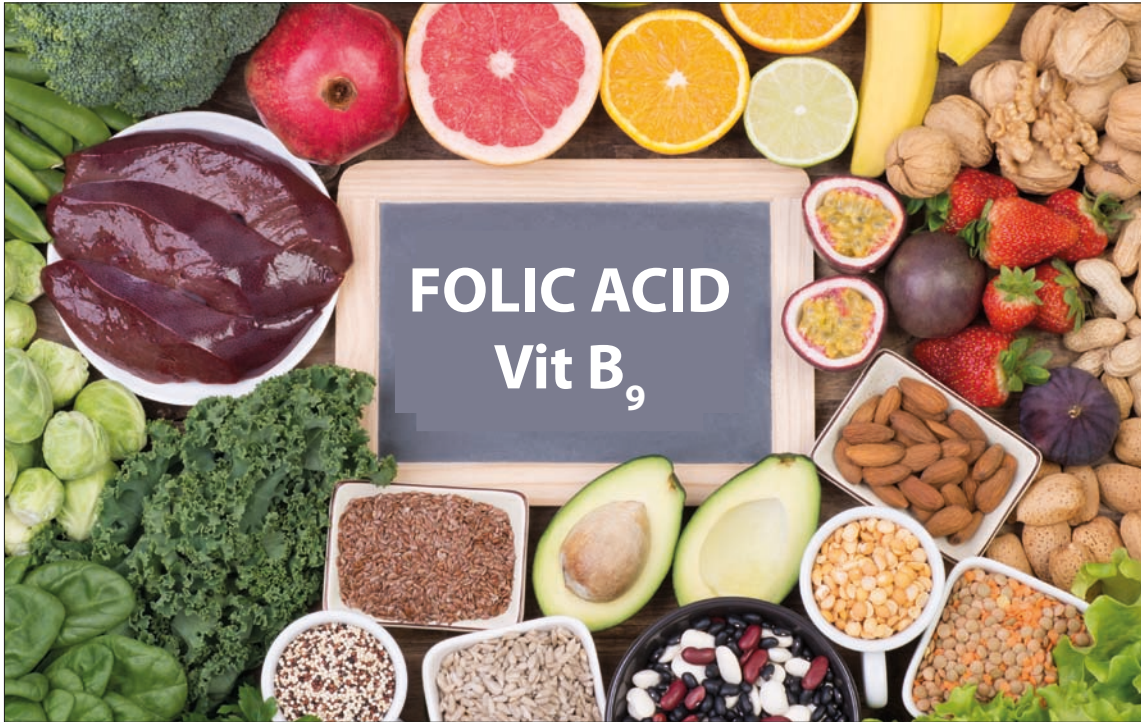


ID-Vit[®] Folic acid



Microbiological test kit for the determination of folic acid in serum

- ▶ Simple microtiter plate test
- ▶ Simple measurement in ELISA-Reader
- ▶ Cost reduction in comparison to conventional analysis
- ▶ Single microtiter strips for cost-efficiently working
- ▶ Automation possible



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ID-Vit® Folic acid

Microbiological test kit for the determination of folic acid in serum using a *Lactobacillus rhamnosus* coated microtitre plate

Folic acid, a water soluble, light and temperature sensitive vitamin of the B complex (vitamin B₉), is involved in all growth and development processes of the body. Folic acid is essential for the formation of red blood cells, for optimal functioning of the bone marrow and for healthy nerve activity. Folic acid is, moreover, essential for cell division (therefore its importance in foetus development).

Folic acid deficiency widespread

Even though most plant and animal based foods contain folic acid, a deficiency of folic acid is the most widespread vitamin deficiency in Europe and North America. According to information from the German Nutritional Society (Deutschen Gesellschaft für Ernährung) only one in four Germans absorb sufficient folic acid – the result of one-sided nutritional habits with little fresh fruit and vegetables. But also age, disease and the influence of specific medications e.g. Cotrimoxazol, may lead to resorption disturbances and to an associated deficiency.

Lowered folic acid levels occur because of:

- a decreased supply (e. g. through alcoholism or Folic acid antagonists),
- a disrupted resorption (e. g. in celiac disease, CED),
- an increased requirement (e. g. during pregnancy, in anaemic or cancerous diseases).

Symptoms of Deficiency

The first symptoms of deficiency are weariness, irritability, concentration problems and loss of appetite; further consequences are inflammation of the mucous membranes, anaemia and grievous neurological damage.

During pregnancy – when the folic acid requirements are doubled – a deficiency in folic acid may lead to premature birth and grievous deformities. An optimal subsistence of folic acid during the pregnancy can reduce the risk of neural tube defects in the foetus by 85%.

Because a deficiency in vitamin B₁₂ as well as a folic acid deficiency may be responsible for a megaloblastic anaemia, the determination of both these vitamins is important for the clinical picture so that the correct vitamin may be supplemented. The treatment of megaloblastic anaemia in the case of vitamin B₁₂ deficiency with folic acid may lead to irreversible damage of the central nervous system.

ID-Vit® Folic acid	
Matrix	Serum
Sample volume	100 µL
Test principle	Direct MTP assay
Cat. No.	KIF005



US: all products: Research Use Only. Not for use in diagnostic procedures.

Folic Acid and Arteriosclerosis

A folic acid deficiency is known to be the most common cause of hyperhomocysteinaemia. The hyperhomocysteinaemia has, meanwhile, been recognised as a independant factor in arteriosclerosis. Therefore **the determination of folic acid within the framework of a KHK risk analysis** may be carried out. Independent of the influence of folic acid on the homocystein levels, a further positive effect on the endothel function in heart patients has been ascertained – it has been determined that in an on-going therapy with organic nitrates, a nitrate tolerance develops – in such patients the increased release of oxygen radicals occur without folic acid supplementation (Verhaar et al. 2002).

Please note: Specimens should not be collected during treatment with antibiotics; Specimens must be protected from light.

Test characteristics

Reference value for human serum
(n = 74) Folic acid: 3.8–23.2 µg/L

Precision and reproducibility

Intra assay (n = 19)		
	Folic acid [µg/L]	VC [%]
Sample 1	12.69	4.7
Inter assay (n = 5)		
	Folic acid [µg/L]	VC [%]
Sample 1	12.24	5.68

Literature:

- Verhaar et al. (2002) Folates and cardiovascular diseases. *Arterioscler Thromb Vasc Biol* 22: 6-13