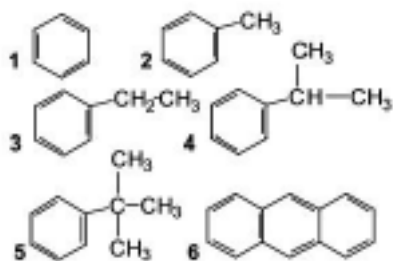


Cogent™

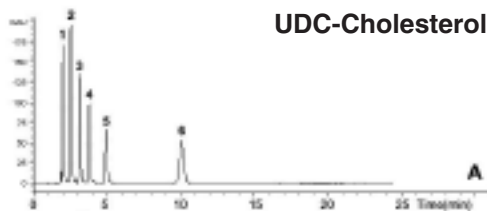
UDC Cholesterol™

with TYPE-C Silica™

Analytes



UDC-Cholesterol



Bidentate C18

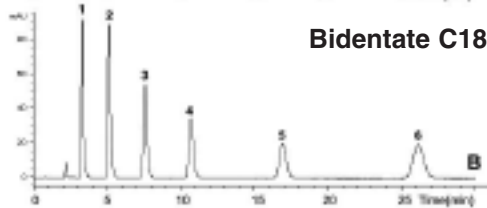


TABLE 1

Column	k1'	k2'	a= k2'/k1'
A. Cogent UDC	4.11	9.46	2.30
B. Cogent BDC18	19.98	31.49	1.58

Shape and Size Selectivity of Cholesterol Columns

Method Conditions

Column:	A: Cogent UDC Cholesterol, 4 μ m, 100Å B: Cogent Bidentate C18, 4 μ m, 100Å
Catalog No.:	A: 69069-7.5P B: 40018-75P
Dimensions:	4.6 x 75 mm
Mobile phase:	70:30 methanol/DI water
Flow rate:	1.0 mL/minute
Injection Volume:	5 μ L
Sample:	Universal LC Test Mix 1. benzene 4. isopropyl benzene 2. toluene 5. tert.-butylbenzene 3. ethylbenzene 6. anthracene
Detection:	UV 254 nm

Discussion

When comparing Cogent UDC (cholesterol) and Cogent BD C18 columns, the cholesterol phase is less hydrophobic under these conditions. However from the two chromatograms shown a very interesting property of the cholesterol phase can be observed. The Cogent UDC column exhibits enhanced selectivity for anthracene when compared with the BD C18 column. The selectivity factor (α) for both columns is listed in Table 1. The anthracene molecule is much longer and planar when compared to tert.-butylbenzene. While the retention remains clearly lower for the UDC column the selectivity for anthracene with respect to tert.-butylbenzene is considerably higher than the BD C18 phase. This phenomena is due to the fact that cholesterol is a liquid crystal in the native state and that it retains a relatively ordered structure on the surface. While this example shows relatively simple molecules, the principle will work for complex drugs and in any type of separation involving selectivity for planar molecules vs. nonplanar or more bulky molecules.

For more information visit www.MTC-USA.com

Cat. No. Description

69069-7.5P	Cogent UDC-Cholesterol HPLC Column, 4 μ m, 100Å 4.6mm x 75mm
40018-75P	Cogent Bidentate C18 HPLC Column, 4 μ m, 100Å 4.6mm x 75mm