

# Vitamin K Menaquinone

## General:

Menaquinone is considered the effective K vitamin (vitamin K2). It can be partly replaced by phylloquinone, which is supplied through vegetables (intact intestinal flora!). Physiological effects are: intrahepatic formation of the prothrombin complex (factors II, VII, IX, X), activation of protein C and protein S; extra hepatic formation of osteocalcin in the osteoblasts. The daily requirement is approx. 0-1 mg/day. In deficiencies, impaired coagulation and hemorrhaging occur. In newborns of vitamin K deficient mothers, intracranial bleedings can occur by hypoprothrombinemia. Chronic intestinal disease or malabsorption can lead to vitamin-K deficiency. Overdosage symptoms are not described, however, the effect of oral anticoagulants such as coumarin can be reduced.

Indication: impairment of coagulation, bleedings

Material: 1 ml serum

Preanalytics: light protected dispatch is strictly recommended!

TAT: 7-10 days\*

Method: LCMS

Units: ng/l

Ref.- range: 50 - 900 (fasting) up to 1800 (pp.)

The following test is available:

- **Vitamin K2 (Menaquinone-7, MK-7)**

## General:

Vitamin K2 is produced by bacteria and is found in only a few foods, particularly cheese and the soja food (japanese food natto). It shows a positive impact on bone metabolism, counteracts vascular calcification and acts like coenzyme Q-10 as an electron carrier in the mitochondria. Under therapy with vitamin K antagonists, the substitution of vitamin K2 is strictly contraindicated since even small amounts (10 µg / d) significantly influence the blood coagulation.

MK-7 has a half-life time of approximately 48-72 hours and thus a significantly longer half-life time than vitamin K1 with approximately 1-4 hours. Excretion is mainly via the bile and to a lesser extent renally as side chain shortened glucuronide. Usually low MK-7 levels (< 400 ng / l) are observed in non-substituted patients. Under substitution the values rise significantly. Compared to MK-7 other K2 vitamers such as menaquinone-4, show no oral availability also in high substitutional doses (420 µg).

Material: 1.5 ml serum, **frozen**

TAT: 7-10 days\*

Method: LCMS

Units: ng/l

Ref.- range: >200

For complete list of laboratory test offered at Freiburg Medical Laboratory, please visit  
<http://www.fml-dubai.com/parameter-listings/>