Features & Advantages of DiaSys Immunoturbidimetric Assays

- Liquid-stable, ready-to-use reagents, calibrators and controls
- Long shelf life, on-board and calibration stability
- Wide measuring range combined with high prozone security
- Minimized interferences, advanced lipid-clearing system
- Fully quantitative results
- Traceability based on international reference material or method
- Convenient kits for automated systems and multi-purpose use
- Flexible applicability on clinical chemistry analyzers

CHOOSING QUALITY.

DiaSys Immunoturbidimetric Tests

Albumin in Urine/CSF FS (Microalbumin)	oneHbA1c FS
Antistreptolysin O FS	Immunoglobulin A FS
Apolipoprotein A1 FS	Immunoglobulin E FS
Apolipoprotein B FS	Immunoglobulin G FS
Complement C3c FS	Immunoglobulin M FS
Complement C4 FS	Lp(a) 21 FS
CRP FS	Myoglobin FS
CRP U-hs (Universal and high sensitive)	Prealbumin FS
Cystatin C FS	Rheumatoid factor FS
D-Dimer FS	Transferrin FS
Ferritin FS	

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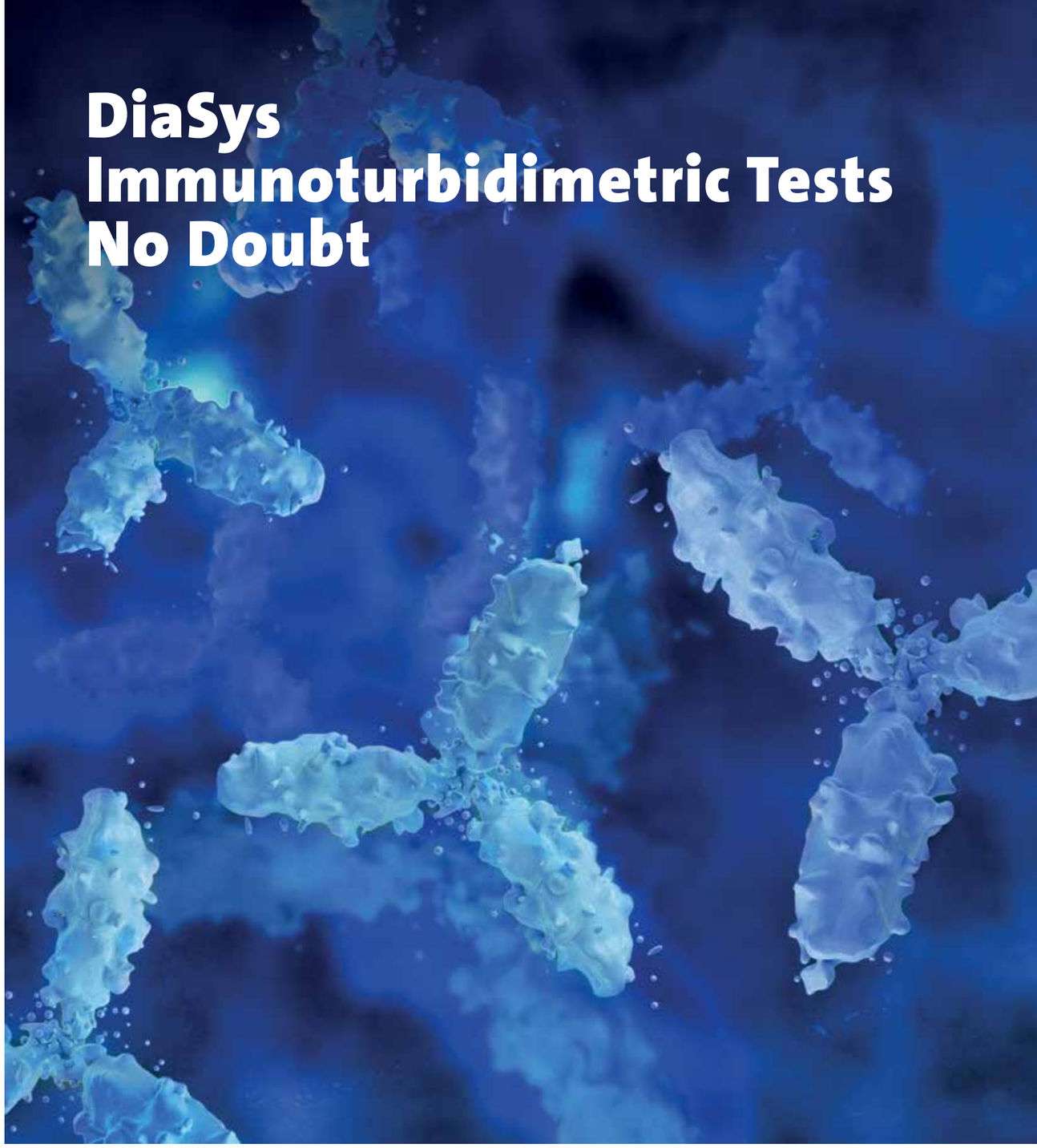
DiaSys Immunoturbidimetric Tests No Doubt



Stable. Standardized. Sensitive.
Economic Solutions with Highest Flexibility.

DiaSys
Diagnostic Systems

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Immunoturbidimetry

Immunoturbidimetry allows quantitative determination of proteins by specific antigen-antibody reaction. This interaction causes agglutination leading to turbidity, directly influencing the intensity of the transmitted light. The latter is measured photometrically and correlates with the concentration of the analyte in the sample. Two kinds of turbidimetric testing are feasible: Direct and particle-enhanced immunoturbidimetry. In direct immunoturbidimetry antibodies form an immune complex by direct attachment to their corresponding antigen (Fig. 1).

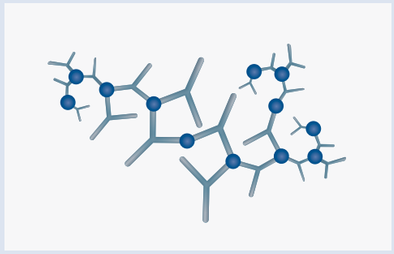


Fig. 1: Principle of direct immunoturbidimetry

The principle of particle-enhanced immunoturbidimetry is based on particles coated with the antibodies of interest, forming complexes with the antigen in the sample (Fig. 2). Particle-enhanced immunoturbidimetric tests are especially useful if an antigen is present in low concentration. By this approach, microscopic particles enlarge the formed immune complexes, amplify the signal and thereby lead to a significantly increased sensitivity of this method.

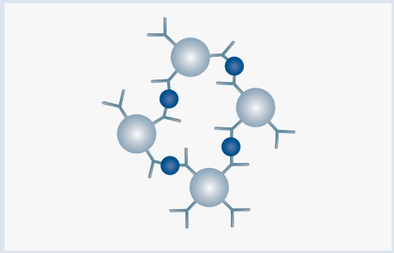


Fig. 2: Principle of particle-enhanced immunoturbidimetry

Prozone Security

Optimal antibody-antigen ratio leads to maximal precipitation (Fig. 3). If the antigen concentration exceeds a certain level, antibody saturation occurs, followed by decreased precipitation and, in turn, lower measuring signals. This effect is described as high dose hook or antigen excess effect. Signals being caused by this effect could be interpreted as falsely low values and might lead to wrong clinical decisions.

With DiaSys immunoturbidimetric assays there is no risk for misinterpretation, since our reagents combine high measuring ranges with excellent prozone security (Fig. 4). Thereby, falsely low values are avoided, ensuring reliable results without time-consuming reruns.

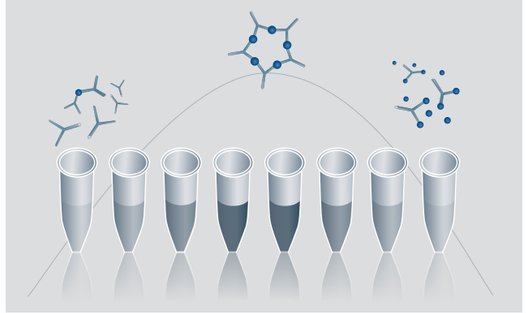


Fig. 3: Scheme of Heidelberger-Kendall curve

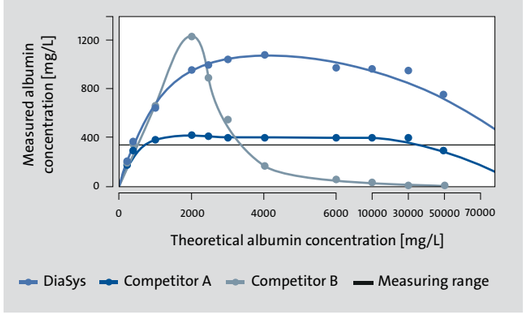


Fig. 4: Prozone security comparison

Advantages of Turbidimetric Testing

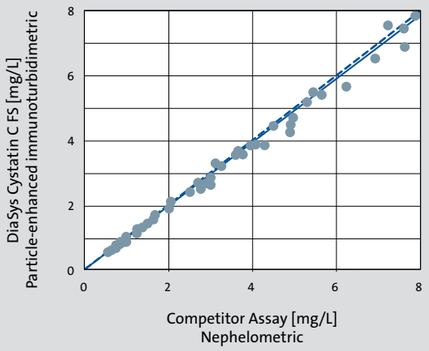
Immunoturbidimetry comprises turbidimetry and nephelometry. Both methods are suitable to determine a protein concentration in a sample of interest. Turbidimetry measures the absorbance of light caused by the sample, whereas by nephelometry the scattered light at a fixed angle is determined. In the past, nephelometric assays were more sensitive compared to turbidimetric tests, but today innovative turbidimetric methodologies achieve equal sensitivity.

Several benefits qualify turbidimetry as the more adequate methodology. Turbidimetric testing requires no dedicated analyzer, since these assays are flexibly applicable to common photometric analyzers. Therefore, turbidimetry does not cause additional costs as e.g. for purchasing a dedicated instrument or consumables, representing an economic and effective alternative to nephelometric testing. Turbidimetry facilitates fully automated processing, without time-consuming sample splitting, thereby allowing higher sample throughput and increasing your laboratory efficiency.

The usage of agglutination slides, a more obsolescent way of testing, is also associated with several disadvantages. By this method neither exact quantification nor true differentiation of borderline cases from positive or negative cases is feasible, limiting its use for therapeutic monitoring. Automation and standardization are not applicable; Manual testing involves high contamination risk for the user and the analyzed sample.

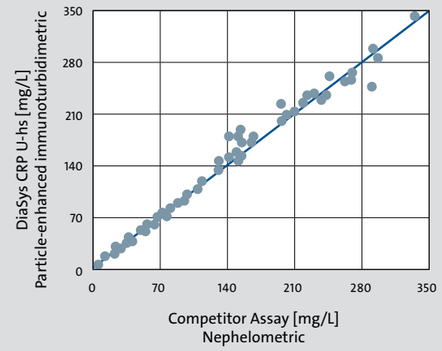
DiaSys immunoturbidimetric assays vs competitor assays

Cystatin C FS



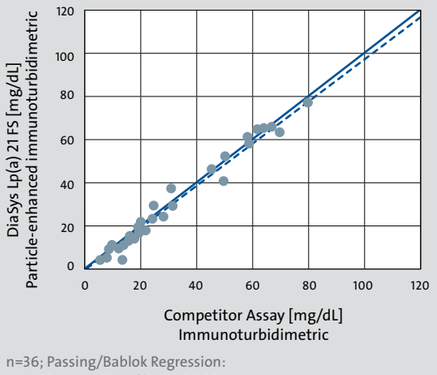
n = 109; Passing/Bablok Regression:
Y = 0.974 x + 0.017 mg/L; r = 0.997

CRP U-hs



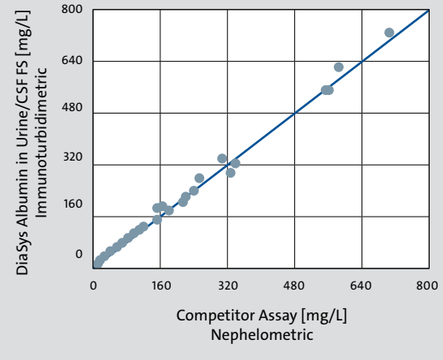
n = 104; Passing/Bablok Regression:
Y = 0.998 x - 0.627 mg/L; r = 0.996

Lp(a) 21 FS



n=36; Passing/Bablok Regression:
Y = 1.051 x – 2.71 mg/dL; r = 0.990

Albumin in Urine/CSF FS (Microalbumin)



n=123; Passing/Bablok Regression:
Y = 1.01 x - 0.302 mg/L; r = 0.998