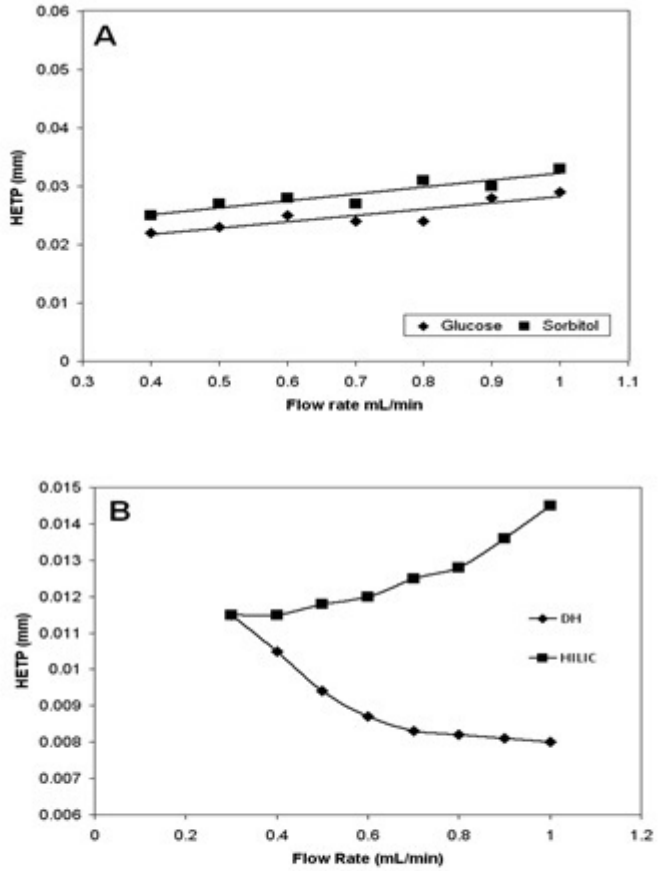
Aqueous Normal Phase ANP HPLC is a distinctly different retention mode than Hydrophilic Interaction Liquid Chromatography or HILIC.

In HILIC, evidence has shown that retention is achieved by partitioning in and out of a water layer surrounding the stationary phase surface. With a much less polar surface **TYPE-C silica** columns do not exhibit this same partitioning retention behavior.

Speculated local solvent displacement in ANP retention is likely to lead to faster mass transfer than partitioning in and out of a water layer. The figure below illustrates the difference in efficiency measured as height equivalent of a theoretical plate, *(HETP)* between an ANP column and a HILIC column. The significant difference in van Deemter plots suggests that the two mechanisms are very different.

See also: What are the main differences between ANP and HILIC?



Plots of HETP versus flow rate. (A) Glucose and sorbitol on DH column (2.1 x 150 mm, particle size 4 µm) in a 80:20 ACN/DI water + 0.1% formic acid mobile phase. (B) Comparison of commercial HILIC (4.6 x 150 mm, particle size 3.5 µm) and DH (4.6 x 150 mm, particle size 4.0 µm) columns for ANP retention of uracil. Mobile phase same as A.

MicroSolv Technology Corporation
9158 Industrial Blvd. NE, Leland, NC 28451
tel. (732) 380-8900, fax (910) 769-9435
Email: customers@mtc-usa.com
Website: www.mtc-usa.com