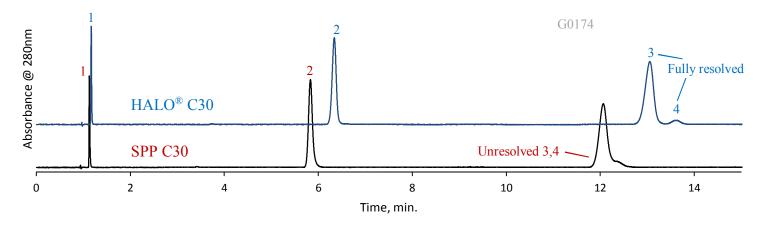
# HALO: | Fused-Core® Particle Technology

Application Note: 180-V

# Vitamin K1 Isomer Analysis on HALO® C30



#### **PEAK IDENTITIES:**

- 1. Menadione (K3)
- 2. Menaquinone 4 (K2)
- 3. 2,3-trans-phylloquinone (K1)
- 4. cis-phylloquinone (K1)

### **TEST CONDITIONS:**

Column: HALO 160 Å C30, 2.7 μm, 4.6 x 150 mm

Part Number: 92114-730

Mobile Phase A: Water Mobile Phase B: Methanol

Isocratic: 95% B
Flow Rate: 1.5 mL/min
Initial HALO Pressure: 341 bar
Initial Competitor Pressure: 371 bar

Temperature: 25°C

Detection: UV 280 nm, PDA Injection Volume: 1.0 µL Sample Solvent: Methanol

Data Rate: 40 Hz

Response Time: 0.025 sec.

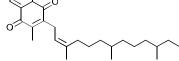
Flow Cell: 1 µL

LC System: Shimadzu Nexera X2

## **STRUCTURES:**

Vitamin K3: Menadione

Vitamin K2: Menaguinone 4



Vitamin K1: 2,3-trans-phylloquinone

Vitamin K1: cis-phylloquinone

Vitamin K, a fat-soluble vitamin, is beneficial for blood clotting and bone health. Vitamin K1 is produced from plants and can be found in high amounts in green vegetables. Vitamin K1 can also be converted into K2 within the body, while K3 is a synthetic form of vitamin K. The *cis* form of K1 is bio inactive so it is important to monitor how much is present in vitamin supplements. Baseline resolution of K1 isomers is obtained on a HALO<sup>®</sup> C30 column compared to a coelution on a competitor SPP C30 column.

