Eaglenos

Smart Healthcare Technologies

Blood Gas Analyzer

- Lightweight and portable
- Versatile applications (37 parameters)
- Room temperature stored cartridges

Eaglenos Sciences, Inc.

Blood Gas Analyzer

Advanced Features

- Measures 10 parameters: pH, pCO_2, pO_2, K^+, Na^+, Cl^-, iCa^{2+}, Glucose, Lactate, HCT.
- Microfluidic electrochemical technology: transferring the function of an analytical laboratory onto a chip.
- Convenient Storage: Test cartridges can be stored at room temperature for up to 8 months.

Efficiency and Accuracy

- Instant operation: No pre-heating wait, instant test on arrival.
- Swift calibration and testing: Complete the calibration and testing process around 3 minutes.
- Built-in calibration solution: Provides laboratory-level test results, ensuring accuracy.

User-friendly Experience

- Immediate results: Conduct whole blood testing effortlessly for instant results.
- Minimum sample volume requirement (150 µL).
- Maintenance-free design: The instrument has no fluidic pathways, ensuring hassle-free operation and minimal maintenance.
- 8-inch LCD 480p capacitive touch screen; Built-In video tutorials offering step-by-step guidance for efficient operation.

Portability and Data Storage

- Compact and portable design for on-the-go use.
- Long-lasting performance: Perform over 60 consecutive tests on a single charge with the built-in lithium battery.
- Built-in barcode scanner and thermal printer.
- Extensive data storage: Capable of storing over 100,000 records, with the option to connect to LIS/HIS for seamless data management.

Blood Gas Test Cartridge

37 parameters of blood gases, electrolytes and metabolites:

10 measured parameters: K^+, Na^+, Cl^-, iCa^{2+}, pH, pCO_2, pO_2, Glu, Lac, HCT.

27 calculated parameters: $cH^+(T)$, pH(T), $pCO_2(T)$, $pO_2(T)$, pO_2(A-a)(T), pO_2(a/A)(T), RI(T), $pO_2(T)$ / FiO_2, cH^+, $iCa^{2+}(7.4)$, HCO_3-act, HCO_3-std, BE(ecf), BE(B), BB(B), AG, sO_2(est), tHb(est), TCO_2, pO_2(A-a), pO_2(a/A), RI, mOsm, pO_2 / FiO_2, AG(K^+), pO_2(A), pO_2(A)(T).

Test parameters and clinical significance

Potassium ion (K^+): Minor fluctuations in extracellular K^+ concentration can lead to significant alterations in the transmembrane potential gradient, consequently disturbing the function of neuromuscular and cardiac tissues.

Sodium ion (Na^+): Na^+ is the principal determinant of water distribution between the intracellular and extracellular compartments. Therefore, Na^+ is essential for the maintenance of blood volume and thereby blood pressure.

Chloride ion (Cl^-): As the second most abundant extracellular fluid ion after Na^+, and the most abundant extracellular fluid anion, Cl^- is essential for the maintenance of normal plasma osmolarity.

Free calcium ion (iCa^{2+}): The maintenance of iCa^{2+} is critical for the structural integrity of bones as well as hemostasis, cardiac and skeletal muscle cell contraction, neuromuscular transmission, and the proper function of many hormones.

pH, Blood Gas

Acidity and alkalinity (pH): The pH level is an indicator of the acidity and alkalinity of the blood. The abnormal pH level indicates an acid-base imbalance.

Carbon dioxide partial pressure (pCO_2): The partial pressure generated by physically dissolved CO_2 molecules in the blood is an important indicator for alveolar ventilation efficiency.

Oxygen partial pressure (pO_2): The partial pressure generated by physically dissolved O_2 molecules in the blood is an indicator of the oxygen-carrying status of pulmonary capillary blood.

Biochemical metabolites/Hematocrit

Glucose concentration (Glu): Glucose is the primary source of energy for the organism and the only source of specialized nutrition for brain tissue. The measurement of blood glucose levels is essential for the diagnosis and treatment of patients with diabetes and hypoglycemia.

Lactic acid concentration (Lac): Lactate serves as an indicator for evaluating tissue hypoperfusion and cellular oxygen deficiency.

Hematocrit (HCT): Hematocrit is the ratio between the volume of red blood cells and the volume of whole blood, which is the main indicator of blood viscosity, anemia, severe blood loss, and the body's oxygen-carrying capacity.

Specifications

Parameter	Accuracy	Range	Precision
K^+	±3.0%	2.0-9.0 mmol/L	≤1.5%
Na^+	±3.0%	100-180 mmol/L	≤1.5%
Cl^-	±3.0%	65-140 mmol/L	≤1.5%
iCa^{2+}	≥1.00 mmol/L, ±5.0%; <1.00 mmol/L, ±0.05 mmol/L	0.25-2.50 mmol/L	≤1.5%
pH	±0.04	6.500-8.000	≤0.02
pCO_2	≥62.0 mmHg, ±8.0%; <62.0 mmHg, ±5.0 mmHg	10.0-150.0 mmHg	≥62.0 mmHg, CV≤4.0%; <62.0 mmHg, SD≤2.5 mmHg
pO_2	≥50 mmHg, ±15.0%; <50 mmHg, ±7.5 mmHg	10-700 mmHg	≤5.0%
Glu	≥4.0 mmol/L, ±10.0%; <4.0 mmol/L, ±0.4 mmol/L	1.1-38.0 mmol/L	≥4.0 mmol/L, CV≤5.0%; <4.0 mmol/L, SD≤0.2 mmol/L
Lac	≥5.00 mmol/L, ±12.0%; <5.00 mmol/L, ±0.6 mmol/L	0.50-20.00 mmol/L	≥5.00 mmol/L, CV≤6.0%; <5.00 mmol/L, SD≤0.3 mmol/L
HCT	≥50% PCV, ±6.0%; <50% PCV, ±3% PCV	10%-70% PCV	≥50% PCV, CV≤3%; <50% PCV, SD≤1.5% PCV

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Applications

Pediatrics/ Fever Clinic
Electrolyte monitoring for outpatient infusion

ICU
Monitoring electrolytes in critically ill patients

Surgery
Monitoring electrolytes during operation

Gastroenterology
Monitoring electrolytes in patients with diarrhea and vomiting accompanied by coma

Emergency
Monitoring electrolytes in critically ill patients due to poisoning, coma, and convulsions

Neurology
Blood gases and acid-base balance monitoring for patients with stroke and coma

Cardiology
Blood gases and electrolyte monitoring for patients with heart attack

Obstetrics and Gynecology/ Neonatology
Diagnosis of neonatal asphyxia, assessment of neonatal pulmonary disease, and monitoring of acid-base balance

Endocrinology
Blood gases, metabolites, electrolyte, and acid-base balance monitoring in patients with diabetic ketoacidosis

Respiratory
Classification of respiratory failure, assessment of hypoxia, and guidance for ventilator adjustment

Anesthesiology
Monitoring electrolytes during surgical anesthesia (preoperative, intraoperative, and postoperative)

How to use

1. Scan the barcode on the cartridge pouch and take out the cartridge.

2. Fill the inlet with sample and cover the cap to seal the sample inlet.

3. Insert the cartridge until it clicks. Wait for the results.

For in vitro diagnosis only.
For the intended use of the product, precautions and contraindications, please refer to the instructions.
This material is intended for academic exchange and training of professionals only.

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