

Overview**Useful For**

Detection of pancreatic endocrine tumors

Assessment of vagal nerve function after meal or sham feeding

Method Name

Radioimmunoassay (RIA)

NY State Available

Yes

Specimen**Specimen Type**

Plasma EDTA

Advisory Information

This test should not be requested on patients who have recently received radioactive materials.

Necessary Information

Patient's age must be provided.

Specimen Required

Patient Preparation: Fasting (8 hours)

Collection Container/Tube: Lavender top (EDTA)

Submission Container/Tube: Plastic vial

Specimen Volume: 3 mL

Collection Instructions:

1. Place specimen on wet ice and keep cold at all times following collection.
2. Centrifuge (refrigerated centrifuge is not required) and aliquot plasma into plastic vial. Freeze immediately.

Forms

[If not ordering electronically, complete, print, and send an Oncology Test Request \(T729\)](#) with the specimen.

Specimen Minimum Volume

0.35 mL

Reject Due To

Gross hemolysis	Reject
Gross lipemia	Reject

Gross icterus	OK
---------------	----

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Plasma EDTA	Frozen	90 days	

Clinical and Interpretive

Clinical Information

Pancreatic polypeptide (PP) is secreted by the pancreas in response to hypoglycemia, ingestion of food, or "sham" feeding (food is chewed, but not swallowed) secondary to vagal nerve stimulation. Secretion is blocked by vagotomy or atropine.

The exact physiologic role of PP is undetermined, although the hormone is thought to be involved in exocrine pancreatic secretion and gallbladder emptying.

Markedly elevated levels are often associated with endocrine tumors of the pancreas (eg, insulinoma, glucagonoma, PPoma: pancreatic polypeptide-secreting tumor of the pancreas) Patients with diabetes may also have elevated PP levels.

A lack of response to sham feeding may indicate vagal nerve damage (eg, surgery-related nerve damage, autonomic nerve disorders). Extensive pancreatic destruction (eg, chronic pancreatitis, pancreatic cancer) may also result in low basal PP levels and a lack of response to sham feeding.

Reference Values

0-19 years: not established

20-29 years: <228 pg/mL

30-39 years: <249 pg/mL

40-49 years: <270 pg/mL

50-59 years: <291 pg/mL

60-69 years: <312 pg/mL

70-79 years: <332 pg/mL

> or =80 years: not established

Interpretation

High levels may be seen in pancreatic endocrine tumors, diabetes, and a nonfasting state. Markedly elevated levels may be seen in some pancreatic exocrine tumors.

A normal response to a sham feeding consists of a rapid pancreatic polypeptide (PP) rise over baseline followed by a

return to baseline. With vagal damage, no increase over baseline is seen.

Cautions

Pancreatic polypeptide (PP) normal values increase with age (approximately 20 pg/mL per decade).

Nonfasting state results in falsely elevated values.

The sham feeding test is invalid if food is swallowed. Ingestion of food typically results in a significant and prolonged PP increase over baseline (typically >200 pg/mL).

This test should not be requested in patients who have recently received radioisotopes, therapeutically or diagnostically, because of potential assay interference. A recommended time period before collection cannot be made because it will depend on the isotope administered, the dose given and the clearance rate in the individual patient. Specimens will be screened for radioactivity prior to analysis. Radioactive specimens received in the laboratory will be held and assayed after the radioactivity has sufficiently decayed. This will result in a test delay.

Clinical Reference

1. Panzuto F, Severi C, Cannizzaro R, et al: Utility of combined use of plasma levels of chromogranin A and pancreatic polypeptide in the diagnosis of gastrointestinal and pancreatic endocrine tumors. *J Endocrinol Invest* 2004 Jan;27(1):6-11
2. Brimnes Damholt M, Rasmussen BK, Hilsted L, et al: Basal serum pancreatic polypeptide is dependent on age and gender in an adult population. *Scand J Clin Lab Invest* 1997 Dec;57(8):695-702
3. Escobar H, Jushnir M, Ray J, et al: A Measurement of Pancreatic Polypeptide and its Peptide Variant in Human Serum and Plasma by Immunocapture-Liquid-Chromatography-Tandem Mass Spectrometry. Reference Intervals and Practical Assay Considerations. *Biochem Physiol* 2014 Aug;3:4
4. Balaji N, Crookes P, Banki F, et al: A Safe and Noninvasive Test for Vagal Integrity Revisited. *Arch Surg* 2002;137:954-959

Performance

Method Description

A radioimmunoassay technique is used. The assay system utilizes rabbit-antihuman pancreatic polypeptide (PP) antiserum, a standard or patient plasma specimen, and radiolabeled human PP that has been iodinated by a modified Hunter-Greenwood technique.(Unpublished Mayo method)

PDF Report

No

Day(s) and Time(s) Test Performed

Monday, Wednesday; 2 p.m.

Analytic Time

3 days

Maximum Laboratory Time

8 days

Specimen Retention Time

3 months

Performing Laboratory Location

Rochester

Fees and Codes**Fees**

- Authorized users can sign in to [Test Prices](#) for detailed fee information.
- Clients without access to Test Prices can contact [Customer Service](#) 24 hours a day, seven days a week.
- Prospective clients should contact their Regional Manager. For assistance, contact [Customer Service](#).

Test Classification

This test was developed and its performance characteristics determined by Mayo Clinic in a manner consistent with CLIA requirements. This test has not been cleared or approved by the U.S. Food and Drug Administration.

CPT Code Information

83519

LOINC® Information

Test ID	Test Order Name	Order LOINC Value
HPP	Pancreatic Polypeptide, P	2721-9

Result ID	Test Result Name	Result LOINC Value
8014	Pancreatic Polypeptide, P	2721-9