

# Applications



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



**ICU**  
Monitoring electrolytes in critically ill patients



**Surgery**  
Monitoring electrolytes during operation



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



**Dermatology**  
Monitoring electrolytes in patients with severe trauma, burn and scald



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



**Nephrology**  
Monitoring electrolytes for patients in dialysis ward



**General Physicians' office**  
Primary Medical  
Electrolytes test

# How to use



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



**2.** Fill the inlet with sample to the fill mark and slide the cap to seal the inlet.



**3.** Insert the cartridge into the analyzer until it clicks. Wait for the results.

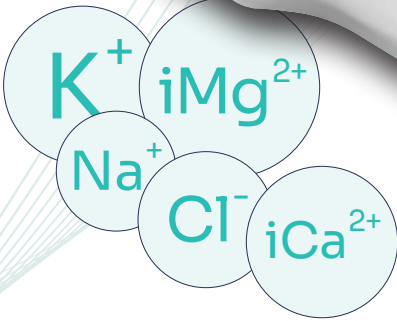
**For in vitro diagnosis only.**  
For the intended use of the product, precautions and contraindications, please refer to the instructions.  
This material is intended for academic exchange and training of professionals only.

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Smart Healthcare Technologies

# Electrolyte Analyzer



- "5-in-1" cartridge
- Including  $iMg^{2+}$
- Maintenance free

# Electrolyte Analyzer

## Advanced Features

- Concurrent testing  $K^+$ ,  $Na^+$ ,  $Cl^-$ ,  $iCa^{2+}$ , and  $iMg^{2+}$ .
- Ionized Magnesium ( $iMg^{2+}$ ) testing.
- Dry electrochemical technology with a patented pellet structure design.
- Exclusive molecular probes and algorithms.

## Efficiency and Accuracy

- Swift calibration and testing in under 5 minutes.
- Built-in calibration solution.

## User-friendly Experience

- Whole blood testing for instant results.
- Minimum sample volume requirement (100  $\mu$ L).
- No fluidic pathways for hassle-free operation and minimal maintenance.
- Room temperature stored test cartridges (up to 8 months).

## Portability and Data Storage

- Compact and portable design for on-the-go use.
- Over 50 consecutive tests on a single charge with the built-in lithium battery.
- Built-in barcode scanner and thermal printer.
- Stores over 99,999 records.
- Connection to LIS/HIS.



## Test Parameters and Clinical Significance

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

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

**Chloride ( $Cl^-$ ):**  $Cl^-$  is essential for the maintenance of normal plasma osmolarity.

**Ionized Calcium ( $iCa^{2+}$ ):** 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.

**Ionized magnesium ( $iMg^{2+}$ ):**  $iMg^{2+}$  is associated with the stabilization of intracellular potassium, which ensures normal functionality of the myocardium, nerves and muscles.



## Performance

| Parameter  | Accuracy                           | Precision    | Stability    | Test Range (mmol/L) |
|------------|------------------------------------|--------------|--------------|---------------------|
| $K^+$      | $\pm 3.0\%$                        | $\leq 1.5\%$ | $\leq 2.0\%$ | 1.0-15.0            |
| $Na^+$     | $\pm 3.0\%$                        | $\leq 1.5\%$ | $\leq 2.0\%$ | 100-200             |
| $Cl^-$     | $\pm 3.0\%$                        | $\leq 1.5\%$ | $\leq 2.0\%$ | 65-160              |
| $iCa^{2+}$ | $\pm 5.0\%$<br>$\pm 0.05\%$ mmol/L | $\leq 1.5\%$ | $\leq 3.0\%$ | 0.25-4.00           |
| $iMg^{2+}$ | $\pm 5.0\%$<br>$\pm 0.05\%$ mmol/L | $\leq 3.0\%$ | $\leq 3.0\%$ | 0.2-1.5             |

\*Benchmarking its performance against a gold standard wet bench analyzer



## Accuracy Validation

The accuracy of Eaglenos Electrolyte Analyzer has been validated by linear regression analysis showing a strong positive, linear relationship between two analyzers ( $R^2 > 0.94$  for all parameters), demonstrating the accuracy of our analyzer for  $K^+$ ,  $Na^+$ ,  $Cl^-$ ,  $iCa^{2+}$  and  $iMg^{2+}$  measurements.

## Correlation with Benchtop Analyzer

