

A fast enzymatic analysis for plasma and serum 3-Hydroxybutyrate.

Bulletin Reference	TB – 3-Hydroxybutyrate – Clinical – GMRD-135 – V.01
Order Code(s)	GMRD-135
Reagent Kit Size(s)	100 ml (140 analyser cycles)
Instruments	All GM7 analysers
Samples	Plasma (Heparinised), serum
Sample Volume	50 µl
Analysis Time	20 seconds (from injection)
Linearity	3.0 mmol/L (ca. 30 mg/dl)
Detection Limit	0.2 mmol/L (ca. 2 mg/dl)
Precision (Within Run)	C.V. of 3 - 4 % @ 0.5 mmol/L (ca. 5 mg/dl)
Accuracy	i) Method comparison vs Sigma enzymatic UV method: y(Analox) = 0.95x - 0.04 mmol/L, r = 0.985, n = 33 ii) Method comparison vs Randox enzymatic UV method: y(Analox) = 0.90x - 0.10 mmol/L, r = 0.989, n = 34 iii) Recovery Data: 94 - 99 %
Reagent Stability	Shelf-life unopened: 9 months stored at 0 - 5°C. Shelf-life reconstituted: Tris/NAD/3-HBDH reagent 14 days stored at 0 - 5°C; POD reagent 5 - 6 weeks at 0 - 5°C.
Note	3 vials of enzyme reagent are provided to maximise kit life.

Principle

i) The enzyme 3-hydroxybutyrate dehydrogenase (3-HBDH) reduces NAD in proportion to the 3-hydroxybutyrate concentration in a brief pre-reaction,



ii) The rate of oxidation by peroxidase (POD) of the generated NADH is determined in the analyser and under appropriate conditions is directly proportional to the plasma 3-hydroxybutyrate concentration.

