

An enzymatic analysis for plasma or serum Creatinine.

Bulletin Reference	TB – Creatinine – Clinical – GMRD-170– V.01
Order Code(s)	GMRD-170
Reagent Kit Size(s)	100 ml (140 analyser cycles)
Instruments	All GM7 series analysers
Samples	Plasma (Heparinised), serum, urine
Sample Volume	100 µl
Analysis Time	20 seconds (from injection)
Linearity	850 µmol/L (ca. 9.7 mg/dl)
Detection Limit	17.5 µmol/L (ca. 0.2 mg/dl)
Precision (Within Run)	C.V. of 1.7 % @ 350 µmol/L (ca. 4.0 mg/dl)
Accuracy	Method comparison vs Automated Jaffé (Olympus AU5000): y (Analox) = 1.04x + 21.7 µmol/L, r = 0.990, n = 49
Reagent Stability	Shelf-life unopened: 9 months stored at 0 - 5°C. Shelf-life reconstituted: GLDH/NADH/α-ketoglutarate, 7 - 10 days stored at 0 - 5°C; POD reagent 5 - 6 weeks at 0 - 5°C
Note	2 vials of enzyme reagent are provided to maximise kit life. The number of tests may be doubled by using half volumes (micro-method). A sample blank allows for background interference by endogenous ammonia and other NADH consuming reactions.

## Principle

i) Creatinine is hydrolysed to N-methylhydantoin and ammonia by creatinine iminohydrolase (CI) in a brief pre-reaction,



ii) The ammonia liberated in the above reaction forms L-glutamate with α-ketoglutarate in the presence of glutamate dehydrogenase (GLDH) and excess NADH,



iii) Under the conditions of the assay, the rate of oxidation of the excess NADH by peroxidase (POD) is inversely proportional to the creatinine concentration.

