Vitamins

Vitamin analysis for medicinal products, food and cosmetics

The PhytoLab Newsletter dated 25 April 2023 provided an overview of the services that we offer in the field of food supplements. Vitamins are outstandingly important value-adding ingredients in this and other product groups.

Strategic evaluation

If a product is advertised as containing certain vitamins, appropriate measures must be taken in the course of the product development process to ensure that this is the case. Authorities, market participants and NGOs are imposing increasingly stringent standards with respect to compliance with the relevant specifications and expectations. The numerous sources of vitamins listed in Annex II to the EU Food Supplements Directive are posing growing challenges for efficient analytics, as are the diverse matrices (individual preparations, vitamin mixtures, galenical forms (capsules, granules, liquids, creams, etc.) and, last but not least, the frequent practice of combining with plant extracts).

Capable methods for demanding products

We use modern (U)HPLC methods for vitamin analysis in the PhytoLab laboratory. These enable reliable and exact determination of vitamins in food supplements, fortified foods, pharmaceuticals and cosmetics. Determination of **vitamin B5** (**pantothenic acid**) in complex matrices such as vitaminised tea blends or food supplements with plant extracts poses a special challenge. In this case, sufficient specificity can only be achieved by means of the LC-MS technique. A powerful multimethod developed in-house at PhytoLab offers a means of simultaneously determining **vitamins B1, B2, B3, B5** and **B6**, which are often combined with one another. PhytoLab has also developed and validated a method of determining low-dose B vitamins (**biotin**, **folic acid** and **vitamin B12**) on the basis of immunoaffinity chromatography purification and concentration processes. We use an HPLC-UV technique based on the official method according to Article 64 of the German Food and Feed Code (LFGB) (code number L 00.00-85) to determine **vitamin C**. Apart from the analysis of water-soluble vitamins, we also offer procedures for determination of fat-soluble **vitamin E** (**tocopherol** and **tocopheryl acetate**) and **vitamin D2/D3**, which are soon to be supplemented by methods for **vitamin A** and the **vitamin K** derivatives.

Is your vitamin product stable?

The vitamin content that is advertised or required for technological reasons (e.g. as an antioxidant) must be stable within the relevant limits for the product. We develop the study design for your products, keep them in storage under defined climatic conditions (for medicinal products in accordance with ICH guidelines) and conduct all other relevant tests in addition to the vitamin analysis.

We would be delighted to draw up an offer for analysis and stability testing of your vitamin-containing products.

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