Product	Product Code
C-Reactive Protein	TRAI/CRP/AUC-000
Method	Measurement of antigen-antibody reaction by end point method.
Measuring Range	0.5 - 22 mg/dl
Specificity	Monospecific
Hookeffect	>84 mg/dl
No interference for	Haemoglobin - 1000 mg/dl, Bilirubin - 20 mg/dl, Triglyceride - 2500 mg/dl Sod. Citrate - 1000 mg/dl, Heparin - 50 mg/dl
Kit Contents	**Buffer: 5x25ml, Antiserum: 1x10ml**

Clinical Significance

C-Reactive Protein is a non-specific acute phase-reactive protein, which appears in blood during an inflammatory process. CRP is normally present in low concentration in blood of healthy person (<5 mg/l). It is elevated up to 100 times in acute inflammatory processes associated with bacterial infections, post operative conditions or tissue damage. In patient with inflammatory diseases the concentration of CRP increases and decreases more quickly than the red cells sedimentation rate (ESR).

References : 1. Manack, J.r. and richards, CB.,J.Immunol.20, 1019 (1971). 2. Thompson D, Milford - Ward A, Whicher JT. The value of acute phase protein measurements in clinical praactice. Ann Clin Biochem, 29, 123-131 (1992). 3.Ritchie, RF., J.Lab. Clin. Med. 70, 512 (1967). 4. Gabay.C.Kushner I, N Engl J.Med 340, 448-454 (1999).

Transferrin	TRAI/TRF/AUC-000
Method	Measurement of antigen-antibody reaction by end point method.
Measuring Range	40 - 500 mg/dl
Specificity	Monospecific
Hookeffect	>1400 mg/dl
No interference for	Haemoglobin - 1000 mg/dl, Bilirubin - 20 mg/dl, Triglyceride - 2500 mg/dl
Kit Contents	**Buffer: 5x25ml, Antiserum: 1x10ml**

Clinical Significance

Iron binding protein, binds ferric ions preventing iron intoxication and loss via kidneys. Increased levels are found in iron deficiency, pregnancy, oestrogen administration and lipoidal nephrosis. Decreased levels may be encountered in hereditary deficiencies, testosterone administration, infection, acute inflammation, some forms of nephrosis, tumors, haemochromatosis, acute malaria and malnutrition.

References: Dati, F.et.al., Lab.Med 13, 87 (1989)

Controls

Product Code	Description	Pack
TRA1/PRO/CON-001	Protein Control I (IGA, IGG, IGM, TRF, C3, C4)	1 ml
TRA1/CRP/COL-001	CRP Control Low	1 ml
TRA1/CRP/COH-001	CRP Control High	1 ml
TRA1/APO/CON-001	APO A1/B Control	1 ml
TRA1/MAL/CON-001	Microalbumin Control	1 ml
TRA1/RHF/CON-001	RF Control	1 ml
TRA1/ASL/CON-001	ASO Control	1 ml
TRA1/LPA/COL-001	Lp(a) Control Low	1 ml
TRA1/LPA/COH-001	Lp(a) Control High	1 ml
TRA1/FER/COL-001	FER Control Low	1 ml
TRA1/FER/COH-001	FER Control High	1 ml
TRAI/APB/AUT-000	Apo B	1 x10 ml 5 x 25 ml
TRAI/C3C/AUT-000	C3 Complement	1x10 ml 5x25 ml

Calibrators

Product Code	Description	Pack
TRA1/APO-A/CAL-001	APO A High Calibrator	1 ml
TRA1/APO-B/CAL-001	APO B High Calibrator	1 ml
TRA1/ASL/CAL-001	ASL(O) Low Calibrator	1 ml
TRA1/ASL-S/CAL-001	ASL(O) Calibrator series	4 x 1 ml
TRA1/C3/CAL-001	Complememt C3 Calibrator	1 ml
TRA1/C4/CAL-001	Complement C4 Calibrator	1 ml
TRA1/CRP-H/CAL-001	CRP High Calibrator	1 ml
TRA1/CRP-L/CAL-001	CRP Low Calibrator	1 ml
TRA1/FER-S/CAL-001	Ferritin Calibrator Set	6 x 1ml
TRA1/IGA/CAL-001	IgA High Calibrator	1 ml
TRA1/IGG/CAL-001	IgG High Calibrator	1 ml
TRA1/IGM/CAL-001	IgM High Calibrator	1 ml
TRA1/LPA/CAL-001	Lipoprotein (a) Calibrator	1 ml
TRA1/MAL/CAL-001	Microalbumin High Calibrator	1 ml
TRA1/RF-H/CAL-001	RF Super High Calibrator	1 ml
TRA1/RF/CAL-001	RF High Calibrator	1 ml
TRA1/TRF/CAL-001	Transferrin High Calibrator	1 ml
TRA1/TRF-S/CAL-001	Transferrin Calibrator Set	5 x 1 ml
TRAI/C4C/AUT-000	C4 Complement	1x10 ml 5x25 ml
TRAI/CRP/AUT-000	CRP	1 x10 ml
		5 x 25 ml
TRAI/RF4/AUT-000	RF	1 x 25 ml 5 x 25 ml

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Product	Product Code
Apolipoprotein A1	TRAI/APA/AUC-000
Method	Measurement of antigen-antibody reaction by end point method.
Measuring Range	4 - 300 mg/dl
Specificity	Monospecific
Hookeffect	>500 mg/dl
No interference for	Haemoglobin - 1000 mg/dl, Bilirubin - 20 mg/dl, Triglyceride - 2500 mg/dl
Kit Contents	**Buffer:5x25ml, Antiserum:1x10ml**

Clinical Significance

Apo A1 is the main protein component of High Density Lipoprotein and activates Lecithin Cholesterol Acyl Transferase which catalyses the esterification of cholesterol. The resulting esterified cholesterol can then be transported to liver, metabolised and excreted. Apo A1 removes cholesterol from the cell and thus has a protective effect to atherosclerosis. Persons with atherosclerotic vascular changes frequently exhibit decreased levels of Apo A1. Even if the concentrations of apolipoprotein B are normal a, decreased Apo A1 level may be a risk factor for atherosclerotic processes.

References: 1. Rifai, n., Ann. Clin. Lab Science. 18,429 (1988). 2. Gordon, T.et.al., Ann. J.Med.62,707 (1977) 3. Rieser, W.et.al., Atherosclerosis 37, 157 (1980). 4. Alanpovic, P., Ann. Biol. Clin 38, 83 (1980)

Apolipoprotein B	TRAI/APB/AUC-000
Method	Measurement of antigen-antibody reaction by end point method.
Measuring Range	4 - 350mg/dl
Specificity	Monospecific
No interference for	Haemoglobin - 1000mg/dl, Bilirubin - 20 mg/dl, Triglyceride - 2500mg/dl
Kit Contents	**Buffer: 5x25ml, Antiserum: 1x10ml**

Clinical Significance

Apolipoprotein B is the main protein component of LDL. Apolipoprotein B is necessary for the reaction with LDL receptors in the liver and on cell walls, and is thus involved in transporting cholesterol from the liver to vessels, thus contributing to atherosclerotic plaque formation in arteries. Elevated levels of Apolipoprotein B are frequently found in atherosclerotic vascular changes and is a risk factor for atherosclerosis.

References: 1. Naito, H.K., J.Clin. Immunoassay, 9, 155 (1986). 2. Kottke, B.A., et. al., Mayo Clin. Proc., 61, 313 (1986). 3. Dati, F.et.al., Lab. Med. 13, 87 (1989)

Anti-Streptolysin (O)	TRAI/ASL/AUC-000
Method	Measurement of antigen-antibody reaction by end point method.
Measuring Range	12.5 - 400 IU/ml
Specificity	Monospecific
Kit Contents	**Buffer: 5x25ml, Latex: 1x10ml**

Clinical Significance

The Group A Streptococcus (GAS) produces various toxins that can act as antigen. One of these exotoxins is Streptolysin O. Antistreptolysin O reaction provides useful information for diagnosis of streptococcal infections such as tonsillitis, erysipela, rheumatic fever and glomerulonephritis. The ASO level can be regarded as a measure of the extent and degree of infection.

References: 1. Dillon, H.C. jr., Reeves M.A., Am. J. Med.,56,333-346 (1974). 2. Klein, G.C., Baker, C.N., Jones, W.L., 21, 999-1001 91971). 3. Bisno AL. Group A infections & acute rheumatic fever. n.Eng J.Med 1991, 325, 783-793.

Complement C3	TRAI/C3C/AUC-000
Method	Measurement of antigen-antibody reaction by end point method.
Measuring Range	20 - 400 mg/dl
Specificity	Monospecific
Hookeffect	>1000 mg/dl
No interference for	Haemoglobin - 1000 mg/dl, Bilirubin - 20 mg/dl, Triglyceride - 2500 mg/dl
Kit Contents	**Buffer: 5x25ml, Antiserum: 1x10ml**

Clinical Significance

Clinical Significance C3 / C4: Complement is a complex biological system which works in conjunction with antibody and other factors to protect the body from invasion by pathogens. The activation results in decreased concentrations of C3 and/or C4 due to consumption of the intact protein. The complement cascade can be activated by either Classical or alternative pathways. C3 is the central point of the Classic and Alternative complement pathway. The Classical pathway is activated by immunocomplexes or antibody bound to bacteria or virus. Proteolysis of C4 is involved in classical pathway. The alternative pathway is activated independent of antibodies by micro-organisms, polysaccharides and does not need C4 protein. Lowered C3 values are found in inflammatory and infectious diseases especially in glomerulonephritis and SLE (Systemic Lupus Erythematodes). Isolated low values of C4 can occur in hereditary and acquired angioneurotic oedema.

References: 1. Dati.F.et.al., Lab.Med. 13, 87 (1989). 2. Thomas L. Clin. Chem Lab Diag., 794-806 (1998). 3. Johnson AM, Rohlfs EM, Silverman LM., Text ook of Clin Chem., 507-512 (1999)

Complement C4	TRAI/C4C/AUC-000
Method	Measurement of antigen-antibody reaction by end point method.
Measuring Range	2 - 80 mg/dl
Specificity	Monospecific
Hookeffect	>1000 mg/dl
No interference for	Haemoglobin - 1000mg/dl, Bilirubin - 20 mg/dl, Triglyceride - 2500mg/dl
Kit Contents	**Buffer: 5x25ml, Antiserum: 1x10ml**

Ferritin	TRAI/FER/AUC-000
Method	Measurement of antigen-antibody reaction by end point method.
Measuring Range	10 - 500 ng/ml
Specificity	Monospecific
No interference for	Hemoglobin - 550mg/dl, Bilirubin - 26.1mg/dl, Triglyceride - 1250mg/dl
Kit Contents	**Buffer:3x24ml, Latex:3x4ml**

Clinical Significance

The plasma Ferritin concentration declines very early in the development of iron deficiency. On the other hand, a large number of chronic diseases result in increased serum ferritin concentrations. These diseases include chronic infections, chronic inflammatory disorders such as rheumatoid arthritis or renal disease and numerous types of malignancies, especially lymphomas, leukaemia's, breast cancer and neuroblastoma.

References: walters, G.O.et .al: Serum Ferritin Concentrations and Iron Stores in Normal Subjects. J.Clin. Pathol. 26 (1973) 770.

Product	Product Code
IgA	TRAI/IGA/AUC-000
Method	Measurement of antigen-antibody reaction by end point method.
Measuring Range	6 - 600 mg/dl
Specificity	Monospecific
Hookeffect	>6000 mg/dl
No interference for	Haemoglobin - 1000 mg/dl, Bilirubin - 20 mg/dl, Triglyceride - 2500 mg/dl
Kit Contents	**Buffer: 5x25ml, Antiserum: 1x10ml**

Clinical Significance

The measurement of IgA is important for typing immunodeficiencies and myelomas. Furthermore, it plays a role in acute and chronic infections as first line of defence. The main function of IgA is to bind to antigens and trigger further catabolism of the antigen. Increased levels may be found in acute infectious hepatitis, chronic aggressive hepatitis, posthepatic/cryptogenic cirrhosis, active alcoholic cirrhosis, chronic infection, rheumatoid arthritis.

References: Dati, F.et.al., Lab. Med.13, 87 (1989)

IgG	TRAI/IGG/AUC-000
Method	Measurement of antigen-antibody reaction by end point method.
Measuring Range	90 - 2700 mg/dl
Specificity	Monospecific
Hookeffect	>1000 mg/dl
No interference for	Haemoglobin - 1000 mg/dl, Bilirubin - 20 mg/dl, Triglyceride - 2500 mg/dl Sod. Citrate - 1000 mg/dl, Heparin - 50 mg/dl
Kit Contents	**Buffer: 5x25ml, Antiserum: 1x10ml**

Clinical Significance

IgG is a predominant serum immunoglobulin. The measurement of IgG is important for typing immunodeficiencies and myelomas. The main function of IgG is to bind to antigens, initiating complement activation and trigger further catabolism of the antigen. Increased levels may be found in chronic infections and chronic inflammation. IgG is the only immunoglobulin which crosses placenta and is therefore of special importance in infants defence against infection.

References: Dati, F.et.al., Lab. Med.13, 87 (1989)

IgM	TRAI/IGM/AUC-000
Method	Measurement of antigen-antibody reaction by end point method.
Measuring Range	10 - 500 mg/dl
Specificity	Monospecific
Hookeffect	>6500 mg/dl
No interference for	Haemoglobin - 1000mg/dl, Bilirubin - 20 mg/dl, Triglyceride - 2500mg/dl
Kit Contents	**Buffer: 5x25ml, Antiserum: 1x10ml**

Clinical Significance

IgM is important in early response to infection. IgM is the immunoglobulin class synthesized first after initial contact with a new antigen. The measurement of IgM is important for typing immunodeficiency and myelomas. IgM plays an important role in the humoral defence of the body. Serum levels may be increased in all kind of acute infections. Elevated levels in cord serum suggest clinical infection in the newborn.

References: 1. Naito, H.K., J. Clin. Immunoassay, 9, 155 (1986) . 2. Kottke, B.A., et.al., Mayo Clin. Proc., 61, 313 (1986). 3. Dati. F.et.al., Lab.Med. 13, 87 (1989).

Lipoprotein (a)	TRAI/LPA/AUC-000
Method	Measurement of antigen-antibody reaction by end point method.
Measuring Range	6 - 80 mg/dl
Specificity	Monospecific
No interference for	Haemoglobin - 500 mg/dl, Bilirubin - 30 mg/dl, Triglyceride - 2500 mg/dl
Kit Contents	**Buffer: 2x25ml, Latex: 1x5ml**

Clinical Significance

Lipoprotein (a) is a human serum protein whose structure is close to that of LDL and its density lies between LDL and HDL. The Lp(a) concentration in blood varies from almost undetectable levels to more than 100 mg/dl. The presence of high Lp(a) levels in serum is a significant marker of increased risk for atherosclerosis and coronary heart disease. Epidemiological studies have shown, that people with normal serum cholesterol and a serum Lp(a) level over 30 mg/dl have a double risk of coronary heart disease.

References: Poulik, M.D., and Weiss, M.L., in F.W. Putman, Editor, "The plasma Proteins", vol.2 second edition, Academic Press, New York, pp.52-108.

Microalbumin	TRAI/MAL/AUC-000
Method	Measurement of antigen-antibody reaction by end point method.
Measuring Range	12.5 - 400 mg/L
Specificity	Monospecific
Hookeffect	>4000 mg/dl
No interference for	Triglyceride - 2500 mg/dl
Kit Contents	**Buffer: 5x25ml, Antiserum: 1x10ml**

Clinical Significance

Diabetic nephropathy, which is accompanied by irreversible kidney damage and persistent proteinuria, is a major cause of death in persons with insulin dependent diabetes mellitus. An early sign of diabetic nephropathy are small albumin secretions in urine, i.e. Microalbuminuria. Therefore, detection of kidney (glomerular) damage that is minimal and reversible is important.

References : 1. Mount, j.N., J. Clin. Pathology, 22, 12 (1986) 2. Schmidtz, A., et.al., Diabetic Medicine, 5, 126 (1988)

Rheumatoid Factor	TRAI/RF4/AUC-000
Method	Measurement of antigen-antibody reaction by end point method.
Measuring Range	20 - 500 IU/ml
Specificity	Monospecific
No interference for	Hemoglobin - 500 mg/dl, Bilirubin - 50 mg/dl, Ascorbic Acid - 50 mg/dl
Kit Contents	**Buffer: 5x25ml, Reagent: 1x30ml**

Clinical Significance

The diagnosis of Rheumatoid Arthritis (RA) is based largely on clinical examination, but laboratory investigations are useful to support the clinical diagnosis and to evaluate the severity and course of the disease in individual patients. RF is highly associated with rheumatoid arthritis, as high as 90% of patients with RA have RF titre of more than 40 IU/ml

References : 1. Waaler, e., Acta Path. Microb. Scan., 17 (1940) 2. Bandilla, K.I. and Mc Duffie, F.C., Arthritis Rheum., 12, 74 (1969).