

Complement C3 (C3c)

Immunturbidimetry

Cat.No	Package Size
812 000	5 x 20 ml R1 / 1 x 20 ml R2
812 031 Hit I BC	4 x 20 ml R1 / 2 x 8 ml R2

General Information

C3c is part of the complement system, a group of plasma proteins and receptor proteins that interact in a proteolytic cascade to destroy bacteria and prevent deposition of immunocomplexes. The result is decrease of C3 and C4. The complement cascade can be activated by two different pathways.

As C3 is common to both pathways decreasing concentrations are indicating general complement activation and are found in inflammatory and infectious diseases e.g. glomerulonephritis and SLE.

Note: C3 as well as C4 react also as acute phase proteins. An increase due to an inflammatory process may mask a moderately increased complement consumption.

Method and Principle

Immunturbidimetric test with endpoint determination of the concentration of C3c through photometric measurement of antigen-antibody-reaction between antibodies to human C3c and C3c present in the sample.

Reagents

Components (concentrations in the test)

R1:	Phosphate Buffer pH 7.5	100 mmol/l
	NaCl	320 mmol/l
	Polyethylenglycol (PEG)	
	Detergents, stabilizers	
R2:	Phosphate Buffer pH 8.0	100 mmol/l
	NaCl	320 mmol/l
	Anti-human C3c antibody (goat) with stabilizers	

Storage / Stability

Reagents R1 and R2 are stable up to the expiry date, if stored at 2 – 8 °C and contamination is avoided. Do not freeze the reagents!

Warnings and Precautions

Reagents contain sodium azide (0.95 g/l). Do not swallow! Avoid contact with skin and mucous membranes!

Waste Management

Please refer to local legal requirements.

Reagent Preparation

The reagents are ready-to-use.

Materials required but not provided

NaCl solution 9 g/l.
General laboratory equipment.

Samples

Serum, heparin or EDTA plasma.

Note:

During storage of serum C3 and C4 proteins slowly fragment into C3c resp. C4c components (fragmentation is inhibited by EDTA). These fragments still contain the reactive epitopes and may even display higher signals than the intact protein. Depending on the conditions of this aging process, fresh serum samples may show up to 30 % lower C3 values than samples stored at 2 – 8 °C for 8 days. The fragmentation of C4 is much slower than for C3 and only 15 % lower values can be observed under similar storage conditions.

Discard contaminated samples!

Reference Range

 (according to IFCC)

75 - 135 mg/dl (0.75 – 1.35 g/l)

Note:

In case of fresh samples a lower reference range is expected.

Each laboratory should establish own reference ranges in order to reflect its specific working conditions.

Assay Procedure

Wavelength	340 nm
Cuvette	1 cm
Temperature	37 °C
Measurement	against reagent blank

	Blank	Sample / calibrator
Sample / calibrator	-	2 µl
Dist. water	2 µl	-
R 1	250 µl	250 µl
Mix, incubate for 3 – 5 min, read absorbance (A1), then add:		
R 2	50 µl	50 µl
Mix, incubate for 5 min, read absorbance (A2)		

$$\Delta A = [(A2 - A1) \text{ sample or calibrator}] - [(A2 - A1) \text{ blank}]$$

Calculation

The concentration of C3 in unknown samples is derived from a calibration curve using an appropriate mathematical model such as logit/log or spline. The calibration curve is obtained with 5 calibrators at different levels and NaCl solution (9 g/l) for determination of the zero value.

Stability of calibration: 4 weeks

Applications for automated systems are available on request.