CE

IgA (Immunoglobulin A)

Turbidimetry

Quantitative determination of human immunoglobulin A (IgA)
IVD

Store 2 - 8ºC.

INTENDED USE
The IgA is a quantitative turbidimetric test for the measurement of IgA in human serum or plasma.

PRINCIPLE OF THE METHOD
Anti-human IgA antibodies when mixed with samples containing IgA, form insoluble complexes. These complexes cause an absorbance change, dependent upon the IgA concentration of the patient sample, that can be quantified by comparison from a calibrator of know IgA concentration.

CLINICAL SIGNIFICANCE
IgA represents approximately 10 to 15% of total serum immunoglobulins. Its structure is monomeric, similar to the IgG molecule, but 10 to 15% of IgA in serum is polymeric, particularly IgA_2, which is more resistant to destruction by some pathogenic bacteria. Another more important form of IgA is called secretory IgA. It is found in tears, sweat, saliva, milk and gastrointestinal and bronchial secretions.
IgA is generally increased in skin, pulmonary, kidney infections, and hepatic cirrhosis. Increased monoclonal IgA concentrations may be found in multiple myeloma and other disturbances of plasmatic cells.

REAGENTS

Diluent (R1)	Tris buffer 20 mmol/L, PEG 8000, pH 8.3 Sodium azide 0.95 g/L..
Antibody (R2)	Goat serum, anti-human IgA, pH 7.5. Sodium azida 0.95 g/L.
Optional	Cod: 1102003 PROT CAL.

CALIBRATION
The assay is calibrated to the Reference Material CRM 470/RPPHS (Institute of Reference of Materials and Measurements, IRMM). It must be used the PROT CAL Calibrator to calibrate the reagent. The reagent (both monoreagent and bireagent) should be recalibrated every month, when the controls are out of specifications, and when changing the reagent lot or the instrument settings.

PREPARATION
Reagents: Ready to use.

Calibration Curve: Prepare the following PROT CAL Calibrator dilutions in NaCl 9 g/L as diluent. Multiply the concentration of the IgA calibrator by the corresponding factor stated in table bellow to obtain the IgA concentration of each dilution.

Calibrator dilution	1	2	3	4	5	6
Calibrator (µL)	--	10	25	50	75	100
NaCl 9 g/L (µL)	100	90	75	50	25	-
Factor	0	0.1	0.25	0.5	0.75	1.0

STORAGE AND STABILITY
All the components of the kit are stable until the expiration date on the label when stored tightly closed at 2-8ºC and contaminations are prevented during their use. Do not use reagents over the expiration date.
Reagent deterioration: The presence of particles and turbidity.
Do not freeze; frozen Antibody or Diluent could change the functionality of the test.

ADDITIONAL EQUIPMENT
- Thermostatic bath at 37ºC.
- Spectrophotometer or photometer thermostatable at 37ºC with a 600 nm filter (580 – 620 nm).

SAMPLES
Fresh serum or plasma. EDTA or heparin should be used as anticoagulant. Stable 7 days at 2-8ºC or 3 months at –20ºC.
The samples with presence of fibrin should be centrifuged.
Do not use highly hemolized or lipemic samples.

PROCEDURE
1. Bring the reagents and the photometer (cuvette holder) to 37ºC.
2. Assay conditions:
   Wavelength : 600
   Temperature : 37 ºC
   Cuvette ligth path : 1cm
3. Adjust the instrument to zero with distilled water.
4. Pipette into a cuvette:

Reagent R1	800 µL
Sample or Calibrator	10 µL

5. Mix and read the absorbance (A_1) after 5 minutes.

Reagent R2	200 µL

6. Mix and read the absorbance (A_2) of calibrators and sample exactly 5 minutes after the R2 addition.

Audit Diagnostics has instruction sheets for several automatic analyzers. Instructions for many of them are available on request.

CALCULATIONS
Calculate the absorbance difference (A_2-A_1) of each point of the calibration curve and plot the values obtained against the IgA concentration of each calibrator dilution. IgA concentration in the sample is calculated by interpolation of its (A_2-A_1) in the calibration curve.

QUALITY CONTROL
Control sera are recommended to monitor the performance of manual and automated assay procedures. Audit Diagnostics PROT CONTROL .
Each laboratory should establish its own Quality Control scheme and corrective actions if controls do not meet the acceptable tolerances.

REFERENCE VALUES[4]
Between 70 - 400 mg/dL. Each laboratory should establish its own reference range.

PERFORMANCE CHARACTERISTICS
1. Measurement range: Up to 600 mg/dL, under the described assay conditions. Samples with higher concentrations, should be diluted 1/5 in NaCl 9 g/L and re-tested again. The linearity limit and measurement range depends on the sample to reagent / ratio. It will be higher by decreasing the sample volume, although the sensitivity of the test will be proportionally decreased.
2. Limit detection: Values less than 1 mg/dL give non-reproducible results.
3. Prozone effect: No prozone effect was detected upon 2000 mg/dL
4. Sensitivity: Δ 2.1 mA. mg/dL at 2**0** mg/dL.
5. Precision: The reagent has been tested for 20 days, using three levels of serum in a EP5-based study.

EP5	CV (%)		
	127.7 mg/dl	196.9 mg/dl	416.3 mg/dl
Total	8.2%	5.2%	3.5%
Within Run	1.7%	1.5%	1%
Between Run	2.2%	1.9%	2.4%
Between Day	7.7%	4.6%	2.3%

6. Accuracy: Results obtained using this reagent (y) were compared to those obtained using an immunoturbidimetric method from Bayer. 46 samples ranging from 20 to 400 mg/dL of IgA were assayed. The correlation coefficient (r) was 0.97 and the regression equation y = 1.16x – 12.2.

The results of the performance characteristics depend on the used analyzer.

INTERFERENCES
Hemoglobin (500 mg/dl), bilirrubin (30mg/dL) and lipemia (800 mg/dl),do not interfere. Rheumatoid factors may interfere at 900 IU/mL. Other substances may interfere[6,7].

NOTES
1. Clinical diagnosis should not be made on findings of a single test result, but should integrate both clinical and laboratory data.

BIBLIOGRAPHY

1. Clinical Guide to Laboratory Tests, Edited by NW Tietz W B Saunders Co., Phipladelphia, 483, 1983.
2. Skoug Jonh W et al. Clin Chem 1988; 34/2: 309 - 315
3. Pesce AJ and Kaplan, LA. Methods in Clinical Chemistry. The CV Mosby Company, St. Louis MO, 1987.
4. Dati F et al. Eur J Clin Chem Clin Biochem 1996; 34: 517-520.
5. Young DS.Effects of disease on clinical laboratory tests, 3th ed. AACC Pres, 1997
6. Friedman and Young. Effects of disease on clinical laboratory tests, 3tn ed. AACC Pres, 1997.