

Pancreatitis GP2

ELISA for the determination of glycoprotein 2 isoform alpha (GP2a) in human serum



Product Highlights

- Serological marker for the diagnosis of acute pancreatitis
- High sensitivity and specificity in the first days after disease onset
- Automatable

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Glycoprotein 2 Isoform alpha

and the Importance in the Diagnosis of Acute Pancreatitis

Acute pancreatitis is a gastrointestinal, inflammatory disease of the pancreas, which manifests by severe abdominal pain, nausea, vomiting, constipation and fever. Generally, the patients recover completely, but a range of complications may occur, that can take life-threatening courses. The incidence of acute pancreatitis is about 20–70 cases per 100,000 inhabitants per year.

The **pathophysiology** of acute pancreatitis is still not completely elucidated, but the premature, intra-pancreatic activation of digestive enzymes such as trypsin, lipases or phospholipases is considered to be the cause of autodigestion and thus of the inflammation of the organ. Thus, acute pancreatitis begins with the destruction of the acinar cells of the pancreas, resulting in a basolateral release of a number of proteins of the zymogen granules.

Recently, in a well-characterized animal model of acute pancreatitis, elevated serum concentrations of **glycoprotein 2** (GP2), a major component of the membrane of zymogenic granules, could be detected.

Based on this model, an **ELISA** for the determination of pancreatitis-specific GP2 was developed and the diagnostic and prognostic value of the glycoprotein 2 (GP2) concentration in serum samples of patients with acute pancreatitis was investigated.

The comprehensive study confirmed the isoform alpha of glycoprotein 2 (GP2a) as a specific serological marker of acute pancreatitis. In addition, **glycoprotein 2 isoform alpha** (GP2a) is considered a prognostic marker for severe, sometimes fatal disease progression and can be used to differentiate acute from chronic pancreatitis and pancreatic neoplasms.



Pancreatitis GP2 – Enzyme Immunoassay for the Quantitative Determination of Glycoprotein 2 Isoform alpha (GP2a) in Human Serum

Antigen

The Pancreatitis GP2 immunoassay for the determination of glycoprotein 2 is based on the use of monoclonal antibodies directed against glycoprotein 2 isoform alpha (GP2a).

Calibration

The Pancreatitis GP2 immunoassay is calibrated using internal reference samples with defined GP2 concentrations. Quantitative results are expressed in ng/mL.

Analytical Sensitivity

The analytical sensitivity was determined as limit of blank (LoB) and limit of detection (LoD).

	ANALYTICAL SENSITIVITY
Limit of Blank (LoB)	< 0,2 ng/mL
Limit of Detection (LoD)	0,2 ng/mL

Analytical Specificity

The analytical specificity was assessed by addition of potentially interfering substances to samples and determination of their influence on the measurement. A significant influence of bilirubin (up to 30 mg/L), hemoglobin (up to 1 g/L), triglycerides (up to 25 g/L) and uromodulin (up to 10 g/L) on test results was not observed.

Precision

The precision of test results was assessed by the determination of the intra- and interassay variation

by the analysis of multiple samples with different antibody activities.

	INTRAASSAY PRECISION		INTERASSAY PRECISION	
	ng/mL	CV (%)	ng/mL	CV (%)
Sample 1	3.9	6.4	3.9	7.8
Sample 2	0.8	9.9	0.8	10.3
Sample 3	0.2	12.1	0.2	29.5

Diagnostic Sensitivity and Specificity

Sensitivity and specificity were assessed by the analysis of 12 serum samples from patients with acute pancreatitis in the first three days after onset of the disease and 101 serum samples from unselected blood donors.

	DIAGNOSTIC PERFORMANCE
Sensitivity	91.7 %
Specificity	> 99 %

Publications

Roggenbuck, D., Goihl, A., Hanack, K., Holzlöhner, P., Hentschel, C., Veiczi, M., Schierack, P., Reinhold, D., Schulz, H.U. (2017) Serological diagnosis and prognosis of severe acute pancreatitis by analysis of serum glycoprotein 2. Clin. Chem. Lab. Med. 55, 854 – 64.

Lowe, A.W., Luthen, R.E., Wong, S.M., Grendell, J.H. (1994) The level of the zymogen granule protein GP2 is elevated in a rat model for acute pancreatitis. Gastroenterology 107, 1819 – 27.



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Enzyme immunoassay for the determination of glycoprotein 2 isoform alpha (GP2a) in human serum

HIGH QUALITY – MADE IN GERMANY

- Use of monoclonal antibodies against GP2
- Ready-to-use (exception: wash buffer), color- and barcoded reagents
- Quality assured handling in routine laboratories
- Short incubation times (60 min, 30 min, 15 min) at room temperature
- Quantitative determination of glycoprotein 2 isoform alpha (GP2a) in ng/mL
- Excellent diagnostic sensitivity and specificity in the first days after onset of the disease
- Correlation with the acuity of pancreatitis
- High precision and linearity within the measurement range
- CE marked
- Fully automatable
- Manufactured under licence of the patents EP 3 299 818 B1 and EP 3 516 399 B1

Product Information

Pancreatitis GP2



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Order Information

Pancreatitis GP2

(96 Determinations)

REF 3950

