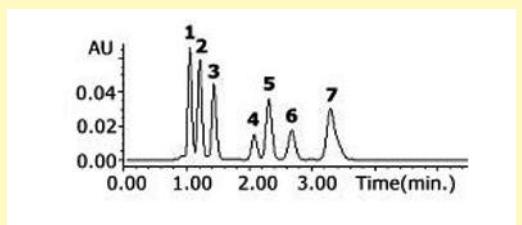
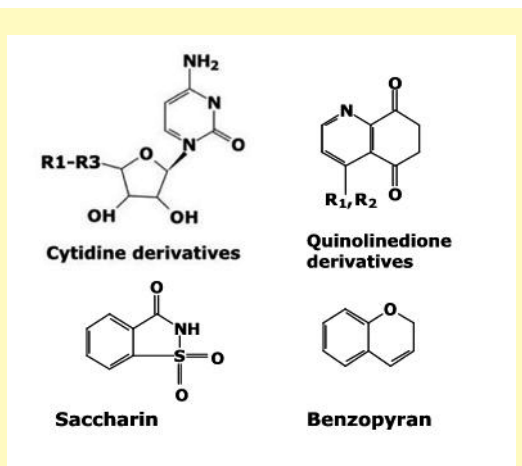


Related Compounds: Prodrugs for the Treatment of Cancer by Reverse Phase Mode.

Method Conditions

Column: Cogent UDC Cholesterol™, 4µm, 100Å.
Catalog No.: 69069-7.5P
Dimensions: 4.6 x 75 mm
Mobile phase: 60:40 acetonitrile/DI water
 + 0.5% perchloric acid
Flow rate: 1.0 mL/minute
Injection Volume: 5 µL
Samples.Peaks: Listed in Table 1,
 1 mg/mL of each in acetonitrile + DI water
Detection: UV 270 nm



Discussion

The Cogent UDC-Cholesterol™ stationary phase has been shown to have reversed phase properties but its hydrophobicity is less than that of the C18 moiety on the same support. An example of a reversed phase separation in water/acetonitrile (0.5% perchloric acid) is shown for the analysis of a sample containing a number of related compounds. The properties of the solutes are listed in **Table 1**. When comparing the properties of Compounds 2 and 3, it is interesting to note that 2 is more hydrophobic than 3 but its retention is shorter. The UDC-Cholesterol column has been shown to have shape selectivity which might explain why the less hydrophobic compound is retained longer. In general the more polar compounds elute earlier than the more hydrophobic species. Compound 7 has no polar functionalities at all so it is the most retained under reversed phase conditions.

The deviations from an exact correlation between either hydrophobicity or polarity is probably due to the shape selectivity properties of the cholesterol bonded moiety. However, the overall mechanism is reversed phase since all compounds display a decrease in retention as the amount of acetonitrile is increased in the mobile phase up to 90%. There is one difference with respect to the elution order in MeOH vs. ACN; Compounds 4 and 5 are switched in elution order with the saccharin species eluting before the quinolinedione-R1 when methanol is used as a modifier. The retention mechanism for some of these compounds changes when formic acid is added to the aqueous component of the mobile phase containing acetonitrile.

For more information visit www.MTC-USA.com

Table 1

Solute	Mol Wt.	BpKa	Log P
1 Cytidine-R1	397	3.73	1.54
2 Cytidine-R2	454	3.73	3.66
3 Cytidine-R3	425	3.73	2.66
4 Quinolinedione-R1	536	-	3.46
5 Saccharin	536	5.36	2.96
6 Quinolinedione-R2	520	-	2.74
7 Benzopyran	396	-	2.80

Cat. No.	Description
69069-7.5P	Cogent UDC Cholesterol™ HPLC Column, 4µm ,100Å 4.6mm x 75mm.