NEOTURBI
COMPLEMENT - C3
(Turbidimetry Method)

KIT NAME	KIT SIZE
NEO TURBI - C3	1 x 40 ml

INTRODUCTION
Complement C3 (C3) is intended for Invitro quantitative determination of C3 in human serum. Complement component 3 (C3) is the most abundant protein of the complement system. It plays a central role in the complement system and contributes to innate immunity. When activated by classical or alternative pathway, complement destroys foreign agents, release histamine, and release leukocytes from the bone marrow. C3 levels can be used in determining inherited or acquired deficiencies, including active lupus nephritis, severe infections, and inflammation. Increased levels are usually found after trauma, surgery, biliary obstruction, or focal glomerulosclerosis.

METHOD PRINCIPLE
The Kit utilizes latex-enhanced immunoturbidimetry to measure the C3 level in human serum or plasma. During the test, C3 in the sample binds with the specific anti C3 antibody to cause agglutination. The turbidity caused by agglutination is detected optically by chemistry, analyzer. The change in absorbance is proportional to the level of C3 in the sample. The actual concentration is obtained by comparing with a calibration curve with known concentrations.

KIT CONTENTS

R1 - C3 Buffer	1 x 30 ml
R2 - C3 antibody	1 x 10 ml
R3 - C3 Calibrator	0.5 ml

The reagents when stored at 2-8°C are stable up to expiry date printed on the package. The reagents are stable for 7-10 days on board the analyser at 2-10°C. Protect from light and avoid contamination.

WORKING REAGENT PREPARATION AND STABILITY
Assay can be performed with use of separate R1-C3and R2-C3 reagents of 3 parts of R1-C3 with 1 part of R2-C3. Avoid foaming.

CONCENTRATIONS IN THE TEST
R1 - Phosphate buffer, Polyethylene glycol, Sodium azide < 0.1%
R2 - Anti-C3 antibodies, Tris buffer, sodium azide < 0.1%

WARNINGS AND NOTES
1. The Kit is for in vitro diagnostic use only. Not for use in humans or animals.
2. The instructions must be followed to obtain accurate results.
3. Do not use the reagents beyond the expiration date.
4. Treat all specimens as infectious. Proper handling and disposal procedures of specimens and test materials should be strictly followed

ADDITIONAL EQUIPMENT
- Automatic analyzer or photometer able to read at 340 nm
- Thermostat at 37ºC
- General laboratory equipment

SPECIMEN
Follow standard laboratory procedures to collect serum samples. It is recommended to perform test immediately after sample collection. If the test cannot be done immediately, store sample at 2-4° C for up to 3 days or at -20° C for up to 1 months. Avoid repeated freezing and thawing.

PLOTTING OF MULTIPOINT CURVE
The Turbichem C3 is based on Non-Linear Reactions, hence it is strongly recommended to run Multi-standard mode to plot the Multi-point curve to have better accuracy and precise result.

Serial Dilution Step

	1st	2nd	3rd	4th	5th
Calibrator	100 µl	50 µl from 1st Tube	50 µl from 2nd Tube	50 µl from 3rd Tube	50 µl from 4th Tube
Normal Saline	0	50 µl	50 µl	50 µl	50 µl
Ratio of Dillution	Neat	1/2	1/4	1/8	1/16

PROCEDURE
These reagents may be used both for manual assay and in several automatic analyzers. Programme Sheets are available on request.

Wavelength	340 nm
Temperature	37°C
Cuvett	1 cm

Pipette into the cuvette:

Reagent	Blank	Calibrator (C)	Test-(T)
R1 C3 Buffer	750 µl	750 µl	750 µl
Calibrator	-	10 µl	-
Sample	-	-	10 µl
Distilled Water	10 µl	-	-
Mix well and incubator for 5 mins. at 37° C			
R2 C3 Antibody	250 µl	250 µl	250 µl

Mix well & incubate for 5 min. at 37°C. Measure the absorbance of calibrator & sample against reagent blank (B).

CALCULATION
$$C3 \text{ concentration} = \frac{\text{Abs.Test}}{\text{Abs.Calibrator}} \times \text{Calibrator Concentration}$$

REFERENCE VALUES
80 to 185 mg/dL

It is recommended for each laboratory to establish its own reference ranges for local population.

QUALITY CONTROL
To ensure adequate quality control, each run should include assayed normal and abnormal controls. If commercial controls are not available it is recommended that known value samples be aliquoted, frozen and used as controls.

PERFORMANCE CHARACTERISTICS
- **Linearity :** 0 to 500 mg/dL
- **Precision :** within Run CV ≤ 6 %
- **Specificity / Interferences**
  No interference detected for bilirubin upto 60 mg/dL and hemoglobin 10 g/L, triglycerides 1000 mg/dL

WASTE MANAGEMENT

Please refer to local legal requirements.

LITERATURE

1. Burtis C., Ashwood, E.R.(ed). Tietz Textbook of Clinical Chemistry, 3rd ed. Philadelphia, PA; WB Saunders Co; 503-4;1999.
2. De Bruijn MH, Fey GH (February 1985). oc. Natl. Acad. Sci. U.S.A. 82(3): 708–12.
3. Lachmann P (December 1975). . Med. Genet. 12(4): 372–7.
4. Matsuyama W, Nakagawa M, Takashima H, Muranaga F, Sano Y, Osame M (December 2001). "Molecular analysis of hereditary deficiency of the third component of complement (C3) in two sisters". Intern. Med. 40(12): 1254–8.
5. Sahu A, Lambris JD (April 2001). "Structure and biology of complement protein C3, a connecting link between innate and acquired immunity". Immunol. Rev. 180: 35–48.

SYSTEM PARAMETERS

Method	End Point
Wavelength	340 nm
Zero Setting Temperature	Reagent Blank
Setting Incubation	37° C
Temperature Incubation	37° C
Time	5 mins. + 5 mins.
Delay Time	----
Read Time	----
No. of Reading	2
Interval Time	----
Sample Volume	0.01 ml (10 ul)
Reagent Volume	1.0 ml (1000 ul)
Calibrator Concentration	Refer Calibrator vial
Units	mg / dl
Factor	----
Reaction Slope	Increasing
Linearity	500 mg / dl