

LCMS Challenges with HILIC Mobile Phases from Salt Buildup and Ion Suppression Explained - Tips & Suggestions

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Many people ask us about the problem associated with polar acidic compound analysis using HILIC or ion exchange columns with Mass Spectrometry.

Fortunately, there is an easy solution to this problem. You can use Cogent TYPE-C HPLC columns such as the Diamond Hydride™, Phenyl Hydride™ and others to separate highly polar compounds in ~~Aqueous Normal Phase~~ ANP mode with better results. With ANP, you only need from 0.1mM to 10mM of ammonium acetate or other acids or bases to get great results.

This leads to many benefits such as minimizing MS inlet source build up of precipitated salt from using 20mM - 75mM as recommended by HILIC column suppliers. Also, too much salt in your mobile phase can cause ion suppression. This is avoided by adding the low amounts needed in ANP. Also, higher salt concentrations very often will corrode stainless steel frits, columns and system hardware if you don't adequately flush the column and systems.

Below is an example of an MS Inlet that has been clogged by too much salt in a mobile phase.



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