Amylase / characteristics

Pancreatic amylase

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α-amylase[1] [2][3][4][5][6][7][8][9][10](**AMS**, α-1,4-glucan-4-glucan hydrolase, EC 3.2.1.1) hydrolyses the α-1-4-glycoside bond; The pH optimum of α-amylase is between 7.0-7.2. It occurs in the body in two forms - as a salivary and pancreatic isoenzyme according to organ origin. Both isoforms of AMS differ from each other in the sugar component and can be distinguished electrophoretically or by precipitation using a special lectin or antibody[11]. α-amylase is formed in the acinar cells of the pancreas and accumulates in zymogenic granules. It enters the intestinal lumen in the form of pancreatic secretion (pancreatic juice) along with other digestive enzymes. Under physiological conditions, the enzyme molecule is not absorbed by the intestinal surface and the serum level is low, corresponding to the activity of the enzyme released into the circulation directly from the glandular cells, resp. lymphatic drainage. The molecular weight of α-amylase is 55,000. A-Amylase is eliminated from the circulation in the kidneys by glomerular filtration. The macroform of the enzyme (macroamylase)[12][13][14][15][16] is formed by the binding of the enzyme to certain proteins in the blood serum, especially immunoglobulins, circulating immunocomplexes or other glycoproteins. The macroform of the enzyme has a significantly higher molecular weight (from 150,000 to 2,000,000) and is therefore not eliminated by glomerular filtration. For clinical diagnosis, serum and urinary α-amylase levels are determined and the amylase / creatinine clearance index is calculated.

Links

Related articles

- Amylase

Reference

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