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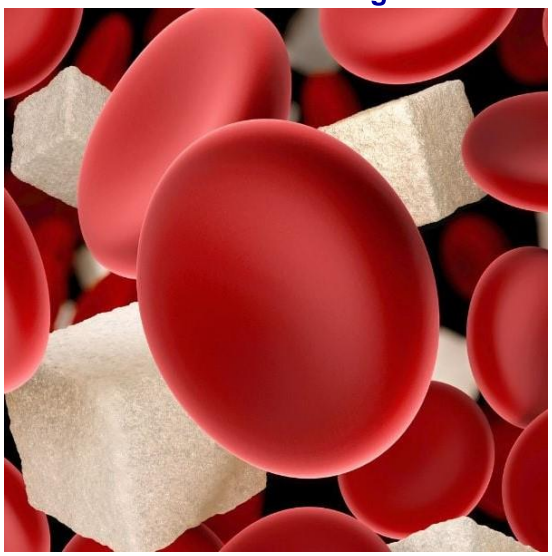
IN-Line Glucose Monitoring Device



KEY INFORMATION

TECHNOLOGY CATEGORY:

Healthcare – Blood Analytic Platform

Electronics – Sensors & Instrumentation

TECHNOLOGY READINESS LEVEL: TRL 3

COUNTRY: SINGAPORE

ID NUMBER: MT-BAP-001

Patent: Automatic Fluidics system for in-line blood analysis, Singapore, 10202300536X, 2023.

OVERVIEW

Significant fluctuations in blood glucose occur among hospitalised patients. Frequent monitoring is required to achieve optimal blood glucose regulation. This is essential for critically ill patients with diabetic ketoacidosis (DKA), hyperosmolar hyperglycemic syndrome (HHS) and hypoglycaemia. The current clinically validated blood glucose monitoring method is tedious, and frequent finger pricking results in pain, bruising, and skin alterations.

Our aim is to develop an accurate and pain-free sensing device to monitor blood glucose level more frequently. The technology uses the IV cannula port for blood collection and testing without finger pricking. The blood draws, glucose recording, cannula flushing, and sensor calibration will be controlled using a programmable system. As a result, on-demand frequent blood glucose testing can be enabled, and wireless data transformation and automatic alert triggering will be realized.

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TECHNOLOGY FEATURES & SPECIFICATIONS

The technology consists of microfluidic/pump system and circuit module integrated with IV cannula for frequent blood glucose monitoring.

- The solution provides a pain-free blood glucose monitoring
- The device is fully automated frequent blood monitoring, significantly reduce nursing staff workload
- Frequent blood monitoring as fast as 5 min /data
- The device requires an analyte volume of <50 µL rapid results (< 5 mins) for analysis
- The technology enables sensor auto-calibration and avoid degradation for extended use
- A compact multi-compartment cartridge for reagents and waste collections

POTENTIAL APPLICATIONS

The applications include but are not limited to:

- Blood glucose monitoring
- Blood analyses (pH, lactate, PO2, PCO2.)
- Diabetes monitoring

UNIQUE VALUE PROPOSITION

- The technology offers a pain-free blood collection for blood glucose monitoring among in-patient.
- Frequent blood glucose monitoring can be realized.
- Fully automated feature increasing efficiency by reducing time and effort required for frequent monitoring.
- High accurate and immediate blood glucose result for critically ill in-patient.
- A compact and replaceable multi-solution cartridge for both regents and waste storage.

For more information, please contact our:
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