

Elastase-1 in stool

Determination of elastase-1 (EL-1) in stool

Determination of pancreatic elastase-I in stool Human pancreatic elastase 1 is produced by pancreatic acinar cells . The enzyme is part of the pancreatic juice that is produced in the duodenum . During intestinal passage, the protein sequence of the enzyme selected for immunochemical detection is not degraded . The determination of elastase is therefore more diagnostically beneficial than chromogenic methods for the determination of chymotrypsin in faeces , the determination of lipase in faeces is also irrelevant . Human pancreatic elastase 1 activity in stool samples reflects the degree of exocrine pancreatic function . Recent applications recommend the determination of pancreatic elastase-1 in duodenal juice in a stimulated functional test. The determination of elastase-1 in stool in clinical diagnosis is of clinical importance :

- malabsorption syndrome ,
- as a screening test for pancreatic disease,
- long-term follow-up of patients with chronic pancreatitis .

Laboratory method

Determination of elastase-I in stool The laboratory method is based on immunoassay by ELISA with a monoclonal (or polyclonal) antibody to human pancreatic elastase. The stool sample is homogenized in the extraction buffer solution and, after a dilution of 1: 500, further processed by a standard ELISA procedure on a microtiter plate with POD-streptavidin detection. The kit contains 5 calibration standards in the range of 0.3-10.0 ng / ml.

Reference values

The reference values are 200–500 µg / g stool , the cut-off range is 100–200 µg / g, severe pancreatic insufficiency is determined at values <100 µg / g stool. Immunochemical determination of elastase-1 is not affected by colonic passage , replacement therapy, or other factors that affect the enzymatic determination of chymotrypsin in the stool . The specificity of the method is 93%, the sensitivity reaches 100% for severe pancreatic insufficiency, 87% for medium and light forms. This test is commonly used in pediatrics to detect cystic fibrosis with a specificity and sensitivity of almost 100%. False reduction may be due to dilution (water content) during diarrhea.

Links

related articles

- Acute pancreatitis (laboratory diagnosis)
- Chronic pancreatitis (laboratory diagnosis)
- Breath tests
- Indirect tests of pancreatic exocrine function

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