

Q-Pulse No	BVA412
Version	1
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## **Biotin Interference in Beckman Coulter Immunoassay Methods at Southwest Pathology Services**

Biotin doses of greater than 5 mg per day may result in interference with some of the Beckman Access immunoassays in use in the Southwest Pathology Services Clinical Biochemistry Laboratories. These assays are:

CA199

Free T3

Free T4

### **Introduction: What is Biotin?**

Biotin, also known as Vitamin B7 or Vitamin H, is a water-soluble vitamin that plays a key role in metabolic processes such as converting food into energy and supporting the health of skin, hair, and nails. It is naturally found in foods like eggs, nuts, seeds, and certain vegetables, and is also commonly included in dietary supplements.

While biotin is beneficial for many, its presence in high doses, particularly from supplements, can interfere with laboratory testing. This is especially relevant for immunoassays.

### **Biotin Supplementation and Interference**

High doses of biotin, typically 5 mg or greater, are found in over-the-counter supplements marketed for promoting hair, skin, or nail health, as well as in prescribed regimens for treating certain inherited metabolic diseases or conditions like multiple sclerosis. In contrast, multivitamin tablets generally contain much smaller amounts of biotin—around 50 micrograms—and do not pose a risk of interference with immunoassays.

Biotin is rapidly cleared from the bloodstream via the kidneys. However, in individuals with renal failure, this clearance may be delayed. A single 10 mg dose of biotin typically returns to non-interfering levels within eight hours.

### **Summary: Recommendations for Minimizing Biotin Interference**

Assays affected: CA199, thyroid hormones (free T3, free T4)

To minimize the risk of biotin interference, the following guidelines should be followed based on biotin dosage:

- **Biotin dose < 5 mg:** No action required.
- **Biotin dose 5 – 10 mg:** Wait at least 8 hours after taking biotin before blood sampling.
- **Biotin dose > 10 mg:** Discontinue biotin use for 72 hours before blood sampling and inform the laboratory in the clinical request details.

### **References:**

**Beckman Coulter.** (2022). *Instructions for Use: Access Free T3 C78425 A*. Beckman Coulter. July 2022.

**Beckman Coulter.** (2024). *Instructions for Use: Access Free T4 C58561 C*. Beckman Coulter. 2024.

**Beckman Coulter.** (2021). *Instructions for Use: Access GI Monitor Cancer Antigen 19-9 A83874 N*. Beckman Coulter.

**BLOOD SCIENCES- BIOCHEMISTRY**  
**BIOTIN INTERFERENCE IN BECKMAN COULTER IMMUNOASSAYS**  
**INFORMATION SHEET**

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