MAYO CLINIC LABORATORIES

NEW TEST

Notification Date: August 18, 2026
Effective Date: September 22, 2026

Insulin Analogs, Serum

Test ID: INSAL

Useful for:

Detection and quantitation of native human insulin and insulin analogs in serum

Assessment of factitious hypoglycemia from misuse or surreptitious administration of insulin analogs

Monitoring treatment adherence of prescribed insulin therapy

Providing an alternative testing methodology for insulin measurements when immunoassay test results do not align with the clinical presentation and/or interference is suspected

Methods:

Liquid Chromatography Mass Spectrometry, High-Resolution Accurate Mass-Mass Spectrometry (LC-MS HRAM)

Reference Values:

Human insulin: 2.6-24.9 mcIU/mL
Reference values only apply to fasting patients not being administered pharmaceutical/synthetic insulins.
Therapeutic reference intervals for synthetic insulin analogs have not been established.

Specimen Requirements:

Patient Preparation:	
Fasting:	8 hours, required for human insulin reference values to apply
Supplies:	Sarstedt Aliquot Tube, 5 mL (T914)
Preferred:	Red Top
Acceptable:	Serum Gel
Specimen Volume:	1.5 mL Serum
Collection Instructions:	Within 2 hours of collection, centrifuge and aliquot serum into a plastic vial
Minimum Volume:	0.75 mL

Specimen Stability Information:

Specimen Type	Temperature	Time
Serum Red	Frozen	14 days

Cautions:

This test cannot currently detect or measure the long-acting insulin analogs detemir, degludec, or icodec.

This test cannot differentiate between endogenous human insulin and exogenous/synthetic forms of human insulin (Novolin R and Novolin N)

Human insulin reference values are only applicable to patients who are fasting and not being administered pharmaceutical/synthetic insulin analogs.

Hemolysis interferes with this assay, as insulin-degrading peptidases are released from erythrocytes.

CPT Code:

G0480
80375 (if appropriate for select payers)

Day(s) Performed: Monday and Thursday **Report Available:** 10 days

Questions

Contact Joshua Yang, Laboratory Resource Coordinator at 800-533-1710.