

Abstract

The main interest of this work is in determination of pancreatic elastase 1 in the stool. The determination of the value of the pancreatic elastase 1 in the stool is important for specify of the function of the exocrine pancreas and it have high specificity and sensitivity. It is used for both long observation of patients with chronically insufficiency of the pancreas, also as a screening test for pancreatic illness and in differential diagnoses of malabsorbent syndrome.

We can determine values of the pancreatic elastase 1 in the stool with using the ELISA method. ELISA means enzyme linked immunoassay and it principle is based on sandwich reaction between two monoclonal antigens with high specificity against human pancreatic elastase 1.

The main objective is to determine the degree of variability in the values of the pancreatic elastase 1 in group of healthy subjects. The study will take place on four individuals and their samples will be investigated with the ELISA method in monthly intervals for six months. ELISA method was processed by a set from firm ScheBo®.

After the completion of the test it is clear, that there is a high fluctuation of the values of the pancreatic elastase 1 in this group. Values of the difference between each individual measurement exceeded the limit of 70 percent. Variation coefficient of individuals was in the range between 16,6 % to 27,7 %, with the average 22,7 % and the median 23,3 %.

Second part of this work is week test of values of pancreatic elastase 1 in two healthy individuals at temperatures from -25 °C, +8 °C, +25 °C to +37 °C. Objective of this part of the work is to determine, how much different temperatures change values of pancreatic elastase 1 in measured samples, therefore measure their stability. Also this part of work on the measurement of pancreatic elastase 1 ELISA was developed using a set from firm ScheBo ®.

The overall results of this test suggests that clinical practice, when a stool sample collected from patient, frozen and prepared in extraction buffer day prior to the analysis of the results, has reached its highest values. The values of elastase 1 in the stool are, however, when compared with the exact procedure of sample preparation(according to manufacturer's set), stable in stool samples even three days at 37 °C.

Key words: pancreatic elastase 1, ELISA test, interindividual variability, stability