

Separation of Vitamin A Isomers

Vitamin A, also called retinol, is a fat-soluble vitamin that has several important functions, among them the prevention of night blindness, promoting growth, and enhancing immunity. Although vitamin A is present in animal food products, in vegetables it is present as pro-vitamin A, a precursor of vitamin A, usually in the form of β -carotene. As shown in Figure 1, in addition to the all-trans form, some isomers of vitamin A are also present. This application shows the separation of the all-trans and 9-cis retinol isomers using a high coverage 3 micron packed C18 column. The UV detector wavelength was set at 325nm, the absorption maximum for retinol.

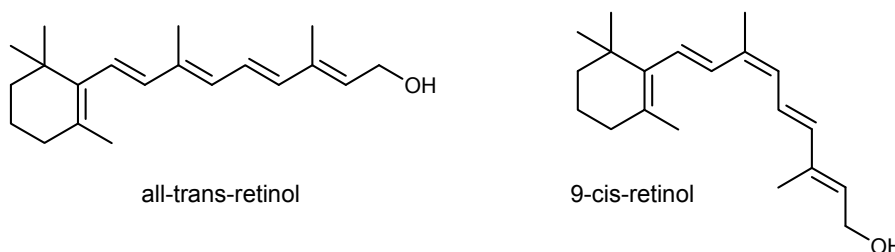
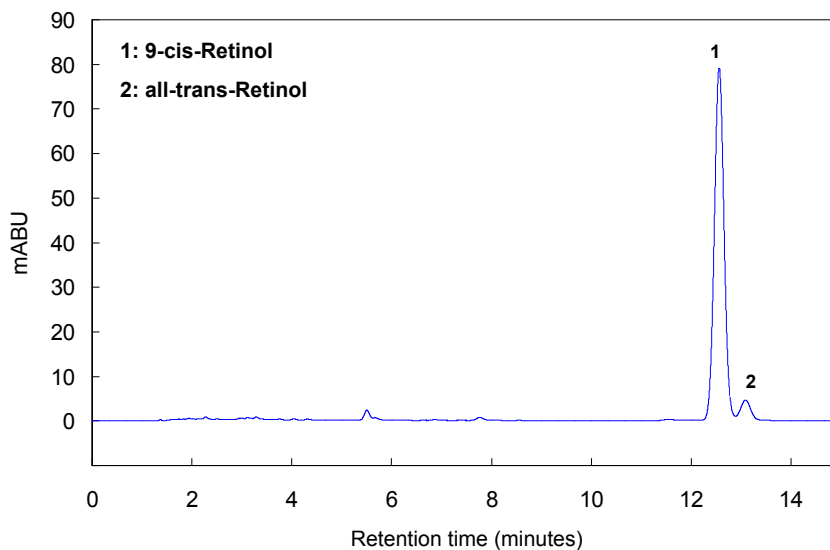


Figure 1. Isomers of vitamin A

Table 1. Conditions

Column:	TSKgel ODS-100Z, 3μm, 4.6mm ID x 15cm
Mobile phase:	water/acetonitrile (20/80)
Flow rate:	1.0mL/min
Detection:	UV@325nm
Temperature:	40°C
Injection vol.:	10 μ L

Figure 2. Chromatogram of vitamin A isomer reference standards (50mg/L each)





TOSOH

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TOSOH Bioscience LLC
3604 Horizon Drive, Suite 100
King of Prussia, PA 19406
Orders & Service: (800) 366-4875
Fax: (610) 272-3028
www.separations.us.tosohbioscience.com
email: info.tbl@tosoh.com