



**INTENDED USE**

Reagents for In Vitro quantitative automated determination of Complement component 4 - C4 in samples of human serum or plasma from the general patient population. Measurements of C4 are to be used along with other in vitro and in vivo tests and physical examination by licensed physicians, as an aid for the assessment of immune status and complement.

This reagent is formulated specifically for use with Diatron Pictus® P700 and P500 analyzers. For in vitro diagnostic use only by trained laboratory professionals.

**CLINICAL SIGNIFICANCE**

Increased serum C4 levels are observed in several types of malignancies. Reduced levels appear in autoimmune haemolytic anaemia, glomerulonephritis, cryoglobulinemias, rheumatoid arthritis, Sjogren's syndrome, respiratory distress syndrome, protein malabsorption syndrome, infectious endocarditis with secondary glomerulonephritis, hereditary angioedema.

**METHOD PRINCIPLE**

The immunoturbidimetric method is applied. When sample is mixed with the appropriate buffer (R1) and antiserum solution (R2), C4 reacts selectively with anti-C4 antibodies, leading to formation of insoluble aggregates. The absorbance of these aggregates at 340/700 nm is proportional to the concentration of C4 in the sample.

**METHOD LIMITATIONS**

Refer to the book "Effects of Preanalytical Variables on Clinical Laboratory Tests" for possible interference of other pharmaceutical agents in this particular test. Interference of other agents is described in the "Clinical Guide to Laboratory Tests". This reagent is formulated specifically for use with Diatron Pictus® P700 and P500 analyzers. For additional information please contact customer support at Diatron or Medicon.

**REAGENT COMPOSITION**

Reagent 1 (R1)	Reagent 2 (R2)
Polyethylene glycol in Tris buffer	Goat anti-human C4 protein antibodies
Non-reactive ingredients, preservatives	Non-reactive ingredients, preservatives

**WARNINGS - PRECAUTIONS**

- This reagent is designed for in vitro diagnostic use. In vitro diagnostic reagents can be hazardous. They should be handled according to good laboratory techniques. Avoid inhalation and contact with eyes and skin.
- Samples should be considered as potentially infectious. Handle with special caution.
- Antisera are raised in clinically healthy animals in monitored facilities under constant surveillance.
- This reagent contains sodium azide (NaN<sub>3</sub>) ≤ 0.1%. Avoid swallowing and contact of the reagent with skin and mucous membranes
- Any serious incident that may occur in relation to this device must be reported by the user to the manufacturer and the competent authority of the country in which the user and/or the patient is established!
- Dispose all waste according to national laws.
- MSDS is available by Diatron or MEDICON upon request.

**PREPARATION**

Reagents R1 and R2 are liquid, ready to use when placed in the corresponding positions of the analyzer. The vials have barcodes for automatic recognition by Diatron Pictus® P700 / P500 analyzers.

**REAGENT DETERIORATION**

The reagents should not be used:

- When they do not exhibit the specified linearity or control values lie outside the acceptable range after recalibration.
- After prolonged exposure to sunlight or high temperature.
- When the solution is turbid.

**SHELF LIFE**

Unopened, reagents are stable at 2°- 8°C up to the expiry date stated on the label. Once opened, they remain stable for 2 months when stored in the cooled reagent tray of the Diatron Pictus® P700 or P500 analyzers.

**SAMPLE**

Serum or EDTA plasma can be used as specimen. Use established Good Laboratory Practices for sampling, transport and separation from blood cells. Do not use hemolyzed, contaminated or turbid sample specimens. Anti-coagulants other than EDTA have not been tested and should not be used. Centrifuge sample as soon as possible, separate serum or plasma from blood cells and store properly if analysis cannot take place right after sample separation. C4 is stable in serum or plasma samples for 6 hours at room temperature, 24 hours when stored at 2 - 8°C, and for 7 days when stored at -20°C. For longer storage, keep samples at -70°C.

**CALIBRATION** Diatron offers MEDICON Protein Standard Set (1578-1190) traceable to ERM-DA470k for calibration. Recalibrate the assay every 1 month on Pictus® P700 or P500 analyzers. Calibration should also be repeated after major maintenance is performed on the analyzer, after a critical part is replaced, or when a significant shift in control values occurs.

**QUALITY CONTROL** Diatron offers MEDICON Immunology Control Levels 1,2,3 (1578-1195-04, 1578-1196-04, 1578-1197-04 respectively) for quality control. Control recovery should lie within the acceptable range. Results outside the acceptable range even after recalibration could be due to reagent deterioration, unsuitable storage conditions or control deterioration, instrument malfunction, or error during test procedure.

**MATERIALS REQUIRED BUT NOT PROVIDED WITH THE KIT**

- C4 Calibrator
- Quality control materials
- Diatron Pictus® analyzer
- Common laboratory equipment

**REFERENCE INTERVALS**

Serum/Plasma: 15 - 48 mg/dL

Reference values are based on current bibliography. Each laboratory should determine its own expected values as dictated by good laboratory practices.

**WASTE DISPOSAL**

This product contains sodium azide (NaN<sub>3</sub>), which forms sensitive explosive compounds with copper or lead. Flush waste pipes with water after the disposal of undiluted reagent in order to avoid azide build up in the drain pipes.

**SPECIFIC PERFORMANCE CHARACTERISTICS**

The following values are representative of the reagent performance on Diatron Pictus® P700 or P500 analyzers. The reagent performance has been evaluated on other types of analyzers, covering all requirements of the 98/79 IVD Directive. A list of analyzers with the corresponding performance characteristics is available in the special leaflet accompanying the insert. The results taken in your laboratory may differ from these values.

**Linearity** Up to 120 mg/dL

**Hook effect** > 2000 mg/dL

**Lowest detection limit** 0.4 mg/dL

The lowest detection limit (LDL) is defined as the lowest concentration of analyte that is distinguishable from zero. A sample free of analyte is assayed 20 times within the assay and the LDL is calculated as the absolute mean plus three standard deviations.

**Precision:** Precision is estimated on two concentration levels of analyte according to CLSI protocol EP 5-A (20 consecutive days, 2 runs per day, 2 repeats per run).

Pictus® P700 and P500	
Level (mg/dL)	%CV
15.4	1.76
29.7	0.94
43.2	0.74
Level (mg/dL)	TOTAL %CV
15.4	2.70
29.7	3.03
43.2	2.04

**INTERFERENCES - Criterion: recovery within +10% from target value (Insignificant up to)**

Triglycerides	1200 mg/dL
Hemoglobin	200 mg/dL
Bilirubin	20 mg/dL
Conj. Bilirubin	20 mg/dL
Ascorbate	3 mg/dL

**Correlation:** A comparison was performed between this reagent on a Diatron Pictus® P700 and P500 analyzer and another commercially available product. The results were as follows:

y = 0.979X-5.12 R=0.9498 N=27 Sample Range = 10.8 - 62.4 mg/dL

**BIBLIOGRAPHY**

- Tietz, NW, ed. Clinical Guide to Laboratory Tests. 3rd. ed. Philadelphia: W.B. Saunders Company Ltd., 1995.
- Burtis, CA and Ashwood, ER, ed. Tietz Textbook of Clinical Chemistry. 2nd. ed. Philadelphia: W.B. Saunders Company Ltd., 1994.
- Jacobs, DJ, Demott, WR, Grady, HJ, Horvat, RJ, Huestis, DW and Kasten, BL, JR, eds. Laboratory Test Handbook. 4th. ed. Ohio, Hudson: Lexi-Comp Inc., 1996.
- The American Association for Clinical Chemistry, Inc. Effects of Preanalytical Variables on Clinical Laboratory Tests. 2nd. ed. Ohio, Hudson: Lexi-Comp Inc., 1997.

\* PICTUS®: Registered Trademark of Diatron Medical Instruments Limited, Táblás utca 39, H-1097 Budapest, Hungary, used here after contractual agreement.