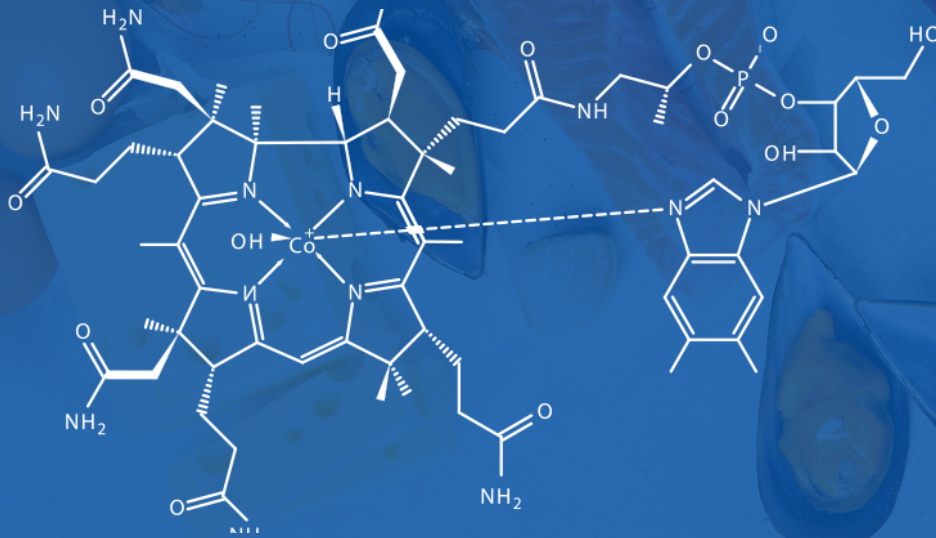


Vitamin B12



Vitamin B12 (Cyanocobalamin) belongs to the group of water-soluble vitamins involved in metabolism. As vitamin B12 contains the mineral cobalt, compounds with vitamin B12 activity are collectively called "cobalamins". The method used for determination of vitamin B12 is a competitive enzyme immunoassay for the quantitative determination of cyanocobalamin in different types of food, determined by ELISA.

Vitamin B12 = Cyanocobalamin



Functions/Health effect:

Although needed only in small concentrations, vitamin B12 plays a key role in the function and development of brain and nerve cells as well as red blood cells. It is important for nucleotide biosynthesis, iron intake, and metabolism of amino acids. Unlike plants, animals need vitamin B12 as a cofactor in DNA synthesis, in both fatty acid and amino acid metabolism.

Sources:

Vitamin B12 is naturally present in foods of animal origin: meat, clams, liver, fish, poultry, eggs, and dairy products. Grain-based foods can be enriched with the vitamin.

Supplements and fortified foods contain B12 in its free form, so they may be more easily absorbed. The most common form of vitamin B12 in dietary supplements is cyanocobalamin. Other forms of vitamin B12 in supplements are adenosylcobalamin, methylcobalamin, and hydroxycobalamin.

Did you know that?

Vitamin B12 was discovered as a result of pernicious anemia, an autoimmune disorder in which the blood has a lower than normal number of red blood cells, due to a deficiency in vitamin B12.

The ability to absorb the vitamin declines with age, especially for over 60 years old. Consumption of foods fortified with vitamin B12 may also be recommended to those on plant-based diet as natural food sources of vitamin B12 are limited to animal foods.

Industrial production of vitamin B12 is achieved through fermentation of selected microorganisms. The completely synthetic laboratory synthesis of B12 was achieved by Robert Burns Woodward and Albert Eschenmoser in 1972, though this process has no commercial potential, requiring almost 70 steps and having a yield well below 0.01%.

A B vitamin complex supplement is often touted to boost energy levels and mood. People who have a B vitamin deficiency may indeed feel a rise in energy levels after using the supplement. However, there is no evidence of benefit for those without the deficiency.

Food
division

