

Know what's inside.



## Microcystins

30+  
since 1989

By consuming dietary supplements, consumers try to supplement and enhance their diet in a meaningful way. Currently, food supplements with microalgae are in high demand as they contain valuable ingredients such as omega-3 fatty acids, minerals and bioactive substances such as chlorophyll and carotenoids.

In addition to the health-promoting ingredients, however, food supplements from and with microalgae may also contain toxic ingredients, such as microcystins, which can accumulate in further processing.

Microcystins are formed by cyanobacteria (also known as blue-green algae) and are toxic to humans. To date, more than 80 structural variants are known, which differ in their acute toxicity. Ingestion of certain structural variants of microcystins, e.g. microcystin-LR, can lead to liver damage and should thus be prevented at all costs. The monitoring of algae-based or microalgae-added food supplements is therefore particularly relevant.

A maximum limit value already exists for microcystin-LR in drinking water, but the legal regulation of these substances is also relevant in other products as the toxins accumulate mainly in microalgae such as spirulina and chlorella.

TeLA GmbH has developed an HPLC-MS/MS method for the determination of seven structural variants of microcystins, as well as nodularin. For all analytes a limit of quantification of 25 µg/kg applies.

The analysis spectrum of microcystins includes the following structural variants:

- Nodularin
- Microcystin-LR
- Microcystin-LA
- Microcystin-LF
- Microcystin-LY
- Microcystin-LW
- Microcystin-YR
- Microcystin-RR