

A fast enzymatic assay for plasma and serum Cholesterol.

Bulletin Reference	TB – Cholesterol – Clinical – GMRD-084 – V.01
Order Code(s)	GMRD-084, GMRD-084J
Reagent Kit Size(s)	60 ml (85 analyser cycles), 8 x 60 ml (680 analyser cycles)
Instruments	All GM7 and GL5 series analysers
Samples	Plasma, serum (whole blood for screening only)
Sample Volume	30 µl
Analysis Time	20 seconds (from injection)
Linearity	10.0 mmol/L (387 mg/dl)
Detection Limit	0.25 mmol/L (ca. 10 mg/dl)
Precision (Within Run)	C.V. of 1 % @ 5 mmol/L (194 mg/dl)
Accuracy	Method comparison vs Manual Enzymatic: y (Analox) = 0.98x + 0.04 mmol/L, r = 0.988, n = 142
Reagent Stability	Shelf-life unopened: 6 months stored at 0 - 5°C. Shelf-life reconstituted: Cholesterol oxidase enzyme, 7 - 10 days stored at 0 - 5°C.
Note	Whole blood cholesterol values are lower than plasma or serum by on average 15 - 20 %. Analysis of High Density Lipoprotein (HDL) cholesterol fraction can be performed using Analox HDL microtubes (Order Code: GMRD-089).

Principle

i) Cholesterol esters are converted to free cholesterol by cholesterol esterase (CE) in a brief pre-reaction,



ii) In the presence of molecular oxygen, cholesterol is oxidised by the enzyme cholesterol oxidase (CO) to cholestenone and hydrogen peroxide,



Under the conditions of the assay, the rate of oxygen consumption is directly proportional to cholesterol concentration.