



TECHNICAL NOTICE

SOUTH BEND MEDICAL FOUNDATION, INC.

Quantitation of Beta-Hydroxybutyrate (BHB)

Effective Date: Currently Available

Performing Department: Automated Laboratory

This test replaces Acetest® which is a nitroprusside based test.

Clinical Significance: Beta-Hydroxybutyrate (BHB) is the predominant ketone body in the blood. It is the most sensitive marker for detecting ketosis. The American Diabetes Association has recommended BHB as the preferred method for diagnosing and monitoring treatment of diabetic ketoacidosis.

Ketone bodies are catabolic products of free fatty acids. Beta-hydroxybutyrate accounts for 78% of ketone bodies in the blood; the other two are acetoacetate (20%) and acetone (2%). Although ketone bodies are acidic, normal renal and respiratory functions compensate for ketogenesis and maintain acid-base homeostasis. In ketoacidosis, these physiological mechanisms are unable to compensate for the ketone bodies produced. The excess accumulates and the blood pH is lowered to acidic levels.

Method: Enzymatic quantitation of BHB by beta-hydroxybutyrate dehydrogenase.

Use: Diagnosing and monitoring treatment of diabetic ketoacidosis. Differential diagnosis of patients with hypoglycemia, acidosis, suspected alcohol ingestion, or an unexplained increase in the anion gap.

Reference Range: 0.02 to 0.27 mMol/L

Specimen Collection Requirements:

Specimen requirement: Serum or Plasma

Type of Container: Gold top (SST), Red top (serum), Lavender top (EDTA), Green top (heparin), or Gray top (fluoride/oxalate) tube

Preferred Volume: 1.0 mL

Minimum Volume: 0.5 mL

Collection: Routine venipuncture. Separate serum or plasma from cells and refrigerate.

Stability: 2 hours room temperature (20-30°); 7 days refrigerated (2-8 °C); 30 days frozen (-20°C)

Storage and Transport: Refrigerated temperature (2-8 °C)

Testing: Tested as received and available as a STAT priority.

Order: SBMF 29184

CPT: 82010

Please direct any questions, or comments regarding this notice to Deborah H. Sun, Ph.D. (dsun@sbfm.org) or Brett Colter (bcolter@sbfm.org) at South Bend Medical Foundation (574) 234-4176 or (800) 544-0925.

SOUTH BEND MEDICAL FOUNDATION, INC.

530 N. Lafayette Boulevard • South Bend, IN 46601 • (574) 234-4176

Elkhart (574) 293-8441 • (800) 544-0925

Robert J. Tomec, M.D. • *Medical Director*