PT19 The Application of Ethylene Bridged Hybrid Particles for Hydrophilic Interaction Chromatography

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The benefits of utilizing BEH particles for HILIC for improved polar retention, higher sensitivity, improved chromatographic resolution and improved column lifetime will be discussed.

Hydrophilic interaction chromatography (HILIC) is a chromatographic technique that has been used to improve retention of very polar species that retain poorly in reversed-phase. This is achieved by utilizing a high organic-low aqueous mobile phase in combination with a polar stationary phase. Combining this chromatographic technique with highly efficient ethylene bridged hybrid (BEH) particles results in faster methods that exhibit improved polar retention, higher sensitivity, improved chromatographic resolution and significantly improved column lifetime. Chromatographers can, therefore, meet the challenges of developing separations that completely characterize the constituents of samples.
HILIC offers several benefits over reversed-phase chromatography with regards to MS response and simplification of sample preparation methods. Due to the highly organic (> 80%) mobile phase utilized in HILIC, sensitivity in electrospray MS is improved through efficient mobile phase desolvation and compound ionization.[1] Additionally, sample clean-up by protein precipitation or SPE can be directly analyzed without solvent evaporation and reconstitution, reducing sample handling steps and greatly improving the number of samples that can be analyzed.[2]

[1] E. S. Grumbach, D. M. Wagrowski-Diehl, J. R. Mazzeo, B. Alden and P. C. Iraneta, LCGC, Vol. 22, No. 10, 1010-1023 (October 2004)
[2]W. Naidong, Rapid Commun. Mass Spectrom., 16, (2002) 1965-1975