CHOLRIDE REAGENT

Mercurous (II) thiocyanate method

Quantitative determination of Chloride in serum/plasma
Only for In Vitro Diagnostic use

Clinical significance
It is important clinically the determination of chloride due regulation of osmotic pressure of extra cellular fluid and to its significant role in acid- base balance. Increases in chloride ion concentration may be found in severe dehydration, excessive intake of chloride, severe renal tubular damage and in patients with cystic fibrosis. Decrease in chloride ion concentration may be found in metabolic acidosis, loss from prolonged vomiting and chronic pyelonephritis. Clinical diagnosis should not be made on a single test result; it should integrate clinical and other laboratory data.

Method
Photometric test using mercorous (II) thiocyanate.

Principle
Chloride ions react with mercurous thiocyanate to form mercury per chlorate and thiocyanate. Thiocyanate forms a red complex with ferric ions in the presence of nitric acid.

Reagent composition
Reagent I : Chloride Reagent
Chloride standard : 100 mEq/L

Reagent preparation
All reagent is provided in ready to use.

Reagent storage and stability
When stored at recommended storage temperature stated on label,reagent is stable until the expiration date stated o the bottle and kit box label.

Warning and precautions
- For in vitro diagnostic use
- Do not use components beyond the expiration date.
- Do not mix materials from different kit lot numbers.
- Exercise the normal precautions required for handling all laboratory reagents.
- The reagent contains preservative. Do not swallow. Avoid contact with skin and mucous membranes.
- For detailed information refer material safety data sheet.
- Proceed carefully whith this product because due to its nature it can get contaminated easily.
- Most of the detergent and water softetening products used in the laboratories contain chelating agents. A defective rinsing will invalidate the procedure.

Wasted Management
Please refer to local legal requerements.

Materials required but not provided
- NaCl solution 9 g/l
- General laboratory equipment

Sample collection and preservation
Serum or plasma(lithium heparin)
Separate from cellular contents immediately after blood colletion.
Stability: at least one year at -20º C in case of immediate freezing.
7 days at 4-8ºC freeze only once! Discard contaminated specimens!
Urine: colletc 24-hour urine specimen in chloride free container.dilute a sample ½ in distilled water.mix.Multiply results by 2 (dilution factor).
Stability of the sample: 1 week at refrigerator (2-8) or frozen(-20ºC) temperatures.

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ASSAY PROCEDURE
Operating instructions
- Check reagent inventories at least daily to ensure that quantities are sufficient for the palnned work load.
- Bring all reagents,standar and sample to room temperature 18-28ºC,prior to analysis.

Automated parameters	
Wavelength	505nm
Cuvette 1 cm	1 cm
Reaction temperature R.T	R.T (22-30ºC)
Measurement	against Reagent blank
Reaction Direction	increasing
Reaction type	End point
Sample volumen	10 µl
Reagent volume	1000 µl
Incubation	5 min.
Blank Absorbance limit	< 0.30
Units	mEq/L

Manual assay procedure
Pipette into test tubes

	Blank	Standard	Test
Reagent 1	1000 µl	1000µl	1000µl
Standard	-	10 µl	-
Serum / plasma	-	-	10 µl

- Mix & incubate for 5 min at RT(22-30ºC)
- Read an record absorbance of the reagent blank,standar, control and each unknow sample immediately.
- CHLOM 50 are specially treated monovials with 1ml pre-dispensed reagent.just add 10µl sample / std,incubate at R.T for 5 min.&aspirate.use the same programme as above.

Sample dilutions

- This method is linear upto a concentration of 130 mEq/L
- Dilute samples above this concentration 1:1 with DI water
- and repeat assay.multiply the result by 2.

Calculation

Chloride (mEq/l) = AT/AS x Conc of Standard
Chloride in Urine (mEq/l) = AT/AS x Conc of Standard x2

Calibrators and controls

For the calibration of automated photometric systems the commercially available suitable multi-calibrator is recommended.

The assigned values of Chloride standard have been made traceable to the NIST standard reference material SRM 956.

It is recommended to run a normal and a pathological control serum which is commercially available to verify the performance of the measured procedure. The value of controls should fall within te established limit.

Each laboratory should establish corrective action n case of deviations in control recovery.

Perfomance Characteristics
Within Run

Sample	Mean concentration	SD	CV %
Norm	99.64	3.38	3.39%
path	128.56	4.21	3.27%

Run to Run

Sample	Mean concentration	SD	CV %
Norm	99.62	2.24	2.35%
path	128.83	3.14	2.44%

Linearity
The method is linear to a concentration of 7 mEq/l.dilute samples above this concentration 1:1 with DI water and repeat assay.multiply the result by 2.
Limit of detection: the limit of detection for Chloride is 30mEq/L
Method Comparison
A comparison of accucare Chloride with a commercially available assay (x) using 20samples gave following results: R2 =0.9590

Reference interval

Serum	95-115 mEql/L
Urine	110-250mEq/L / 24hr
CSF	95-110 mEq/L
Sweat	Upto 60 mEq/L

The reference values are to be considered as indicative only.every laboratory should establish its own normal range.

Limitation of the procedure

- for diagnostic purposes, the reults should always be assessed in conjunction with the patient`s medical history,clinical examination and other findings.

Interference

- Bilirubin: No interference found upto bilirubin 32mg/dl.
- Hemoglobin: No interference found upto 500mg/dl
- Lipemia: No interference found upto 500mg/dl
- The characteristics have been obtained using an automatic analyzer.Results may vary if a different instrument or a manual procedure is used.

Bibliography

1. Tietz, N.W., white ,W.L Mosby CO st.louis P.Young D.S henry R,J chem (1964) 10, 533.

PRESENTACIÓN:
CONT. 50x1 ml CODIGO: RS29071