Chloride

Thiocynate Method

Code : 10006   (2 x 50 ml)

(For the Analyser / colorimetric estimation of Chloride)

In VITRO USE Only.

SUMMARY & EXPLANATION OF TEST :

Chloride is a major extracellular anion which is involved significantly in maintaining water distribution, osmotic pressure and normal cation-anion balance in the extracellular fluid compartment. Chloride content in plasma is almost twice its concentration in cells. Urine chloride level is greatly influenced by dietary salt intake. Salt and water metabolism in the body is regulated by the corticosteroids from the adrenal cortex. Hence, urine chloride determination is useful for the diagnosis and prognosis of Addison's disease. CSF chloride determination is useful in the diagnosis of meningitis.

There are a number of methods for chloride quantitation like colorimetric, titrimetric, and use of chloride meter.

PRINCIPLE FOR CHLORIDE:

Chloride ions form a coloured complex when reacting with mercury (II) thiocynate solution. The intensity of the colour is proportional to the chloride concentration.

REAGENTS :

1.	Chloride Reagent	2 x 50 ml.
2.	Standard Chloride (100mmol/L)	3 ml

The reagents are ready to use and usable to the expiration date when stored at R.T, if contamination is avoided.

SAMPLE :

Serum (Haemolysed sera should not be used)

1. Serum should be seperated from the clotted blood without delay.

EXPECTED RANGE :

Chloride   :   98 to 107 mmol/L

LINEARITY :

Chloride   :   This method is linear between 70 to 130 mmol/L

STRICT ADHERENCE TO THE INSTRUCTIONS AND TO THE PROCEDURES ALONE GIVE THE PROPER RESULTS.

INSTRUCTIONS:

Contamination of glassware usually from detergents, results in falsely elevated concentrations. Therefore glass-ware should be washed with 1N Nitric Acid rinsed with high purity deionized water before use.

DIRECTIONS FOR USE ON ANALYSERS :

Reaction Type   :   End point with std.

Wave Length	:	505 nm (green filter)
Incubation Temp.	:	Room Temperature
Incubation Time	:	2 min.
Standard	:	100 mmol/L
Linearity	:	130 mmol/L
Unit	:	mmol/L

PROCEDURE:

Pipette into three clean dry test tubes labelled Blank (B), Standard (S), and Test (T)

	B	S	T
Chloride Reagent (1)	1.0 ml	1.0 ml.	1.0 ml
Standard Chloride (2)	...	0.005 ml	...
Serum	...	...	0.005ml

Mix well wait for two minutes at room temperature and read the absorbance of blank, standard and test against distilled water on a photocolorimeter at 505 nm within 10 minutes.

CALCULATION :

Chloride in mmol/L =

$$\frac{\text{Absorbance of T-B}}{\text{Absorbance of S-B}} \times 100 \text{ (Standard Concentration)}$$

NOTES :

★ Due to variations in inter - laboratory assay conditions, instruments and demography, it is recommended that each laboratory should establish its own normal range. To ensure adequate quality control, each run should include a normal and abnormal assayed controls. The assigned value of the control must be confirmed by this methodology.

★ Final diagnosis should be based on a co-relation of test results with other clinical observations / Diagnostic tools.

BIBLIOGRAPHY :

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