

Quantitative Determination of Carotenoids in Dried Blood Spots by LC-UV

Carotenoids are important biomarkers for the intake of fruit and vegetables. They exhibit antioxidant effects and beta-cryptoxanthin, alpha-carotene and beta-carotene serve as precursors for Vitamin A. Carotenoids are one of the main dietary sources of Vitamin A in humans.

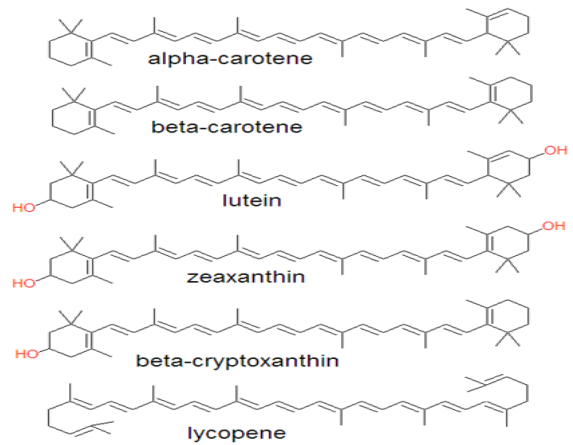
There is no official reference range for carotenoid in plasma/serum. Based on a pan-European cohort of adult humans of both sexes (n=40 000), the following ranges (95% CI) can be expected:

	Low	Mean	High
Lutein (µmol/L)	0.11	0.31	0.65
Zeaxanthin (µmol/L)	0.01	0.05	0.12
β-Cryptoxanthin (µmol/L)	0.04	0.28	0.81
α-Carotene (µmol/L)	0.02	0.09	0.25
β-Carotene (µmol/L)	0.10	0.43	1.02
Lycopene (µmol/L)	0.10	0.47	1.02

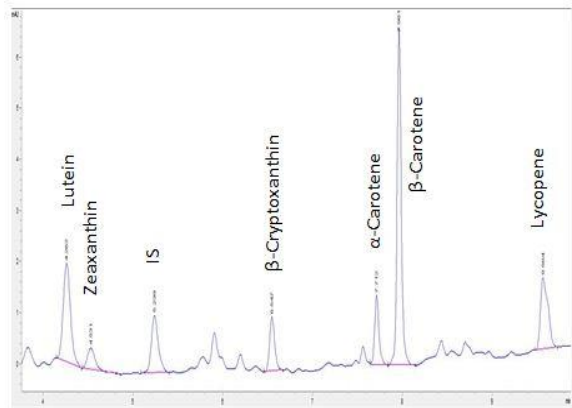
Vitas AM-127 is a LC-UV assay using water-based elution from the dried blood spot before subsequent protein precipitation and analysis.

Method details:

- Technique: LC-UV
- Sample Matrix: Dried Blood Spots
- Species: Human
- Sample amount: One droplet blood
- Range: 0.005-16 µM
- Detection Limit: 0.001-0.0029 µM
- Quantification limit: 0.0032-0.0096 µM
- Intra-day precision: 2.68-6.71%
- Inter-day precision: 7.4-9.7%
- Shipping temp: Ambient



Chromatogram of carotenoids in dried blood spots



Vitas is a Norwegian GMP certified chemical analysis contract lab, with 20 years experience in providing a high quality, custom chromatographic analytical service based on cutting-edge knowledge and technology.