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U Mass - Glucose

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Protocol status: Working

We use this protocol and it's working

Created: February 08, 2019

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Keywords: Glucose, Obesity, Insulin resistance, Type 2 diabetes., using analox gm9 glucose analyzer, analox gm9 glucose analyzer, glucose summary, sample glucose, plasma glucose level, plasma glucose concentration, glucose oxidase, glucose, reaction between sample glucose, hyperglycemia, diabetes, insulin, insulin resistance, rate of oxygen uptake, oxygen uptake, obesity

Abstract

Summary:

This experiment measures blood or plasma glucose concentration using Analox GM9 Glucose Analyzer or GM7 Micro-Stat Rapid Multi-assay Analyzer. The measurement is based on the rate of oxygen uptake in the reaction between sample glucose and glucose oxidase. Plasma glucose levels are elevated (i.e., hyperglycemia) in obesity, insulin resistance, and type 2 diabetes.

Materials

MATERIALS

☒ Analox GM9 Glucose Analyzer **Analox Catalog #GM9 Glucose Analyser**

☒ Analox GM7 Microstat Analyzer **Analox Catalog #GM7 Microstat Analyzer**

☒ Glucose Reagent **Analox Catalog #GMRD-002A**

☒ Glucose Standard (144.1 mg/dl) **Analox Catalog #GMRD-011**

☒ Microman M10 Precision Pipet **Gilson Catalog # F148501**

Troubleshooting



Before start

Notes:

- ✓ Freshly prepared blood or plasma samples are recommended. If storing samples, keep blood and plasma samples at -20°C or at -70°C for long-term storage. Avoid freeze/thaw cycles.
- ✓ Avoid using samples with gross hemolysis or lipemia.
- ✓ Allow all reagents to come to room temperature before measurement.



- 1 Check waste and fill glucose reagent reservoir.
- 2 Prepare ~0.1ml of standard solution (~144 mg/dl).
- 3 Press "Enter", and then "No" to cycle the Analox Analyzer.
- 4 When cycling is finished, wait for reading to return to ~0 mg/dl (± 1 mg/dl).
- 5 Enter calibration mode.
- 6 Using precision pipet, inject 10 μ l of standard solution.
- 7 Rinse pipet with dH₂O.
- 8 When value is reached, accept calibration.
- 9 When reading has returned to ~0 mg/dl, inject 10 μ l of standard solution, and ensure that the value is ~144 mg/dl.
- 10 Repeat steps #5~#9 until calibration value is stable.
- 11 Check calibration by injecting 5 μ l of standard and multiplying reported value by 2.
- 12 The final calculated value should be ~144 mg/dl.



- 13 Instrument is now ready for sample measurement. Use 5 or 10 μl of plasma sample for glucose concentration measurement.