Pancreastatin in Serum Technical Brief

Specimen Type	Serum
Specimen Volume	2 mL
Collection	Use a serum separator tube and allow samples to clot for 2 hours at room temperature or overnight at 4°C before centrifugation for 15 minutes at approximately 1000xg and freeze immediately. Collect the supernatant for assaying. Patients must be fasting 10-12 hours prior to collection of specimens. Patient should not be on any medications that may influence Insulin levels, if possible, for at least 48 hours prior to collection.
Minimum Volume	1 mL
Handling	Ship frozen on dry ice.
Rejection Criteria	Specimens received unfrozen. Specimens received at refrigerated temperatures. Specimens outside of listed stability. Samples submitted without two unique identifiers and date of collection.
Stability	Frozen at -20°C for 30 days. Frozen at -80°C for 180 days.
Methodology	EIA
Reference Range	Normal: 0.0 - 416.0 pg/mL
Turnaround Time	Up to 7 business days.
CPT Code	86316
Clinical Significance	Pancreastatin (PST), also called chromogranin A amide, is a 49-amino acid peptide that was first isolated from porcine pancreas. Pancreastatin is one of a number of biologically active peptides produced by proteolysis of the precursor molecule chromogranin A (CGA). It was first described as an inhibitor of insulin secretion, but since then many different effects have been reported. Pancreastatin is functional in humans in vivo, affecting both carbohydrate and lipid metabolism. Indeed, its actions are potent and specific. Pancreastatin is cleaved from CHGA in hormone storage granules in vivo, and its plasma concentration varies in human disease. The pancreastatin region of CHGA gives rise to three naturally

Pancreastatin in Serum Technical Brief

	occurring human variants, one of which (Gly297Ser) occurs in the functionally important carboxyl terminus of the peptide and substantially increases the peptide's potency to inhibit cellular glucose uptake. These observations establish a role for pancreastatin in human intermediary metabolism and disease and suggest that qualitative hereditary alterations in pancreastatin' s primary structure may give rise to individual differences in glucose disposition. Historically analysis of pancreastatin levels has been utilized as a biomarker to establish diagnosis, and in prediction of disease recurrence, potential outcome, and efficacy of therapy in neuroendocrine tumors (NETs). However, there is growing literature on the limitations of use of monoanalytes, such as PST & Chromogranin A, for NET assessment, although conversely Chromogranin A and derived peptides are still perceived as most valuable markers of NETs. Concurrently there is increasing body of evidence on the importance of bioactive peptide fragments of Chromogranin A, including PST, in a spectrum of regulatory activities, important to maintaining homeostasis, involving the endocrine, immune, and cardiovascular systems. Hence the use of PST testing, and knowledge on the clinical implications is actively evolving towards a broader testing population.
Principle	This test is based on sandwich ELISA principle. Each well of the supplied microtiter plate has been pre-coated with an antigen-specific (pancreastatin) capture antibody. Standards, QCs, or samples are added to each well as and subsequently post-washing a biotin-conjugated detection antibody. Following another wash step HRPStreptavidin conjugate was added, incubated, and then unbound conjugates were washed away with wash buffer. A TMB substrate is then added which reacts with the HRP enzyme conjugate remaining in the well resulting in color development. A sulfuric acid stop solution is added to terminate color development reaction and the optical density (OD) of the well is measured at a wavelength of 450nm±2nm. TMB catalyzed by HRP to produce a blue color product that changes into yellow after adding acidic stop solution. The density of yellow is proportional to the amount of sample captured in plate. The OD of an unknown sample is compared to an OD standard curve generated using known antigen (pancreastatin) concentrations in order to determine the antigen (pancreastatin) concentration of the unknown sample.