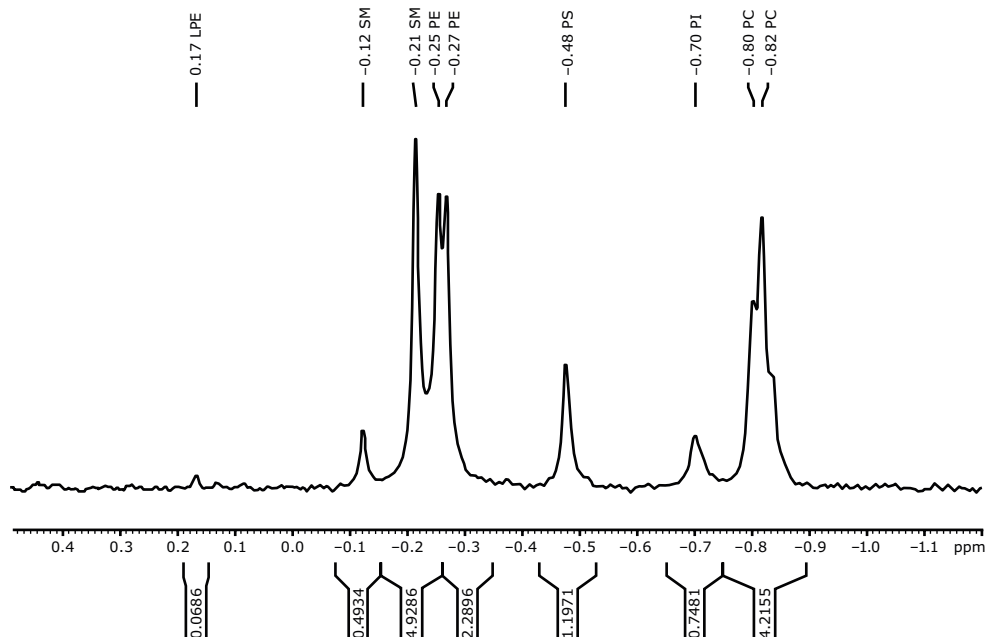
How do I request ³¹P-NMR analytical services?

To order ³¹P-NMR services, please visit the Avanti website and fill out a sample submission form. Alternatively, e-mail us at lipidomics@avantilipids.com if you have any additional questions about this service or other Avanti products and services.

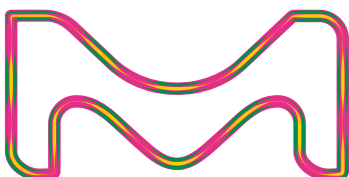
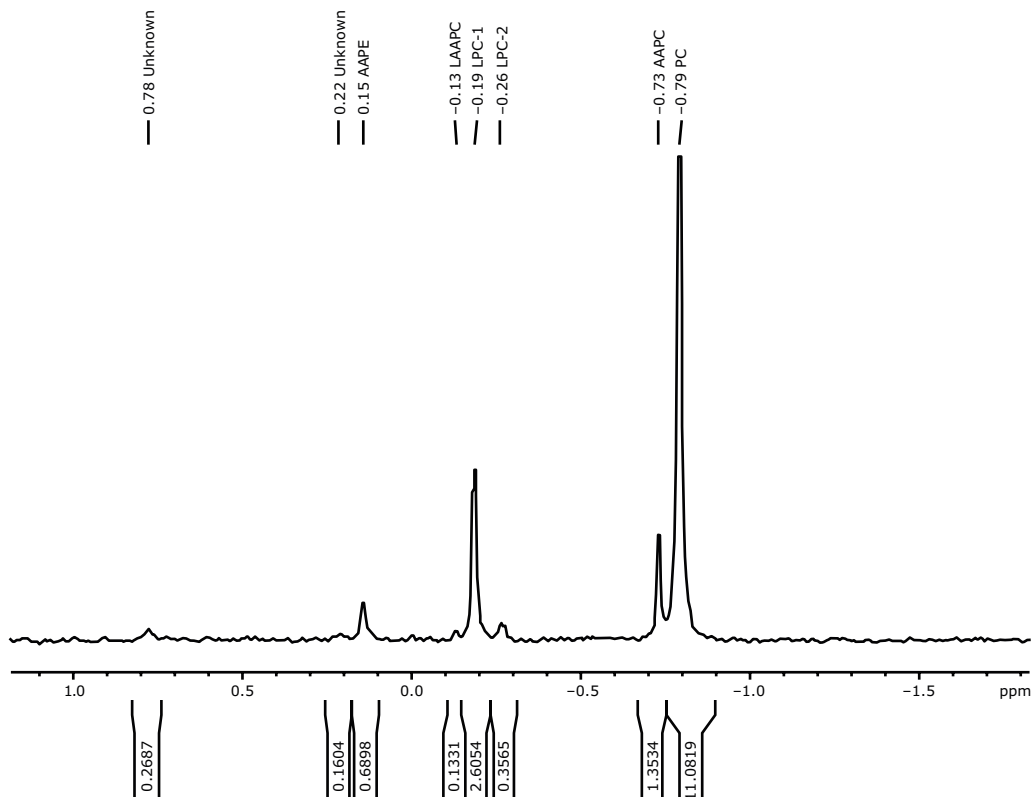
³¹P-NMR Spectrum of Soy Lecithin with Phospholipid Composition in wt/wt%



³¹P-NMR Spectrum of Dairy Product



³¹P-NMR Spectrum of Krill Oil Product



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