# Clinical Glycerol Analysis

A fast enzymatic analysis for plasma Glycerol.

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| **Bulletin Reference** | TB – Glycerol – Clinical – GMRD-177– V.02 |
| **Order Code(s)** | GMRD-177 |
| **Reagent Kit Size(s)** | 100 ml (140 analyser cycles) |
| **Instruments** | All GM7 series analysers |
| **Samples** | Plasma, serum |
| **Sample Volume** | 25 µl |
| **Analysis Time** | 20 - 25 seconds |
| **Linearity** | 1.0 mmol/L (9.2 mg/dl) |
| **Detection Limit** | 0.1 mmol/L (ca. 0.9 mg/dl) |
| **Reagent Stability** | Shelf-life unopened: 9 months stored at 0 - 5°C.<br>Shelf-life reconstituted: 3 - 4 weeks stored at 0 - 5°C. |
| **Note** | Levels below ca. 0.2 mmol/L (1.8 mg/dl) can be regarded as clinically normal for human plasma.<br>This kit includes a liquid QC. |

## Principle

In the presence of glycerol kinase (GK), glycerol is phosphorylated by adenosine triphosphate (ATP) forming glycerol-3-phosphate (G-3-P) which in turn is oxidised by glycerol-3-phosphate oxidase (GPO) to dihydroxyacetone phosphate (DAP) and hydrogen peroxide,

$$\text{Glycerol + Adenosine Triphosphate (ATP)} \xrightarrow{\textit{Glycerol Kinase (GK)}} \text{Glycerol-3-phosphate + Adenosine Diphosphate (ADP)}$$

$$\text{Glycerol-3-phosphate} + O_2 \xrightarrow{\textit{Glycerol-3-phosphate Oxidase (GPO)}} \text{Dihydroxyacetone Phosphate (DAP)} + H_2O_2$$

Under the conditions of the assay, both reactions run concurrently in the reaction chamber and the rate of oxygen consumption is directly proportional to glycerol concentration.