



Glucose

Version: 1
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(note that the following list should be linked to the appropriate location.)

- [Summary](#)
- [Reagents and Materials](#)
- [Protocol](#)
- [Reagent Preparation](#)
- [Reagent 1](#)
- [Reagent 2](#)
- [Reagent 3](#)

Summary: *(This area will include a brief description of what the protocol is used for and why someone would need to use it.)*

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.

Reagents and Materials: *(This should be a comprehensive list of stock solutions and material. The reagent list for the stock solutions is included in the reagent preparation area that is included at the end of this SOP.)*

Reagent/Material	Vendor	Stock Number
Analox GM9 Glucose Analyzer	Analox	
Analox GM7 Microstat Analyzer	Analox	
Glucose Reagent	Analox	GMRD-002A
Glucose Standard (144.1 mg/dl)		GMRD-011
Microman M10 Precision Pipet	Gilson	F148501

Protocol:

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 μ l of plasma sample for glucose concentration measurement.