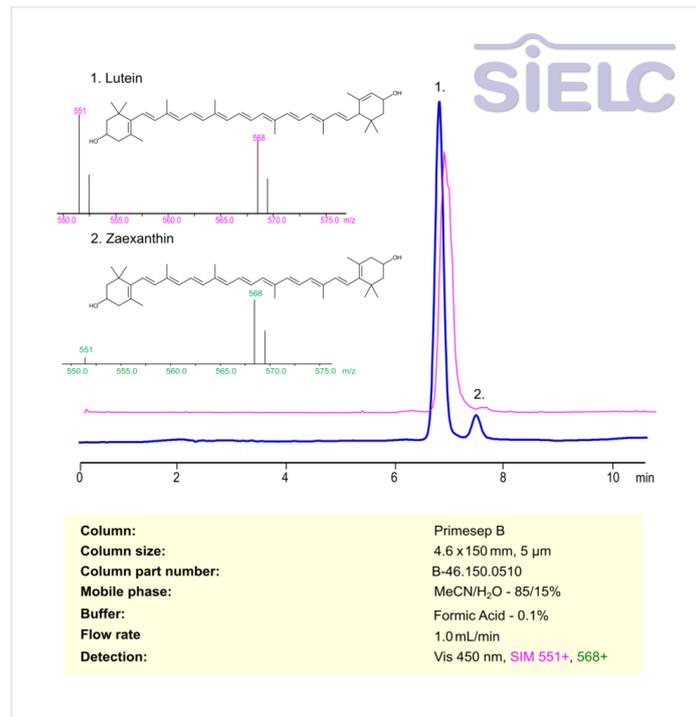


HPLC MS Method for Analysis of Lutein and Zeaxanthin in Supplements on Primesep B Column



Separation type: Liquid Chromatography Mixed-mode SIELC Technologies

Lutein is an oxygenated carotenoid, or xanthophyll, with the chemical formula C₄₀H₅₆O₂. It has a chain of conjugated double bonds and hydroxyl groups at each end, which give it strong antioxidant properties. Lutein's ability to absorb blue light helps protect the eyes from oxidative stress. In plants, lutein stabilizes chlorophyll and protects cells from light-induced damage.

Zeaxanthin is also a xanthophyll carotenoid, sharing the same chemical formula as lutein, C₄₀H₅₆O₂, but with a different arrangement of double bonds. This structural variation allows zeaxanthin to be particularly effective in protecting the central macula of the retina. It filters harmful blue light and shields the eyes from oxidative damage, similar to lutein.

Lutein, Zeaxanthin can be retained, separated and analyzed using a Primesep B mixed-mode stationary phase column. The analysis employs an isocratic method with a simple mobile phase comprising water, acetonitrile (MeCN), and formic acid as a buffer. This method allows for detection using Vis 450 nm.

Method Parameters

Column	Primesep B, 4.6 x 150 mm, 5 µm, 100 Å, dual ended
Mobile Phase	MeCN – 85%
Buffer	Formic Acid -0.1%
Flow Rate	1.0 mL/min
Detection	Vis 450 nm, ESIMSSIM551 +, 568+

Quelle: <https://sielc.com/hplc-ms-method-lutein-zeaxanthin>