Clinical Use
• Diagnose insulinomas
• Monitor therapy in patients with insulinomas

Reference Range

Interpretive Information
• Insulinoma
• Severe hypoglycemic hypoinsulinemia
• Chronic renal failure
• Hyperthyroidism
• Familial hyperproinsulinemia

Clinical Background
Proinsulin is produced in the beta islet cells of the pancreas and is cleaved into insulin and C-peptide prior to release into the circulation. Normally, a small amount of proinsulin (2% to 3%) escapes conversion and is secreted along with the insulin during beta cell stimulation. Proinsulin has a slight hypoglycemic action, and severely hypoglycemic hyperinsulinemic patients have shown that up to 40% of their serum immunoreactive insulin is proinsulin-like material.

The clinical disorder that most consistently results in elevated serum proinsulin is the insulinoma, a benign or malignant islet cell tumor of the pancreas. Increased levels of proinsulin have also been reported in patients with chronic renal failure, hyperthyroidism, and familial hyperinsulinemia.

Method
• Radioimmunoassay (RIA)
• Analytical sensitivity: 5.0 pmol/L

Specimen Requirements
1 mL frozen serum
0.8 mL minimum
No additive red top preferred
SST red top acceptable
Overnight fasting is required.

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