Homocysteine

General:

Homocysteine is an amino acid, which is absent in food and which is formed in the organism from the essential amino acid methionine. Its physiological significance is to release methyl groups. Homocysteine is toxic; therefore it is converted immediately into cysteine or methionine in the intact metabolism. These transformations need vitamins B6, B12 and folic acid as cofactors. The classical homocysteinuria is a rare autosomal recessive inherited disorder (mutation of cystathionine-β-synthase or methylentetrahydrofolatreductase, see also MTHFR) and presents with excessively high homocysteine levels in plasma.

In this condition, already young patients suffer from atherogenic damages and cardiovascular problems. Homocysteine shows an endotheliumdamaging effect by hydrogen peroxide splitting; it induces endothelium degeneration and the proliferation of smooth muscle cells into the vessel wall and causes swelling of the basal membrane. Increased platelet aggregations are observed. As a consequence, arteriosclerotic plaques are formed by increased leukocyte activation and lipid depositions.

Thus an increased homocysteine level is considered as independent cardiogenic risk factor. Blood investigation is recommended (better than urine). Folic acid and Vitamin B substitution are recommended in elevated homocysteine levels.

Indication:	Risk factor screening, differential diagnosis thrombotic-embolic event
Material:	1 ml serum (frozen)
Preanalytics:	send immediately
Stability:	4 weeks at 2 to 8°C (if centrifuged immediately after blood collection).
TAT:	3 days, FML
Method:	PHO
Units:	µmol/l
Ref.- range:	see report
Note:	Hemolysis can result in falsely elevated values

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

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^ non-accredited parameter

*performed in a collaborating laboratory (Germany)