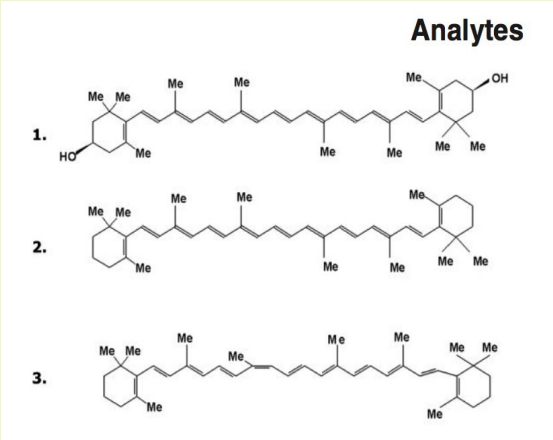
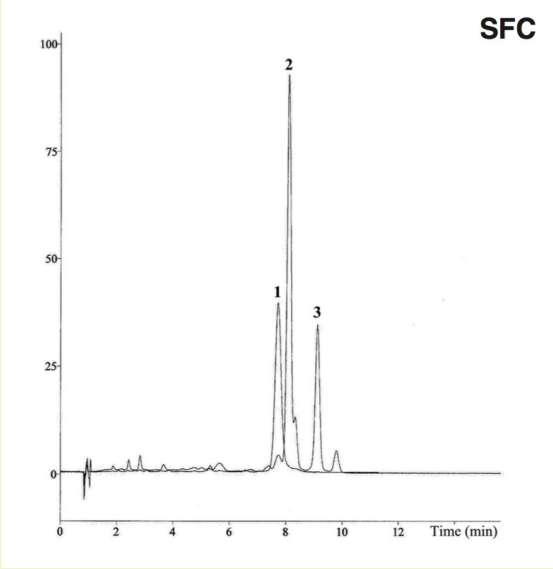
# Selectivity & Retention for Carotenoids in SFC

## Supercritical Fluid Chromatography




**Notes:** The small peaks in the chromatogram are impurities and/or degradation products in the samples. The mobile phase modifier is methanol.

### Method Conditions

**Column:** **Cogent Bidentate C18™**, 4µm, 100Å

**Catalog No.:** 40018-25P

**Dimensions:** 4.6 x 250 mm

**Mobile Phase:** 15% Methanol/ 85% carbon dioxide

**Outlet pressure.:** 15 MPa

**Injection vol.:** 5µL

**Flow rate:** 3 mL/min

**Detection:** UV 440 nm

**Peaks:** 1. Zeaxanthin
2. All trans beta-carotene
3. 13 cis beta-carotene

### Discussion

Cogent TYPE-C Silica (silica-hydride), an evolutionary material now well-established in HPLC for its versatility and wide range of selectivities, can also be used for supercritical fluid chromatography (SFC). In HPLC, Cogent TYPE-C columns are known to retain many polar compounds in the aqueous normal phase mode; this application presents the separation behavior of the Cogent Bidentate C18 column for three carotenoids (zeaxanthin, all trans beta-carotene and 13 cis beta-carotene) using the SFC technique. High efficiency and excellent peak symmetry were obtained with this column when compared with others. An interesting result is the relatively long retention time of zeaxanthin, which is eluted near all trans beta-carotene. This unusual behavior displays the ability of Bidentate C18 to retain polar compounds more strongly than typical C18 phases in SFC.



MANUFACTURED BY:
MICROSOLV TECHNOLOGY CORPORATION
9158 Industrial Blvd NE
Leland, NC 28451
p: 1.732.380.8900
f: 1.910.769.9435
customers@mtc-usa.com
www.Cogent-HPLC.com