

# Tyrosine phosphatase antibodies

## General:

The islet-cell antigen IA-2 (105.8 kDa; chromosome 2q35) belongs to the protein tyrosine phosphatases which are responsible for intracellular signal transduction. This transmembrane protein is located in the secretory granula of the insulin-producing  $\beta$ -cells as well as in other peptideproducing endocrine cells and in the neurosecretory granula of neurons in the central nervous system, pituitary gland and autonomous ganglia. AntiIA-2 recognize epitopes of the cytoplasmic C-terminal domain of the protein.

IA-2 autoantibodies (also glutamate decarboxylate autoantibodies) are detectable in patients with newly diagnosed diabetes mellitus type 1.

The antibodies, as well as the glutamate decarboxylase autoantibodies (anti-GAD), which occur in 70-75% of type I diabetes patients as well as in the Stiff-man syndrome, appear very rarely in healthy individuals. The autoantibodies are more often detectable in younger than in older diabetics. In the pre-diabetic stage the IA-2-antibodies appear usually after anti-GAD. Since the anti-IA-2 appear before the manifestation of a diabetes mellitus they are considered a prognostic marker. The autoantibodies can belong to all immunoglobulin classes and subclasses. Patients with antibodies of the subclass IgG should have a lower diabetes risk. The subclass determination could therefore be useful in the risk assessment

**Indication:** Risk estimation for the development of type I diabetes. The simultaneous determination of anti-IA-2, anti-GAD and IAA (insulin autoantibodies) allows the detection of a higher percentage of autoantibody-positive patients than the detection of islet cell autoantibodies only. For the diabetes risk estimation the number of simultaneously appearing antibodies is more important than the presence of a certain antibody.

**Material:** 1 ml serum

**TAT:** 7-10 days\*

**Method:** EIA

**Units:** IU/ml

**Ref.- range:** <10.0

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