

LiquiMAX CHLORIDE - SLR (MTC METHOD)

ORDERING INFORMATION

Ref./Cat. No.	Pack Size	Presentation
AVCHL - 50	2 x 25 ml	Single Liquid Reagent
AVCHL - 100	2 x 50 ml	Single Liquid Reagent

INTENDED USE

LiquiMAX CHLORIDE is an in-vitro diagnostic kit for the quantitative determination of chloride ion in Human Serum and Plasma.

PRODUCT FEATURES :

1. Single Liquid Reagent.
2. One step End Point assay.
3. Results correlate with ISE , Direct and Indirect potentiometry.
4. No pretreatment of the sample required.
5. Linearity:150 mMol/L
6. Tailor made for tropical Conditions.
7. Can be used on any colorimeter, spectrophotometer, discrete semi automated and automated analyzers.

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.

PRINCIPLE:

The Chloride ions react with mercuric thiocyanate to release thiocyanate ions which in turn react with ferric thiocyanate. The absorbance of the red colored complex at 505 nm is proportional to the Chloride concentration.



STORAGE AND STABILITY

All reagents are stable at R.T. (25 °C) till the expiry date mentioned on the labels

KIT COMPONENTS

1. Chloride Reagent
2. Chloride Standard : Concentration as stated on the label

COMPOSITION

Mercuric thiocyanate 2 mmol/L, mercuric nitrate 0.1 mmol/L, iron nitrate 30 mmol/L, HNO₃ 45 mmol/L.

REAGENT RECONSTITUTION & STABILITY

Reagent are liquid stable no need for reconstitution.

When the reagent is stored properly at RT & the contamination avoided, it is stable up to the expiry date mention on the label & kit box.

MATERIAL REQUIRED BUT NOT PROVIDED

Laboratory Instrumentation, Spectrophotometer UV/VIS with thermostatic cuvette holder or clinical chemistry analyzer: semi auto, calibrated micropipettes, glass or high quality polystyrene cuvettes, test tube/rack, heating bath controls, saline.

REAGENT DETERIORATION

Discard any turbid reagent if blank reagent absorbance exceeds 0.8 at 505 nm against distilled water.

WARNING & PRECAUTIONS

- Reagent may contain some non reactive and preservative components. It is recommended to handle carefully, avoiding contact with skin and ingestion.
- Specimen should be considered infectious and handled appropriately.
- Contamination by soap or glycerol will affect this assay.
- Perform the test according to the general " Good Laboratory Practice" GLP

SPECIMEN

Serum /Heparinised plasma /urine /CSF.

Urine specimen should be diluted 1+1 with distilled water (multiply result with 2)

SYSTEM PARAMETERS

Reaction type	:	END POINT
Wave length	:	505 nm
Flow cell Temperature	:	37°C
Sample volume	:	10 µl
Reagent volume	:	1000 µl
Standard concentration	:	100
Units	:	mMol/L
Blank	:	Reagent
Linearity	:	150
Low normal	:	95
High normal	:	115

TEST PROCEDURE

Pipette into test tubes labelled Blank (B), Standard (S) and Test (T) as follows:

Reagent	For 1 ml Procedure		
	B	S	T
1. Chloride Reagent	1.0 ml	1.0 ml	1.0 ml
2. Chloride Standard (Conc. : 100mMol/L)	-	10µl	-
Specimen	-	-	10µl

Mix well and read absorbance of Standard (S) and Test (T) against Blank (B) at 505 nm or with green filter (490-550 nm).

CALCULATIONS

$$\text{Chloride in mMol/L} = \frac{\text{Abs. Of T}}{\text{Abs. Of S}} \times 100$$

EXPECTED VALUE

Serum Chloride	:	95-115 mMol/L
Urine Chloride	:	170-250 mMol/24 hours (varies with uptake)
CSF Chloride	:	118-132 mMol/L

It is recommended that each laboratory establish their own normal range.

QUALITY CONTROL & CALIBRATION

To ensure adequate quality control ,the use of commercial reference control serum is recommended with each assay batch . Use of Quality Control material checks both, the instrument and the reagent functions.

PERFORMANCE CHARACTERISTICS

1. Linearity

Linearity : 150 mMol/L

2. Sensitivity/ Limit of Detection (LOD)

The lower limit of detection is 1.13 mmol/L

3. Interferences

No significant interference was observed from Bilirubin up to 20 mg/dl (Both Conjugated and unconjugated Bilirubin) Hemoglobin up to 50 mg/dl, Lipemia as Triglycerides up to 2000 mg/dl, Ascorbic acid up to 50 mg/dl.

4. Precision:

Intra-Assay

Sample	Mean (mmol/L)	SD (mmol/L)	CV%
Control serum 1	90.7	0.64	0.7
Control serum 2	106	0.73	0.69

Inter-Assay

Sample	Mean (mmol/L)	SD (mmol/L)	CV%
Control serum 1	91.6	0.69	0.76
Control serum 2	108	0.81	0.74

5. Method Comparison:

Results obtained using LiquiMAX Chloride-SLR reagents did not show systematic differences when compared with other commercial reagents. The results obtained using 20 samples were the following: Correlation coefficient @: 0.99 Regression equation: $y=0.9823 x +2.3006$ The results of the performance characteristics depend on the analyzer used.

LIMITATIONS

From detection limit of 1.13 mmol/L to linearity limit of 150 mMol/L. If the results obtained were greater than linearity limit, dilute the sample 1:2 with distilled water and multiply the result by 2.

WASTE DISPOSAL

Reagents must be disposed off in accordance with local regulations.














NOTES

- All glassware and cuvettes should be washed with Nitric acid and rinsed with good quality distilled water before use.
- This procedure measures total halides i.e. Bromide, Iodide, Chloride and Fluoride. Hence contamination with halides other than Chloride should be avoided.
- If a larger volume of reagent is required for absorbance reading, requisite volumes can be taken in multiples keeping the same ratio of reagent to specimen/standard.
- Programmes for specific autoanalyzers are available on request.

REFERENCES

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Symbols Used on Pack

 REF	Catalogue Number		Warning/Caution
 LOT	Batch No.		In vitro diagnostic device
	Manufacturing Date		Storage Limit
	Expiry Date		Consult instruction for use
	Manufacturer		Keep away from sunlight
	Keep Dry		Do not use if package is damaged
	Contains sufficient no. of test		



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