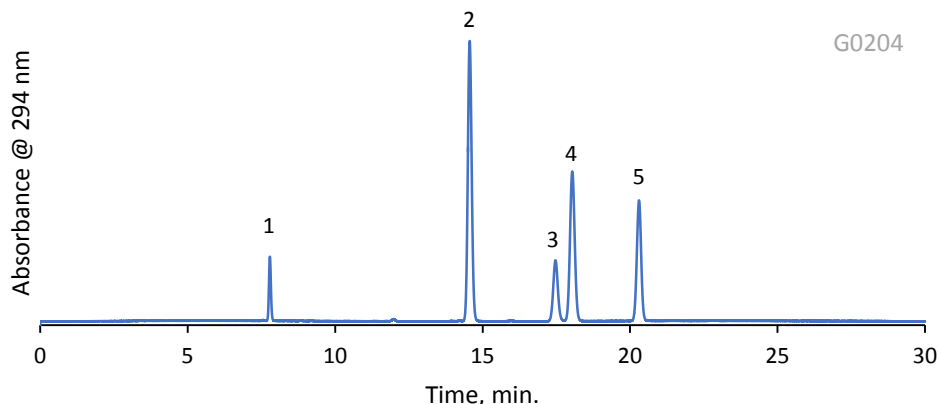


Application Note: 210-V

## Analysis of Vitamin A and Vitamin E Isomers using GB Method



### PEAK IDENTITIES:

1. Retinyl Acetate
2.  $\delta$ -tocopherol
3.  $\gamma$ -tocopherol
4.  $\beta$ -tocopherol
5.  $\alpha$ -tocopherol

### TEST CONDITIONS:

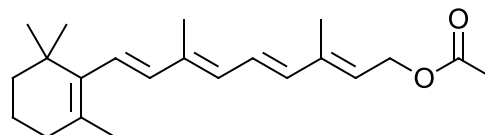
Column: HALO 160 Å C30, 2.7  $\mu$ m, 4.6 x 250mm  
Part Number: 92114-930

Mobile Phase A: Water  
Mobile Phase B: Methanol

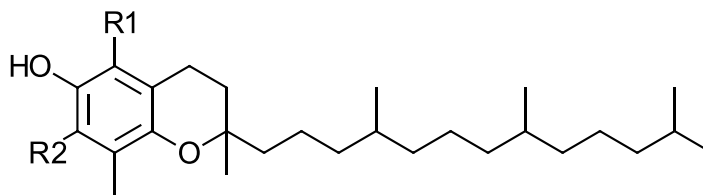
Gradient: Time	%B
0.0	96
13.0	96
20.0	100
24.0	100
24.5	96
30.0	96

Flow Rate: 0.8 mL/min  
Initial Pressure: 237 bar  
Temperature: 20°C  
Detection: 294 nm, PDA  
Injection Volume: 10  $\mu$ L  
Sample Solvent: Methanol/ Ethanol  
Data Rate: 14 Hz  
Response Time: 0.12 sec.  
Flow Cell: 5  $\mu$ L semi-micro  
LC System: Agilent 1100

### STRUCTURES



Retinyl acetate



Tocopherol	R1	R2
Alpha ( $\alpha$ )	CH <sub>3</sub>	CH <sub>3</sub>
Beta ( $\beta$ )	CH <sub>3</sub>	H
Gamma ( $\gamma$ )	H	CH <sub>3</sub>
Delta ( $\delta$ )	H	H

The 2.7 $\mu$ m HALO® C30 is an ideal choice for the separation of vitamin A and the isomers of vitamin E using the official GB method. The shape selectivity of C30 allows for baseline resolution of gamma and beta tocopherol, which typically coelute on other bonded phases.