

LIPID MAPS Mass Spectrometry Internal Standards for Phosphatidylinositolphosphates (PIP's)

MS Internal Standards were formulated using unique molecules designed by Avanti Polar Lipids and the LIPID MAPS Consortium. Avanti is proud to supply these **Quantitative MS Internal Standards** to LIPID MAPS, and they are now available to the research community.

Name	Number
17:0-20:4 PI(3)P	LM-1900
17:0-20:4 PI(4)P	LM-1901
17:0-20:4 PI(5)P	LM-1902
17:0-20:4 PI(3,4)P2	LM-1903
17:0-20:4 PI(3,5)P2	LM-1905
17:0-20:4 PI(4,5)P2	LM-1904
17:0-20:4 PI(3,4,5)P3	LM-1906

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Avanti**

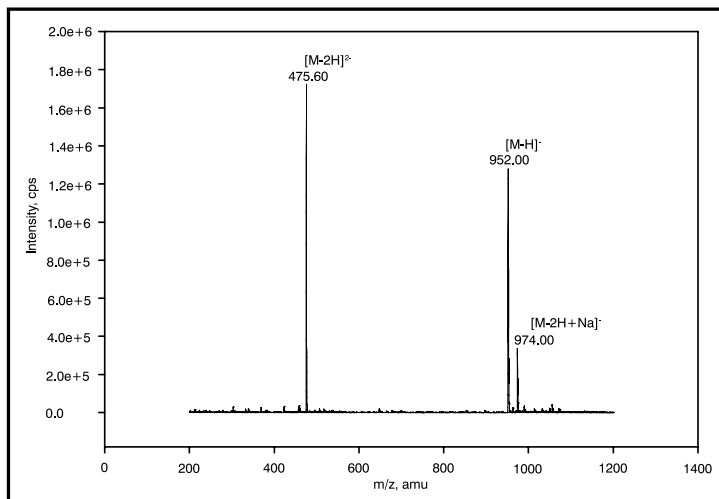
Now available for the first time – the complete set of seven non-natural PIP's containing poly-unsaturated fatty acids. These seven unique PIP's will serve as MS internal standards for each of the polyphosphorylated phosphatidylinositol derivatives found in cells.

The development of a new mass spectrometric lipid profiling methodology permits the identification of cellular phosphatidylinositol monophosphate/phosphatidylinositol bisphosphate/phosphatidylinositol trisphosphate (PIP/PIP2/PIP3) species that includes the fatty acyl composition. Using electrospray ionization mass spectrometry, we were able to resolve and identify 28 PIP and PIP2 compounds as well as 8 PIP3 compounds from RAW 264.7 or primary murine macrophage cell extracts. Analysis of PIP profiles after agonist stimulation of cells revealed the generation of differential PIP3 species and permitted us to propose a novel means for regulation and specificity in signaling through PIP3. This is the first reported identification of intact, cellular PIP3 by mass spectral analysis. The ability to analyze the fatty acyl chain composition of signaling lipids initiates new venues for investigation of the processes by which specific polyphosphoinositide species mediate.

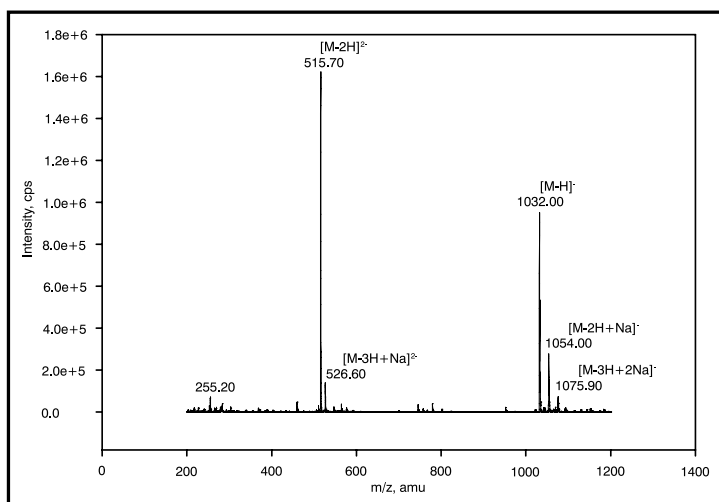
Milne, S.B., P.T. Ivanova, D. DeCamp, R.C. Hsueh, and H.A. Brown. (2005). A targeted mass spectrometric analysis of phosphatidylinositol phosphate species. *J Lipid Res* 46:1796-802.

continued overleaf

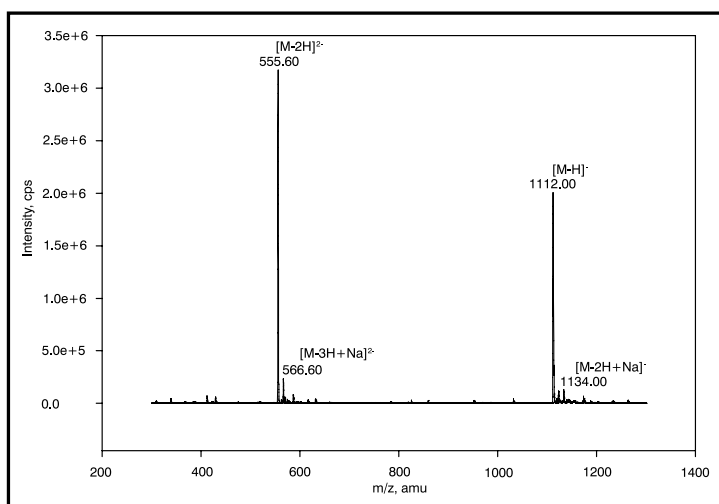
LIPID MAPS MS Internal Standards



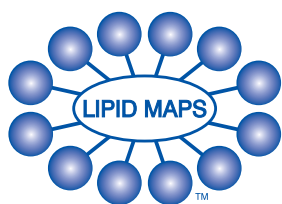
MS data of
PI(4)P



MS data of
PI(3,4)P2



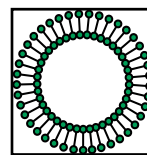
MS data of
PI(3,4,5)P3



www.lipidmaps.org

For information about procedures and guidance in the application of these Lipid Standards visit: www.lipidmaps.org/downloads/2007_methods_chapters.pdf

Qualitative Standards also available for all of the above. Visit avantilipids.com for more details and ordering information.



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