MAYO CLINIC LABORATORIES

Test Definition: FBIOT

Vitamin B7, H (Biotin)

Overview

Method Name
Microbiological Assay

NY State Available
Yes

Specimen

Specimen Type
Serum

Specimen Required
Specimen Type: Serum
Collection Container/Tube: Red Top or SST
Submission Container/Tube: Plastic vial
Specimen Volume: 2 mL
Collection Instructions:
1. Draw blood in a plain red-top tube(s) or serum gel tube(s).
2. Centrifuge and send 2 mL serum frozen in amber vial (T915) **to protect from light.**

Specimen Minimum Volume
1 mL

Reject Due To

Gross hemolysis	Reject
Gross lipemia	Reject
List other reasons for rejection	Not light protected

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Serum	Frozen (preferred)	14 days	LIGHT PROTECTED
	Refrigerated	7 days	LIGHT PROTECTED

Clinical & Interpretive

Clinical Information

Biotin, vitamin B7, or vitamin H, is a water-soluble vitamin. The vitamin plays a role in the transferring of carbon dioxide in the metabolism of fat, carbohydrate and protein by functioning as an enzyme cofactor. It is involved in multiple biochemical reactions including niacin metabolism, amino acid degradation, and the formation of purine, which is an integral part of nucleic acids. It interacts with histone by the action of biotinyl-transferase. Sometimes the vitamin is used in weight reduction programs. It may be prescribed as a supplement for diabetic patients due to its role in carbohydrate metabolism. Biotin is commonly found in vitamin B complex and many food sources, such as milk, yeast, egg yolk, cereal, and mushrooms. The reference daily intake [RDI of 101.9(c) (8) (IV)] for vitamin B7 is 300 micrograms. Deficiency in the vitamin may result in seborrheic dermatitis, alopecia, myalgia, hyperesthesia, and conjunctivitis. Disorders of biotin metabolism can be acquired or congenital. Biotinidase and holocarboxylase synthethase deficiency are the two better known forms of disorders. The lack of biotin-dependent pyruvate carboxylase, propionyl-CoA carboxylase, methylcrotonyl-CoA carboxylase, and acetyl-CoA carboxylase can lead to the life-threatening disorder of multiple carboxylase deficiency. Treatment involves a daily dose of approximately 10 mg biotin/day. Irreversible mental or neurological abnormalities may result from delayed clinical intervention.

Reference Values

Pediatric Normal <12 yrs: 100.0-2460.2 pg/mL
Adults Normal >or=12 yrs: 221.0-3004.0 pg/mL

Performance

Method Description

The Biological Assay employed to quantify the level of biotin in sera uses *Lactobacillus plantarum* as a biotin-dependent microorganism that requires Biotin for growth. The assay consists of a sterile 96-well microplate. The assay is set by placing standard curve volumes, assay media, control serum and test samples in a sterile 96-well plate and adding a set volume of diluted bacterial culture. This culture is placed in last to allow for equal growth and distribution. The bioassay is placed in 37 degrees celsius (+/- 3 degrees celsius), humidified, 5% (+/-1%) CO2 incubator and allowed to incubate 24 to 36 hours. The plate is read for percent Transmission. This method measures the ability of light to pass through the bacterial culture inversely measuring bacterial growth by biotin utilization.

PDF Report

No

Day(s) Performed

Varies, 2 days per week

Report Available

4 to 12 days

Performing Laboratory Location

BioAgilytix Diagnostics

Fees & 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 account representative. For assistance, contact Customer Service.

Test Classification

The performance characteristics of the listed assay was validated by BioAgilytix Diagnostics. The US FDA has not approved or cleared this test. The results of this assay can be used for clinical diagnosis without FDA approval. BioAgilytix Diagnostics is a CLIA certified, CAP accredited laboratory for performing high complexity assays such as this one.

CPT Code Information

84591

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
FBIOT	Biotin (Vitamin B7)	1980-2

Result ID	Test Result Name	Result LOINC® Value
Z2042	Biotin (Vitamin B7)	1980-2