Quantitative analysis of alpha-tocopherol from whole blood in dried blood spots (DBS) using LC-FLD

**Vitamin E** refers to a group of ten lipid-soluble compounds that include both tocopherol and tocotrienols. Vitamin E has many biological functions, the antioxidant function being the most important and best known. α-tocopherol is the most biologically active form of vitamin E and the form that is preferentially absorbed and accumulated in humans.

Normal plasma concentration in humans for vitamin E measured as α-tocopherol is about 8-28 µM. Vitamin E deficiency causes nerve problems due to poor conduction of electrical impulses along nerves due to changes in nerve membrane structure and function.

Quantification of α-tocopherol from DBS is performed by a simple extraction and fluorescence detection (LC-FLD). A special stabilizing solution to impregnate the DBS card is needed.

**Method details:**

- **Technique:** LC-FLD
- **Sample Matrix:** Dried blood spot
- **Species:** human/animal
- **Sample amount:** One blood spot
- **Range:** 1-40 µg/ml
- **Detection Limit:** 0.3 µg/ml
- **Quantification limit:** 1.0 µg/ml
- **Intra-day precision:** 1.6 %
- **Shipping temp:** Ambient in an O₂ proof aluminum bag

**Chromatogram of α-Tocopherol 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.