Clinical Chemistry Reagents
and supplies

iagnosticum Inc.

Established 1989

Enzymes

Immunturbidimetrics

Metabolites

Proteins and ions

Specials

Universal Calibrators and Controls

Innovative Clinical Chemistry Solutions


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Established 1989

Diagnosticum Inc.
Established 1989

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Diagnosticum Inc.

Established 1989

About Diagnosticum Inc.

The Company

Diagnosticum Inc. is the largest Hungarian independent distributor of in-vitro diagnostic devices controlling about 30% of the Hungarian clinical IVD device market, headquartered in Budapest, with annual sales of HUF 5.26bn (EUR 18m) in 2012, and with workforce of 71.

Its activities include:

- Supplying the product portfolio of renowned international IVD brands to clinical laboratories and to a small extent also to research, industrial and veterinary labs, as well as point-of-care testing in Hungary;
- Warehousing and logistics services related to the above supply;
- Providing complete logistic services to the Hódmezővásárhely hospital;
- Providing training, 24/7 technical support and maintenance for supplied equipment. Certified Siemens Service Partner;
- Selling its own reagents in Hungary, Romania and in Asian and African developing markets;
- Research and development of diagnostic products in its in-house laboratory.

History

Diagnosticum was established in 1989 for the production and distribution of clinical diagnostics. In the first years of its operation Diagnosticum marketed OEM reagents, later had successfully broadened its product range and become a complete clinical diagnostic solution provider as the distributor of renowned international IVD brands. It's quick and reliable service, novelty in the Hungarian IVD market at that time enabled the Company to gain pace on the rapidly developing market. During its 25 years of operation the Company has established strong partnership with both clients and suppliers, and today is one of the biggest companies in the Hungarian IVD supply market, the largest independent distributor, with an estimated 30% share of the clinical laboratories' IVD supply.

Milestones

1989 Establishing Diagnosticum Kft., the legal predecessor, distributing imported OEM reagents in Hungary
1992 Launch of renowned international diagnostic products: bioMérieux, Behring, Becton Dickinson, Serono and CML
1993 Establishing Romanian subsidiary, CLINI-LAB srl.
1996 Starting the export of chemistry reagents manufactured in Hungary
2001 ISO 9001:2000 quality management system implemented
2007 Acquisition of Life Science Kft., a Hungarian Thermo Science distributor company
2011 Becoming Certified Siemens Service Partner
2011 ISO 14001:2004 environmental management system implemented

Key values

- Is the largest independent clinical IVD distributor in Hungary with an estimated 30% market share
- Has outstanding relationship with clients and decision makers
- Has a strong technical support team of 15, covering service and training, is a certified Siemens Service Partner

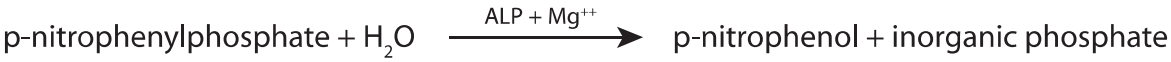
ALKALINE PHOSPHATASE (ALP) STABLE LIQUID REAGENT

Cat. No.:	210223	210203	210264
	125 ml	10x25 ml	600 ml
	(1 x 100 ml+1 x 25 ml)	(10 x 20 ml + 10 x 5 ml)	(1 x 480 ml + 1 x 120ml)

Reagent kit for the quantitative determination of alkaline phosphatase activity in serum, DGKC method.

Principle

The enzyme catalyses the hydrolysis of monophosphates at an alkaline pH. In the past various substrates were used (including glycerophosphate, phenylphosphate), according to the recommendation by DGKC which is a kinetic method. The Alkaline phosphatase present in the sample catalyses the hydrolysis of p-Nitrophenylphosphate (pNPP) during which p-Nitrophenol and Phosphate are released. Mg^{++} ions enhance activity. The increase in absorbance at 405 nm correlates with the activity of serum alkaline phosphatase. Kinetic determination of the alkaline phosphatase based upon DGKC and SCE Recommendation (p-NPP).



Sample

Serum free of haemolysis.

Assay conditions

Wavelength: 405-410 nm
Temperature: 37 °C
Cuvette: 1 cm light path
Read against: distilled water or air
Method: kinetic (increasing)

Linearity

The method is linear up to 1800 U/l (30,0 µkat/l).

ALPHA-HBDH
STABLE LIQUID REAGENT

Cat. No.: 915963 — 100 ml (1 x 50 ml + 1 x 50 ml)
915964 — 600 ml (1 x 300 ml + 1 x 300 ml)
915965 — 10 x 20 ml (10 x 10 ml + 10 x 10 ml)

Reagent kit for determination of α-hydroxybutyrate dehydrogenase (α-HBDH) activity in serum.
DGKC method.

Principle

LDH-1 isoenzyme in the presence of NADH and H^+ converts α-oxobutyrate substrate into α-hydroxybutyrate while NAD^+ is formed. The rate of decrease in absorbance is proportional to the α-hydroxybutyrate dehydrogenase activity.

$$\text{α-oxobutyrate} + \text{NADH} + H^+ \xrightarrow{\text{α –HBDH}} \text{α-hydroxybutyrate} + NAD^+$$

Sample

Serum free of haemolysis.

Assay conditions

Wavelength: 340 (334-365) nm
Temperature: 37 °C
Cuvette: 1 cm pathway
Read against: distilled water or air
Method: kinetic (decreasing)

Linearity

The test is linear up to 1200 U/l (20,0 µkat/l) α-HBDH activity.

ALPHA-AMYLASE (EPS) STABLE LIQUID REAGENT

Cat. No.: 417463 120 ml (1 x 100ml + 1 x 20ml)
417464 600 ml (1 x 500 ml + 100ml)
417465 10 x 24 ml (1 x 20 ml + 1 x 4 ml)

Reagent kit for determination of the α-amylase activity in serum or urine based upon the IFCC EPS method.

Principle

The procedure utilizes a different auxiliary enzyme α-glucosidase, which cleaves all primary degradation products and leads to a 100% chromophore release from the substrate.

5-Ethylidene-G7-pNP+5H_2O $\xrightarrow{\text{α-amilaze}}$ 2Ethylidene-G5+2 G2-pNP+
2 Ethylidene-G4+2 G3-pNP+Ethylidene-G3+G4-pNP

2G2-pNP+2G3-pNP+G4-pNP+14H_2O $\xrightarrow{\text{α–glucosidase}}$ 5-pNP+14G

G=glucose, pNP=p-nitrophenol

Sample

Serum free of haemolysis and urine.

Assay conditions

Wavelength: 405 (400-420) nm
Temperature: 37 °C
Cuvette: 1 cm light path
Read against: distilled water
Method: kinetic (increasing)

Linearity

The test is linear up to 1800 U/l (30,0 µkat/l).

A-AMYLASE (GALG2-CNP) STABLE LIQUID REAGENT

Cat. No.: 815863 120 ml
815865 600 ml
815864 20 x 20 ml

Reagent kit for the quantitative determination of α-amylase activity in serum and urine using GalG2-CNP substrate.

Principle

A-amylase hydrolyzes 1,4-glucosidic linkages in starch and other polysaccharides to form short chain oligosaccharides. The substrate used in reagent is 2-chloro-4-nitrohenyl-a-galactosylmaltoside (GALG2-CNP). The rate at which p-nitrophenol is formed is directly proportional to the amylase activity in the sample. The resulting increase in absorbance can be measured spectrophotometrically at 405 nm.

Sample

Serum free of haemolysis, duodenum fluid and urine.

Assay conditions

Wavelength: 405 nm
Temperature: 37 °C
Cuvette: 1 cm pathway
Method: kinetic (increasing)

Linearity

The test is linear up to 3000 U/l (50 µkat/l).

ALT (GPT)
STABLE LIQUID REAGENT

Cat. No.: 316363 — 120 ml (1 x 80 ml + 1 x 40 ml)
316364 — 600 ml (1 x 400 ml+200 ml)
316365 — 10x30 ml (1 x 20 ml + 10 x 10 ml)

Reagent kit for the determination of the alanine aminotransferase (ALT) activity in serum based upon IFCC recommendations.

Principle

ALT catalyses the transformation of L-Alanin and 2-Oxoglutarate at optimal pH. The Pyruvate released in the reaction is transformed by Lactate dehydrogenase (LDH) in the presence of NADH /NAD^+ coenzyme to L-lactate, while the NADH/NAD^+ oxidoreductive process shows a decrease in absorbance at 340 nm. The change in absorbance correlates with serum ALT activity.

L-Alanine + α-Ketoglutarate $\xrightarrow{ALT}$ Pyruvate + L-Glutamate

Pyruvate + NADH $\xrightarrow{LDH}$ L-Lactate + NAD^+

Sample

Serum free of haemolysis. Haemolysis, lipaemia interfere with the test.

Assay conditions

Wavelength: 340 (334-365) nm
Temperature: 37 °C
Cuvette: 1 cm light path
Read against: distilled water
Method: kinetic (decreasing)

Linearity

The test is linear up to 450 U/l (7,50 µkat/l) GPT activity.

AST (GOT)
STABLE LIQUID REAGENT

Cat. No.: 216265 — 10 x 30 ml (10 x 20 ml + 10 x 10 ml)
216263 — 120 ml (1 x 80 ml+ 1 x 40 ml)
216264 — 600 ml (1 x 400 ml+1 x 200 ml)

Reagent kit for the determination of the aspartate aminotransferase (AST) activity in serum based upon IFCC recommendations.

Principle

Two substrates participate in the reaction catalyzed by AST, L-aspartate and Oxoglutarate. With the help of NADH coenzyme, Malate dehydrogenase (MDH) contained in the reagent catalyses the transformation of Oxalacetate released in the first reaction. The oxido-reductive process of NADH/NAD^+ is indicated by a decrease in absorbance at 340 nm. The Lactate dehydrogenase (LDH) in the medium counteracts the disturbing effect of Pyruvate contained in the sample.

L-Aspartate + α-Ketoglutarate $\xrightarrow{AST}$ L-glutamate + Oxalacetate

Oxalacetate + NADH $\xrightarrow{MDH}$ L-Malate + NAD^+

Sample

Serum free of haemolysis.

Assay conditions

Wavelength: 340 (334-365) nm
Temperature: 37 °C
Cuvette: 1 cm pathway
Method: kinetic (decreasing)

Linearity

The test is linear up to 260 U/l (4,33 µkat/l) GOT activity.

CHOLINESTERASE STABLE LIQUID REAGENT

Cat. No.:	42321	42311
	5 x 25ml	600 ml
	(5 x 20ml + 5 x 5ml)	(4 x 10 ml + 1 x 10 ml)

Diagnostic reagent for quantitative in vitro determination of cholinesterase (ChE) in serum or plasma on photometric systems.

Principle

Cholinesterase hydrolyses butyrylthiocholine under release of butyric acid and thiocholine. Thiocholine reduces yellow potassium hexacyanoferrate (III) to colorless potassium hexacyanoferrate (II). The decrease of absorbance is measured at 405 nm.

$$\text{Butyrylthiocholine} + H_2O \xrightarrow{\text{Cholinesterase}} \text{Thiocholine} + \text{Butyrate}$$

$$2\ \text{Thiocholine} + 2[Fe(CN)_6]^{3-} + H_2O \longrightarrow \text{Choline} + 2[Fe(CN)_6]^{4-} + H_2O$$

Sample

Serum, heparin or EDTA plasma.

Assay conditions

Wavelength: 405 nm
Temperature: 37 °C
Cuvette: 1 cm light path
Read against: reagent blank
Method: kinetic (decreasing)

Linearity

The test has been developed to determine ChE activities up to 20000 U/L.

CREATINE KINASE (CK-NAC) STABLE LIQUID REAGENT

Cat. No.: 916963 125 ml (1 x 100 ml + 1 x 25ml)
916964 600 ml (1 x 480 ml +1 x 125 ml)
916965 10 x 25 ml (10 x 20 ml + 10 x 5 ml)

Reagent kit for determination of creatine kinase activity in serum based upon IFCC and DGKC recommendations.

Principle

$$\text{Creatine-phosphate} + \text{ADP} \xrightarrow{\text{CK}} \text{Creatine} + \text{ATP}$$

$$\text{ATP} + \text{D-Glucose} \xrightarrow{\text{HK}} \text{G-6-P} + \text{ADP}$$

$$\text{G-6-P} + \text{NADP}^+ \xrightarrow{\text{G-6-PDH}} \text{Gluconate-6-phosphate} + \text{NADPH} + \text{H}^+$$

CK= Creatine kinase
HK= Hexokinase
G-6-P= Glucose-6-phosphate
G-6-PDH = Glucose-6-phosphate-dehydrogenase

Sample

Serum free of haemolysis.

Assay conditions

Wavelength: 340 nm
Temperature: 37 °C
Cuvette: 1 cm pathway
Read against: distilled water
Method: kinetic (increasing)

Linearity

The test is linear up to 1032 U/l (17,2 µkat/l) creatine-kinase activity.

CREATINE KINASE MB (CK-MB) STABLE LIQUID REAGENT

Cat. No.:	812863	812865
	125 ml	10 x 25ml
	(1 x 100 ml + 1 x 25 ml)	(10 x 20 ml + 10 x 5 ml)

Reagent kit for the determination of creatine kinase-MB activity based upon DGKC and IFCC recommendations.

Principle

This procedure involves measurement of CK activity in the presence of an antibody to CKM monomer. This antibody completely inhibits the activity, of CK-MM and half of the activity of CK-MB while not affecting the B subunit activity of CK-MB and CK-BB. Then we use the CK method to quantitatively determine CK-B activity. The CK-MB activity is obtained by multiplying the CK-B activity by two. The sample is incubated in the CK-MB reagent which includes the anti-CK-M antibody. The activity of the noninhibited CK-B is then determined using the following series of reaction:

$$\text{Creatine phosphate} + \text{ADP} \xrightarrow{\text{CK}} \text{Creatine} + \text{ATP}$$

$$\text{ATP} + \text{glucose} \xrightarrow{\text{HK}} \text{Glucose-6-Phosphate} + \text{ADP}$$

$$\text{Glucose-6-Phosphate} + \text{NADP}^{+} \xrightarrow{\text{G-6-PDH}} \text{Gluconate-6-Phosphate} + \text{NADPH+H}^{+}$$

G-6-PDH=Glucose-6-Phosphate Dehydrogenase, CK=Creatine kinase, HK=Hexokinase

Sample

Serum free of haemolysis.

Assay conditions

Wavelength: 334-340 nm
Temperature: 37 °C
Cuvette: 1 cm light path
Read against: reagent blank
Method: kinetic (increasing)

Linearity

If the total CK activity is higher than 1200 U/l (20µkat/l) dilute the sample in ratio of 1:10 with physiological saline solution before assay of CK-MB.

GAMMA-GT
STABLE LIQUID REAGENT

Cat. No.: 217263 125 ml (1 x 100 ml + 1 x 25 ml)
217264 600 ml (1 x 480 ml + 1 x 125 ml)
217265 10 x 25 ml (10 x 20 ml + 10 x 5 ml)

Reagent kit for determination of γ-glutamyl-transferase (γ-GT) activity in serum.
Modified kinetic colorimetric method of Szász.

Principle

γ-GT catalyzes the transfer of the g-glutamyl group from L- γ-glutamyl-3-carboxy-4-nitroanilide substrate to glycylglycine. The amount of released p-nitroaniline is proportional to the γ-GT activity of serum.

L- γ-glutamyl-3-carboxy-4-nitroanilide+glycylglycyne $\xrightarrow{\gamma\text{–GT}}$
L- γ-glutamyl-glycylglycyne+3-carboxy-4-nitroaniline

Sample

Serum free of haemolysis.

Assay conditions

Wavelength: 405 nm
Temperature: 37 °C
Cuvette: 1 cm pathway
Read against: distilled water
Method: kinetic (increasing)

Linearity

The test is linear up to 700 U/l (11,67 µkat/l).

LDH-L
STABLE LIQUID REAGENT

Cat. No.: 517563 — 100 ml (1 x 50 ml + 1 x 50 ml)
51756 — 600 ml (1 x 300 ml + 1 x 300 ml)
517565 — 10 x 20 ml (10 x 10 ml + 10 x 10 ml)

Reagent kit for the determination of lactate dehydrogenase activity in serum.

Principle

$$\text{L-Lactate} + NAD^+ \xrightarrow{\text{LDH}} \text{Pyruvate} + NADH + H^+$$

LDH = Lactate dehydrogenase

Sample

Serum free of haemolysis.

Assay conditions

Wavelength: 340 (334-365) nm
Temperature: 37 °C
Cuvette: 1 cm light path
Read against: reagent blank
Method: kinetic (increasing)

Linearity

The test is linear up to 1000 U/l (16,67 µkat/l).

LDH-P
STABLE LIQUID REAGENT

Cat. No.: 416463 — 125 ml (1 x 50 ml + 1 x 50 ml)
416464 — 600 ml (1 x 300 ml + 1 x 300 ml)
416465 — 10 x 20 ml (10 x 10 ml + 10 x 10 ml)

Kinetic determination of the lactate dehydrogenase activity in serum based upon DGKC recommendations.

Principle

LDH catalyses the transformation of Pyruvate to Lactate in pH=7.5 Tris buffer with NaCl in the presence of NADH coenzyme. The transformation of NADH to NAD^+ is accompanied by a decrease in absorbance at 340 nm. The change in absorbance correlates with the LDH activity in the serum.

$$\text{Pyruvate} + \text{NADH} + H^+ \xrightarrow{\text{LDH}} \text{Lactate} + NAD^+$$

Sample

Serum free of haemolysis.

Assay conditions

Wavelength: 340 (334-365) nm
Temperature: 37 °C
Cuvette: 1 cm pathway
Read against: distilled water
Method: kinetic (decreasing)

Linearity

The test is linear up to 1200 U/l (20µkat/l) LDH-P activity.

COMPLEMENT C3
STABLE LIQUID REAGENT

Cat. No.:	314030	314032
	4 x 25 ml	10 x 25 ml
	(4 x 20 ml + 4 x 5ml)	(10 x 20 ml + 10 x 5 ml)

Reagent kit for immuno-turbidimetric determination of Complement C3 in human serum.

Principle

Measurement of antigen/antibody reaction by the endpoint method.

Sample

Fresh serum

Assay conditions

Wavelength: 340 nm
Temperature: 37 °C
Cuvette: 1 cm light path
Read against: sample blank
Method: endpoint (increasing)

Linearity

The test is linear up to 400 mg/dl (4 g/l).

COMPLEMENT C4
STABLE LIQUID REAGENT

Cat. No.:	314040	314042
	4 x 25 ml	10 x 25 ml
	(4 x 20 ml + 4 x 5 ml)	(10 x 20 ml+ 10 x 5ml)

Reagent kit for immuno-turbidimetric determination of Complement C4 in human serum.

Principle

Measurement of antigen/antibody reaction by the endpoint method.

Sample

Fresh serum

Assay conditions

Wavelength: 340 nm
Temperature: 37 °C
Cuvette: 1 cm light path
Read against: sample blank
Method: endpoint (increasing)

Linearity

The test is linear up to 120 mg/dl (1,2 g/l)

C-REACTIVE PROTEIN STABLE LIQUID REAGENT

Cat. No.:	314050	314052
	4 x 25 ml	10 x 25 ml
	(4 x 20 ml + 4 x 5ml)	(10 x 20 ml+ 10 x 5 ml)

Reagent kit for immuno-turbidimetric determination of C-reactive protein in human serum.

Principle

Measurement of antigen/antibody reaction by the endpoint method.

Sample

Fresh serum

Assay conditions

Wavelength: 340 nm
Temperature: 37 °C
Cuvette: 1 cm light path
Read against: sample blank
Method: endpoint (increasing)

Linearity

The test is linear up to 20 mg/dl (200 mg/l)

HAEMOGLOBIN A1c STABLE LIQUID REAGENT

Cat. No.: Kit: 318001 40 ml
Calibrator: 318Cal (4 x 0,5ml)
Control: 318Con (2 x 0,5 ml + 2 x 0,5 ml)

Reagent kit for quantitative determination of Haemoglobin A1c (HbA1c) in human blood.

Principle

This method utilizes the interaction of antigen and antibody to directly determine the HbA1c in whole blood. Total hemoglobin and HbA1c have the same unspecific absorbtion rate to latex particles. When mouse antihuman HbA1c monoclonal antibody is added (R2), latex-HbA1c-mouse anti human HbA1c antibody complex is formed. Agglutination is formed when goat anti-mouse IgG polyclonal antibody interacts with the monoclonal antibody. The amount of agglutination is proportional to the amount of HbA1c absorbed on to the surface of latex particles. The amount of agglutination is measured as absorbance. The HbA1c value is obtained from a calibration curve.

Sample

EDTA plasma

Assay conditions

Wavelength: 660 nm
Temperature: 37 °C
Cuvette: 1 cm light path
Read against: distilled water
Method: endpoint (increasing)

Linearity

The Haemoglobin A1c assay range is 2.0%-16.0%.

Calibrator

HbA1c Calibrator

Control

HbA1c Control

IMMUNOGLOBULIN A STABLE LIQUID REAGENT

Cat. No.:	314060	314062
	4 x 25 ml	10 x 25 ml
	(4 x 20 ml + 4 x 5 ml)	(10 x 20 ml + 10 x 5ml)

Reagent kit for immuno-turbidimetric determination of Immunoglobulin A (IgA) in human serum.

Principle

Measurement of antigen/antibody reaction by the endpoint method.

Sample

Fresh serum

Assay conditions

Wavelength: 340 nm
Temperature: 37 °C
Cuvette: 1 cm light path
Read against: sample blank
Method: endpoint (increasing)

Linearity

The test is linear up to 700 mg/dl (7g/l)

IMMUNOGLOBULIN G STABLE LIQUID REAGENT

Cat. No.:	314070	314072
	4 x 25 ml	10 x 25 ml
	(4 x 20 ml + 4 x 5 ml)	(10 x 20 ml+ 10 x 5 ml)

Reagent kit for immuno-turbidimetric determination of Immunoglobulin G (IgG) in human serum.

Principle

Measurement of antigen/antibody reaction by the endpoint method.

Sample

Fresh serum

Assay conditions

Wavelength: 340 nm
Temperature: 37 °C
Cuvette: 1 cm light path
Read against: sample blank
Method: endpoint (increasing)

Linearity

The test is linear up to 3000 mg/dl (30 g/l)

IMMUNOGLOBULIN M STABLE LIQUID REAGENT

Cat. No.:	31480	31482
	4 x 25 ml	10 x 25 ml
	(4 x 20 ml + 4 x 5 ml)	(10 x 20 ml + 10 x 5ml)

Reagent kit for immuno-turbidimetric determination of Immunoglobulin M (IgM) in human serum.

Principle

Measurement of antigen/antibody reaction by the endpoint method.

Sample

Fresh serum

Assay conditions

Wavelength: 340 nm
Temperature: 37 °C
Cuvette: 1 cm light path
Read against: sample blank
Method: endpoint (increasing)

Linearity

The test is linear up to 500 mg/dl (5 g/l)

TRANSFERRIN
STABLE LIQUID REAGENT

Cat. No.: 314090 — 4 x 25 ml (4 x 20 ml + 4 x 5 ml)
314092 — 10 x 25 ml (10 x 20 ml+ 10 x 5ml)

Reagent kit for immuno-turbidimetric determination of Transferrin (TRF) in human serum.

Principle

Measurement of antigen/antibody reaction by the endpoint method.

Sample

Fresh serum

Assay conditions

Wavelength: 340 nm
Temperature: 37 °C
Cuvette: 1 cm light path
Read against: sample blank
Method: endpoint (increasing)

Linearity

The test is linear up to 500 mg/dl (5 g/l).

BILIRUBIN DIRECT STABLE LIQUID REAGENT

Cat. No.: 74274D
2 x 150 ml
(2 x 125 ml + 1 x 50 ml)

Reagent kit for the quantitative determination of direct bilirubin in serum.
Diazo-sulfanilic acid method.

Principle

Sulfanilic acid reacts with sodium nitrite to form diazotized sulfanilic acid. In the presence of dimethylsulfoxide, total bilirubin reacts with diazotized sulfanilic acid to form azobilirubin. In the absence of dimethylsulfoxide, only the direct bilirubin reacts to give azobilirubin.

Sample

Serum free of haemolysis.

Assay conditions

Wavelength: 555 nm (540-560 nm)
Secondary wavelength: 600 nm
Temperature: 37 °C
Cuvette: 1 cm light path
Read against: reagent blank
Method: endpoint

Linearity

The test is linear up to 100 µmol/l (5,88 mg/dl) bilirubin concentration (37°C).

BILIRUBIN DIRECT (DPD) STABLE LIQUID REAGENT

Cat. No.: 74275D
1 x 125 ml
(1 x 100 ml + 1 x 25 ml)

Reagent kit for the quantitative determination of direct bilirubin in serum.
DPD method.

Principle

The stabilized diazonium salt 3,5-dicholorophenyl-diazonium-tetrafluoroborate (DPD) couples directly with direct bilirubin in an acid medium to yield the corresponding azobilirubin. The absorbance of this dye at 546 nm is directly proportional to the direct bilirubin concentration in the sample.

Sample

Serum free of haemolysis or EDTA, citrate plasma. Heparin plasma not recommended.

Assay conditions

Wavelength: 550 nm (540-560 nm)
Temperature: 37 °C
Cuvette: 1 cm light path
Read against: reagent blank
Method: endpoint

Linearity

The test is linear up to 150 µmol/l (8,77 mg/dl).

BILIRUBIN TOTAL
STABLE LIQUID REAGENT

Cat. No.: 74274T
2 x 150 ml
(2 x 125 ml + 1 x 50 ml)

Reagent kit for the quantitative determination of total bilirubin in serum.
Diazo-sulfanilic acid method.

Principle

Sulfanilic acid reacts with sodium nitrite to form diazotized sulfanilic acid. In the presence of dimethylsulfoxide, total bilirubin reacts with diazotized sulfanilic acid to form azobilirubin. In the absence of dimethylsulfoxide, only the direct bilirubin reacts to give azobilirubin. The absorbance measured at 555 nm is proportional to the bilirubin concentration.

Sample

Serum free of haemolysis.

Assay conditions

Wavelength: 555 nm (540-560 nm)
Secondary wavelength: 600 nm
Temperature: 37 °C
Cuvette: 1 cm light path
Read against: reagent blank
Method: endpoint

Linearity

The test is linear up to 340 µmol/l (20,0 mg/dl).

BILIRUBIN TOTAL (DPD) STABLE LIQUID REAGENT

Cat. No.: 74275T
1 x 125 ml
(1 x 100 ml + 1 x 25 ml)

Reagent kit for the quantitative determination of total bilirubin in serum.
DPD method.

Principle

Indirect bilirubin is liberated by the detergent. Total bilirubin is coupled with the 3,5-dichlorophenyl-diazonium-tetrafluoroborate (DPD) to yield the corresponding azobilirubin. The absorbance of this dye at 546 nm is directly proportional to the total bilirubin concentration in the sample.

Sample

Serum free of haemolysis or EDTA, citrate plasma.

Assay conditions

Wavelength: 550 nm (540-560 nm)
Temperature: 37 °C
Cuvette: 1 cm light path
Read against: reagent blank
Method: endpoint

Linearity

The test is linear up to 670 µmol/l (39 mg/dl).

BILIRUBIN TOTAL AND DIRECT STABLE LIQUID REAGENT

Cat. No.: 712743
2 x 150 ml
(2 x 125 ml + 1 x 50 ml)

Reagent kit for the quantitative determination of total and direct bilirubin in serum.
Diazo-sulfanilic acid method.

Principle

Sulfanic acid reacts with sodium nitrite to form diazotized sulfanilic acid. In the presence of dimethylsulfoxide, total bilirubin reacts with diazotized sulfanilic acid to form azobilirubin. In the absence of dimethylsulfoxide, only the direct bilirubin reacts to give azobilirubin.

Sample

Serum free of haemolysis.

Assay conditions

Wavelength: 555 nm (540-560 nm)
Secondary wavelength: 600 nm
Temperature: 37 °C
Cuvette: 1 cm light path
Read against: reagent blank
Method: endpoint

Linearity

The test is linear up to 340 µmol/l (20,0 mg/dl) bilirubin concentration.

CHOLESTEROL ADPS STABLE LIQUID REAGENT

Cat. No.: 116063 — 120 ml (1 x 80 ml + 1 x 40 ml)
116064 — 600 ml (1 x 400 ml + 1 x 200 ml)
116065 — 10x30 ml (10 x 20 ml + 10 x 10 ml)

Reagent kit for the determination of total cholesterol concentration in serum.
Enzymatic colorimetric method (ADPS).

Principle

$$\text{Cholesterol ester} + H_2O \xrightarrow{\text{Cholesterol–esterase}} \text{Cholesterol} + \text{Fatty acids}$$

$$\text{Cholesterol} + O_2 \xrightarrow{\text{Cholesterol–oxidase}} \text{4-Cholesten-3-one} + H_2O_2$$

$$2H_2O_2 + \text{ADPS} + \text{4-Aminoantipyrine} \xrightarrow{\text{peroxidase}} \text{purple quinone} + 4H_2O$$

Sample

Serum free of haemolysis.

Assay conditions

Wavelength: 546 (520-570) nm
Temperature: 37 °C
Cuvette: 1 cm light path
Read against: reagent blank
Method: endpoint (increasing)

Linearity

The test is linear up to 15.5 mmol/l (600 mg/dl).

CHOLESTEROL PAP STABLE LIQUID REAGENT

Cat. No.: 117063 120 ml
117064 600 ml
117065 20 x 20 ml

Reagent kit for the quantitative determination of total cholesterol concentration in serum. Enzymatic colorimetric method (PAP).

Principle

The Cholesterol esters of the sample are hydrolysed by Cholesterol ester hydrolase (ChEH). 4-Cholesten-3-one and H_2O_2 are then formed from the released free Cholesterol by Cholesterol oxidase (ChOD). A measurable Red quinonimine derivative which absorbance light at 505 nm is formed from Hydrogenperoxide (H_2O_2) and 4-Aminoantipyrine in the presence of Phenol and peroxidase (POD).

$$\text{Cholesterol ester} + H_2O \xrightarrow{\text{Cholesterol–esterase}} \text{Cholesterol} + \text{Fatty acids}$$

$$\text{Cholesterol} + O_2 \xrightarrow{\text{Cholesterol–oxidase}} \text{4-Cholesten-3-one} + H_2O_2$$

$$2H_2O_2 + \text{Phenol} + \text{4-Aminoantipyrine} \xrightarrow{\text{peroxidase}} \text{Red quinone} + 4H_2O$$

Sample

Serum free of haemolysis.

Assay conditions

Wavelength: 505 (480-520) nm
Secondary wavelength: 600 nm
Temperature: 37 °C
Cuvette: 1 cm light path
Read against: reagent blank
Method: endpoint (increasing)

Linearity

Up to 20.0 mmol/l (773 mg/dl).

CREATININE
STABLE LIQUID REAGENT

Cat. No.: 711753 1x500 ml (1x250 ml+1x250ml)
711754 10x500 ml (10x250ml+10x250ml)
711755 10x40 ml (10x20 ml+10x20 ml)

Reagent kit for the determination of creatinine concentration in serum and urine.
A colorimetric, alkaline picrate method (Jaffé).

Principle

Creatinine forms with alkaline picrate (in ratio of 1:1) a colored creatinine picrate complex containing ionic bounds. The rate of formation of the colored complex is proportional to the creatinine concentration.

Sample

Serum and 12 h or 24 h collected urine, resp. Urine must be diluted in ratio of 1:100 with distilled water.

Assay conditions

Wavelength: 492 (480-520) nm
Temperature: 37 °C
Cuvette: 1 cm light path
Method: kinetic (increasing)

Linearity

Relationship of absorbance vs concentration is linear up to 1326 µmol/l (15 mg/dl).

CREATININE ENZYMATIC STABLE LIQUID REAGENT

Cat. No.:	116163	116164	116165
	120 ml	500 ml	10 x 20 ml
	(1 x 90 ml + 1 x 30 ml)	(1 x 375 ml +1 x 125 ml)	(10 x 15 ml + 10 x 5 ml)

Reagent kit for determination of creatinine concentration in serum and urine.
Colorimetric, enzymatic test.

Principle

Creatinine is released during metabolism of creatine phosphate, and is excreted by the kidneys. Creatinine concentration in blood and in urine represents a primary indicator for renal function, especially that for glomerular filtration. Increased levels are associated with acute renal impairment, chronic nephritis, obstruction of the urinary tract, strong physical overloading. Low creatinine concentrations are found in conditions with juvenile diabetes mellitus, pregnancy and muscular dystrophy.

$$\text{Creatinine} + H_2O \xrightarrow{\text{Creatininase}} \text{Creatine}$$

$$\text{Creatine} + H_2O \xrightarrow{\text{Creatinase}} \text{Sarcosine} + \text{Urea}$$

$$\text{Sarcosine} + O_2 \xrightarrow{\text{Sarconise oxidase}} \text{Glycine} + HCHO + H_2O_2$$

$$H_2O_2 + \text{TOOS} + 4\ \text{Aminoantipyrine} \xrightarrow{\text{Peroxidase}} \text{Red quinone} + 4H_2O$$

TOOS = N-Ethyl-N-(2-Hydroxy-3-Sulfopropyl)m-Toluidine

Sample

Serum free of haemolysis. Urine diluted in ratio of 1:100 with distilled water.

Assay conditions

Wavelength: 555 (540-570) nm
Temperature: 37 °C
Cuvette: 1 cm light path
Read against: reagent blank
Method: endpoint (increasing)

Linearity

The test is linear up to 1770 µmol/l (20 mg/dl).

GLUCOSE GOD/PAP STABLE LIQUID REAGENT

Cat. No.: 816863 120 ml
816864 600 ml
816865 20 x 20 ml

Reagent kit for the quantitative determination of glucose concentration in serum and liquor. Enzymatic colorimetric method (GOD/POD/PAP).

Principle

Glucose oxidase (GOD) converts the sample Glucose into gluconate. The Hydrogenperoxide (H_2O_2) produced in the reaction is degraded by peroxidase (POD) and gives a colored product Phenol and 4-Aminoantipyrine which is measurable using Trinder indicator reaction at 505 nm. The increase in absorbance correlates with the glucose concentration of the sample.

$$\text{Glucose} + O_2 \xrightarrow{\text{peroxidase}} \text{Gluconic acid} + H_2O_2$$

$$2H_2O_2 + \text{Phenol} + \text{4-Aminoantipyrine} \xrightarrow{\text{POD}} \text{Red quinone} + 4H_2O$$

Sample

Serum free of haemolysis.
Cerebrospinal fluid.

Assay conditions

Wavelength: 505 (492-520) nm
Temperature: 37 °C
Cuvette: 1 cm light path
Method: endpoint (increasing)
Read against: reagent blank

Linearity

The test is linear up to 40 mmol/l (720 mg/dl) glucose concentration.

GLUCOSE HK
STABLE LIQUID REAGENT

Cat. No.:	317363	317364	317365
	125 ml	600 ml	10 x 25 ml
	(1 x 100 ml + 1 x 30 ml)	(1 x 480 ml + 1 x 120 ml)	(10 x 20 ml + 10 x 5 ml)

Reagent kit for the quantitative determination of glucose concentration in serum, liquor and urine. Enzymatic test.

Principle

Determination of glucose concentration is important in the diagnosis and treatment of disorders of carbohydrate metabolism. Values higher or lower than the reference are of diagnostic significance. The levels are increased in diabetes mellitus, hyperthyroidism and in the hyperactivity of the pituitary gland. Decreased levels are observed in cases of overproduction of insulin by the pancreas, with tumors of the pancreas, as well as with hypofunction of the organs involved in glucose synthesis and carbohydrate metabolism.

$$\text{Glucose} + \text{ATP} \xrightarrow{\text{HK}} \text{G-6-P} + \text{ADP}$$

$$\text{G-6-P} + \text{NAD} \xrightarrow{\text{G–6–PDH}} \text{6-phosphogluconate} + \text{NADH} + \text{H}^+$$

HK = Hexokinase
G-6-P = Glucose-6-phosphate
G-6-PDH = Glucose-6-phosphate dehydrogenase

Sample

Serum free of haemolysis, urine, cerebrospinal fluid.

Assay conditions

Wavelength: 340 (334-365) nm
Temperature: 37 °C
Cuvette: 1 cm light path
Read against: reagent blank
Method: endpoint (increasing)

Linearity

The test is linear up to 33.33 mmol/l (600 mg/dl).

HDL CHOLESTEROL (DIRECT) STABLE LIQUID REAGENT

Cat. No.:	617663	617664
	60 ml	500 ml
	(1 x 45 ml + 1 x 15 ml)	(1 x 375 ml +1 x 125 ml)

A direct immunoinhibition method for the quantitative determination of high density lipoprotein cholesterol (HDL-C) in serum.

Principle

Anti human β-lipoprotein antibody in Reagent 1 binds to all lipoproteins of the serum (LDL, VLDL, and chylomicrons) other than HDL. The antigen-antibody complexes formed block enzyme reactions started when Reagent 2 is added. Cholesterol esterase (CHE) and cholesterol oxidase (CO) in Reagent 2 react only with HDL-C. Hydrogen peroxide produced by the enzyme reactions with HDL-C yields a blue color complex upon oxidative condensation of N-ethyl-N-(2-hydroxy-3-sulfopropyl)-3,5-dimethoxy-4-fluoroaniline, sodium salt (F-DAOS) and 4-aminoantipyrine (4AA) in the presence of peroxidase (POD). By measuring absorbance of the blue color complex produced, at the near optimum wavelength of 593 nm, the HDL-C concentration in the sample can be calculated when compared with the absorbance of the HDL-C Calibrator.

$$\text{LDL, VLDL and chylomicrons} \xrightarrow{\text{anti-human-B-lipoprotein-antibody}} \text{Antigen-antibody complex}$$

$$\text{HDL-cholesterol} + H_2O + O_2 \xrightarrow{\text{CHE-and-CO}} \Delta 4\text{-cholestenone} + \text{fatty acids} + H_2O_2$$

$$\text{4-AA} + \text{F-DAOS} + H_2O_2 \xrightarrow{\text{POD}} \text{blue color complex} + 2H_2O$$

Sample

Use serum as a specimen. It is recommended to measure HDL-C immediately after collection.

Assay conditions

Main wavelength: 600 nm
Sub wavelength: 700 nm
Temperature: 37 °C
Cuvette: 1 cm light path
Method: endpoint (increasing)
Read against: reagent blank

Linearity

The test is linear up to 7,15 mmol/l (275 mg/dl).

TRIGLYCERIDES ADPS STABLE LIQUID REAGENT

Cat. No.:	516563	516564	516565
	120 ml	600 ml	10 x 30 ml
	(1 x 80 ml + 1 x 40 ml)	(1 x 400 ml +1 x 200 ml)	(10 x 20 ml + 10 x 10 ml)

Reagent kit for the quantitative determination of triglycerides concentration in serum. Enzymatic colorimetric method (ADPS).

Principle

Triglycerides are esters formed from Glycerol and Fatty acids, the latter being synthesized in the liver or extracted from blood. Determining the level of Triglyceride concentration is part of the evaluation of lipid metabolism and plays a major role in identification of the various hyperlipoproteinemia. The level is increased in certain liver and renal diseases in diabetes mellitus and coronary artery disease.

$$\text{Triglycerides} + H_2O \xrightarrow{\text{Lipoprotein–lipase}} \text{Glycerol} + \text{Fatty Acid}$$

$$\text{Glycerol} + \text{ATP} \xrightarrow{\text{Glycerol–kinase+Mg}^{++}} \text{G1ycerol-3-Phosphate} + \text{ADP}$$

$$\text{Glycerol-3-phosphate} + O_2 \xrightarrow{\text{GPO}} \text{Dihydroxiacetone Phosphate} + H_2O_2$$

$$2H2O2 + \text{4-Aminoantipyrine} + \text{ADPS} \xrightarrow{\text{Peroxidase}} \text{purple quinone} + 4H_2O$$

ADPS = N-Ethyl-N-sulfopropyl-n-anisidine
GPO = Glyccerol-3-phosphate oxidase

Sample

Serum free of haemolysis.

Assay conditions

Wavelength: 546 (520-570) nm
Temperature: 37 °C
Cuvette: 1 cm light path
Read against: reagent blank
Method: endpoint (increasing)

Linearity

The test is linear up to 11.4 mmol/l (1000mg/dl) triglycerides concentration.

TRIGLYCERIDES PAP STABLE LIQUID REAGENT

Cat. No.: 117163 120 ml
117164 600 ml
117165 20 x 20 ml

Reagent kit for the quantitative determination of triglycerides concentration in serum based upon enzymatic colorimetric method (PAP).

Principle

The Triglycerides in the sample are hydrolyzed to Glycerol and Fatty acids by Lipoprotein lipase (LPL). Glycerine is then phosphorylated by Glycerol kinase (GK) in the presence of ATP and Mg^{++} ions. In the next step Glycerol-3-P is oxidized by Glycerol-3-Phosphate oxidase (GPO) in the presence of molecular oxygen (O2). A colored product which absorbance well at 505 nm (490-550 nm) is formed from hydrogen-peroxide, 4-aminoantipyrine and phenol-derivative in the presence of the Peroxidase (POD).

$$\text{Triglycerides} + H_2O \xrightarrow{\text{Lipoprotein–lipase}} \text{Glycerol} + \text{Fatty Acid}$$

$$\text{Glycerol} + \text{ATP} \xrightarrow{\text{Glycerol–kinase+Mg}^{++}} \text{G1ycerol-3-Phosphate} + \text{ADP}$$

$$\text{Glycerol-3-phosphate} + O_2 \xrightarrow{\text{GPO}} \text{Dihydroxiacetone Phosphate} + H_2O_2$$

$$\text{2H2O2+4-Aminoantipyrine+P-Chlorophenol} \xrightarrow{\text{Peroxidase}} \text{Red quinone} + 4H_2O$$

Sample

Serum free of haemolysis.

Assay conditions

Wavelength: 505 (490-550) nm (546Hg)
Temperature: 37 °C
Cuvette: 1 cm light path
Method: endpoint (increasing)
Read against: reagent blank

Linearity

The test is linear from 0,006 (0,53 mg/dl) up to 11,27 mmol/l (1000 mg/dl).

UREA UV
STABLE LIQUID REAGENT

Cat. No.:	616663	616664	616665
	120 ml	500 ml	10 x 20 ml
	(1 x 90 ml + 1 x 30 ml)	(1 x 375 ml + 1 x 125 ml)	(10 x 15 ml + 10 x 5 ml)

Reagent kit for determination of urea concentration in serum and urine.
Enzymatic (UV) method.

Principle

Ammonia and Carbon dioxide (CO_2) are produced when urea is hydrolyzed in presence of Urease. The Ammonia produced in the reaction combines with 2-Oxoglutarate and NADH in the presence of Glutamate dehydrogenase (GLDH) to yield glutamate and NAD^+. The NADH/NAD^+ reaction produces a unique change in absorbance at 340 nm, which correlates with the concentration of urea nitrogen in the sample.

$$\text{Urea} + H_2O \xrightarrow{\text{Urease}} 2NH_4^+ + CO_2$$

$$2NH_4^+ + \text{2-Oxoglutarate} + \text{2NADH} \xrightarrow{\text{GLDH}} \text{2L-Glutamate} + 2NAD^+ + 2H_2O$$

Sample

Serum free of haemolysis.

Assay conditions

Wavelength: 340 (334-365) nm
Temperature: 37 °C
Cuvette: 1 cm light path
Read against: distilled water
Method: kinetic (decreasing)

Linearity

The test is linear up to 66.7 mmol/l (400 mg/dl).

URIC ACID ADPS STABLE LIQUID REAGENT

Cat. No.: 716763 120 ml (1 x 80 ml + 1 x 40 ml)
716764 600 ml (1 x 400 ml + 1 x 200 ml)
716765 10 x 30 ml (10 x 20 ml + 10 x 10 ml)

Reagent kit for determination of uric acid concentration in serum and urine.
Enzymatic colorimetric method.

Principle

$$\text{Uric acid} + 2H_2O + O_2 \xrightarrow{\text{Uricase}} \text{Allantoine} + CO_2 + H_2O_2$$

$$2H_2O_2 + 4\text{Aminoantipyrine} + \text{ADPS} \xrightarrow{\text{Peroxidase}} \text{purple quinone} + 4\,H_2O$$

ADPS = N-Ethyl-N-sulfopropyl-n-anisidine

Sample

Serum free of haemolysis.
Urine diluted in ratio of 1:10 with distilled water.

Assay conditions

Wavelength: 546 (520-570) nm
Temperature: 37 °C
Cuvette: 1 cm light path
Method: endpoint (increasing)
Read against: reagent blank

Linearity

The test is linear up to 1487.5 µmol/l (25 mg/dl) uric acid concentration.

LDL CHOLESTEROL (DIRECT) STABLE LIQUID REAGENT

Cat. No.: 717763
60 ml
(1 x 45 ml + 1 x 15 ml)

A direct immunoinhibition method after selective protection for the quantitative determination of low density lipoprotein cholesterol (LDL-C) in serum and plasma.

Principle

When a sample is mixed with Reagent 1, the protecting (masking) reagent binds to LDL and protects LDL from enzyme reactions. Cholesterol esterase (CHE) and cholesterol oxidase (CO) react with non-LDL lipoproteins [chylomicrons (CM), very low density lipoprotein (VLDL) and HDL]. Hydrogen peroxide produced by the enzyme reactions with non-LDL cholesterol is decomposed by catalase in Reagent 1. When Reagent 2 is added, the protecting (masking) reagent is removed from LDL and catalase is inactivated by sodium azide (NaN3). In this second process, CHE and CO react only with LDL-C. Hydrogen peroxide produced by the enzyme reactions with LDL-C yields a color complex upon oxidative condensation with N-(2-hydroxy-3-sulfopropyl)-3.5-dimethoxyaniline (HDAOS) and 4-aminoantipyrine (4AA) in the presence of peroxidase (POD). By measuring the absorbance of the blue color complex produced, at approximately 600 nm, the LDL-C concentration in the sample can be calculated when compared with the absorbance of the LDL-C Calibrator.

Sample

Serum or plasma can be used.

Assay conditions

Main wavelength: 600 nm
Sub wavelength: 700 nm
Light path: 1 cm
Temperature: 37°C
Method: endpoint (increasing)

Linearity

The test is linear up to 66.7 mmol/l (400 mg/dl).

Diagnosticum Inc.

Established 1989

ALBUMIN
STABLE LIQUID REAGENT

Cat. No.: 211255 20 x 20 ml
211253 1 x 250 ml
211254 4 x 250 ml

Reagent kit for determination of albumin concentration in serum.
Colorimetric bromocresol green method.

Principle

Measurement of antigen/antibody reaction by the endpoint method.

Sample

Serum free of haemolysis.

Assay conditions

Wavelength: 628 (578-650) nm
Temperature: 37 °C
Cuvette: 1 cm light path
Read against: sample blank
Method: endpoint (increasing)

Linearity

The test is linear up to 69 g/l (6,90 g/dl).

CALCIUM ARSENAZO III STABLE LIQUID REAGENT

Cat. No.: 913943 2 x 125 ml
913945 20 x 20 ml

Reagent kit for the determination of calcium concentration in serum and urine.

Principle

At a neutral pH, the Ca^{2+} forms with arsenazo III a complex, the color intensity of which is directly proportional to the concentration of calcium in the sample.

Sample

Serum free of haemolysis.
Urine diluted in ratio of 1:3 with distilled water; adjust to pH 3-4 with 0.1N HCl.

Assay conditions

Wavelength: 600 nm
Temperature: 37 °C
Cuvette: 1 cm light path
Method: endpoint (increasing)
Read against: reagent blank

Linearity

Up to 4 mmol/l (16,0 mg/dl).

CALCIUM OCPC/AMP STABLE LIQUID REAGENT

Cat. No.:	215243	215245
	1 x 250 ml	10 x 40 ml
	(1 x 125 ml + 1 x 125 ml)	(10 x 20ml + 10 x 20 ml)

Reagent kit for determination of calcium concentration in serum and urine.
A colorimetric method based on complex formation with ortho-cresolphthalein.

Principle

Reagent kit for determination of calcium concentration in serum and urine.
A colorimetric method based on complex formation with ortho-cresolphthalein.

Sample

Calcium in alkaline medium forms a purple-red complex with ortho-cresolphthalein. Intensity of the developed color is proportional to the calcium concentration in the sample.

Assay conditions

Wavelength: 570 (550-590) nm
Temperature: 37 °C
Cuvette: 1 cm light path
Method: endpoint (increasing)

Linearity

The test is linear up to 4.5 mmol/l (18,0 mg/dl) calcium concentration.

CHLORIDE
STABLE LIQUID REAGENT

Cat. No.: 611643 2 x 125 ml
611645 20 x 20 ml

Reagent kit for determination of chloride ion concentration in serum, urine and cerebrospinal fluid. A colorimetric endpoint method based on the reaction with mercuric thiocyanate.

Principle

Chloride ion in acidic environment in presence of ferric nitrate forms a colored complex with mercuric thiocyanate. Intensity of the developed colour is proportional to the chloride ion concentration in the sample.

$$2Cl^- + Hg(SCN)_2 \longrightarrow HgCl_2 + 2SCN^-$$

$$SCN^- + Fe^{+++} \longrightarrow Fe(SCN)^{++}$$

Sample

Serum, urine, cerebrospinal fluid.

Assay conditions

Wavelength: 500 (480-520) nm
Temperature: 37 °C
Cuvette: 1 cm light path
Method: endpoint (increasing)

Linearity

Relationship of absorbance vs concentration is linear up to chloride ion concentration of 135 mmol/l (479 mg/dl).

INORGANIC PHOSPHORUS STABLE LIQUID REAGENT

Cat. No.:	311343	311345
	2 x 125 ml	20 x 20 ml

For the quantitative determination of serum and urine inorganic phosphorus.
UV method.

Principle

Inorganic phosphate reacts with molybdate to form a heteropolyacid complex. The sulfuric acid eliminates the need to prepare a protein free filtrate. The absorbance at 340 nm is directly proportional to the inorganic phosphorus level in the sample.

Phosphate + Ammonium molybdate $\xrightarrow{\text{Sulfuric-acid}}$ Heteropolyacid-phosphomolybdic complex

Sample

Serum free of haemolysis.
Urine, diluted with distilled water (1:10).

Assay conditions

Wavelength: 334 nm or 340 nm
Temperature: 37 °C
Cuvette: 1 cm light path
Read against: reagent blank
Measure: end point

Linearity

The test is linear up to 6,49 mmol/l (20,1 mg/dl).

IRON FERROZINE STABLE LIQUID REAGENT

Cat. No.: 615635 10 x 25 ml (10 x 20 ml + 10 x 5 ml)
615633 125 ml (1 x 100 ml + 1 x 25ml)
615634 600 ml (1 x 480 ml + 1 x 120ml)

Reagent kit for determination of iron concentration in serum. Colorimetric method.

Principle

At pH=4.8 and in presence of ascorbic acid, trivalent iron [Fe(III)] dissociated from the transferrin becomes reduced to divalent iron [Fe(II)] which forms a red complex with ferrozine. The absorbance read at 570 nm is proportional to the iron concentration of sample.

Sample

Serum free of haemolysis.

Assay conditions

Wavelength: 570 nm
Secondary wavelength: 600 nm
Temperature: 37 °C
Cuvette: 1 cm pathway
Method: endpoint (increasing)
Reading against: reagent blank

Linearity

The test is linear up to 179 µmol/l (1000µg/dl) iron concentration.

IRON TIBC
STABLE LIQUID REAGENT

Cat. No.: 512533
50 ml

Supplementary kit for determination of total iron binding capacity of serum.

Principle

Total iron-binding capacity (TIBC) is evaluated after saturation of the transferrin by an iron solution and adsorption of excess iron on magnesium hydroxide carbonate. After centrifugation iron is measured in the supernatant.

Sample

Serum free of haemolysis.

Linearity

The test is linear up to 6,49 mmol/l (20,1 mg/dl).

MAGNESIUM
STABLE LIQUID REAGENT

Cat. No.: 715755 (20 x 20 ml) 715753 (1 x 250 ml)

Reagent kit for determination of magnesium ion concentration in serum and urine. A colorimetric xylidyl blue complex method.

Principle

Magnesium ion forms a colored complex with xylidyl blue under alkaline conditions. The intensity of the developed color is proportional to the magnesium ion concentration of the sample.

$$Mg^{2+} + \text{xylidyl blue} \xrightarrow{OH^-} \text{magnesium-xylidyl blue complex}$$

Sample

Serum free of haemolysis. Urine (diluted in ratio of 1:10 with distilled water). The sample should be adjusted to pH 3 - 4 with diluted hydrochloric acid.

Assay conditions

Wavelength: 500 (480-520) nm
Temperature: 37 °C
Cuvette: 1 cm pathway
Method: endpoint (increasing)

Linearity

The test is linear up to 2.5 mmol/l (6,08 mg/dl).

TOTAL PROTEIN (BIURET) STABLE LIQUID REAGENT

Cat. No.: 911953 1 x 250 ml
911955 20 x 20 ml
911993 2 x 500 ml

Reagent kit for the quantitative determination of total protein concentration in serum. Biuret method.

Principle

Cupric ions in an alkaline solution react with the peptide bonds of proteins and polypeptides containing at least two peptide bonds to produce a violet colored complex. The absorbance of the complex at 546 nm is directly proportional to the concentration of protein in the sample.

$$Cu^{++} + \text{Protein} \xrightarrow{OH^-} \text{Cu-Protein complex}$$

Sample

Serum free of haemolysis.

Assay conditions

Wavelength: 546 nm (530-580) nm
Temperature: 37 °C
Cuvette: 1 cm light path
Read against: reagent blank
Method: endpoint (increasing)

Linearity

The test is linear up to 120g/l (12,0 g/dl) protein concentration.

TOTAL PROTEIN ULTRASENSITIVE STABLE LIQUID REAGENT

Cat. No.: 112053
1x250 ml

Reagent kit for the quantitative determination of total protein concentration in urine and liquor. Pyrogallol Red, direct colorimetric method.

Principle

Protein molecules in urine or liquor bind to the molybdate pyrogallol Red complex. The formation of the protein-dye complex causes a shift in the absorbance maximum from 467 nm to 598 nm.

Sample

Urine. Cerebrospinal fluid.

Assay conditions

Wavelength: 598 nm
Temperature: 37 °C
Cuvette: 1 cm light path
Read against: reagent blank
Method: endpoint (increasing)

Linearity

The test is linear up to 2000 mg/l (200 mg/dl) if four-point calibration is used, and 1500 mg/l (150 mg/dl) if the calibration is two-point.

Diagnosticum Inc.

Established 1989

TOTAL SCAVENGER CAPACITY (CHEMILUMINOMETRIC)
STABLE REAGENT

Cat. No.: 518563
120 ml
(2 × 30 ml + 1 × 4 ml + 1 × 60 ml)

Reagent kit for the determination of total scavenger capacity of plasma.

Method

The microperoxidase system $H_2O_2/OH^{\cdot}$ emits light at alkaline pH, the effect of complex iron creates $OH^{\cdot}$ radical from H_2O_2 - in Fenton-type reaction - and the radical generates luminol. Luminol is transformed into stable aminophtalate anion and *hv* quantum (420 nm) is released. If tissue sample or suspendation is added to the system then this blocks the chemical (chemiluminescence) reaction. There is a connection between the rate of blocking and the redox status of the examined biological material.

Sample

Citrate plasma.

Assay conditions

Method: kinetic
Measurement time: 30 sec
Injection: A+B
You need to use the total RLU during the measurement period, not the maximum value.
During the measurement the reagents have to be incubated at 37 °C.

TOTAL ANTIOXIDANT CAPACITY (TAOC)

STABLE LIQUID REAGENT

Cat. No.: 218663
4 x 30 ml
(4 × 1 ml + 1 x 4 ml + 1 x 120 ml + 1 x 2 ml)

Reagent kit to determine the plasma or serum total antioxidant capacity (DPPH method)

Principle

The DPPH (2,2-diphenyl-1-picrylhydrazyl) is a stable free radical. The absorbance of DPPH solution decreases in the presence of antioxidant molecules. There are two ways for neutralize this radical, proton or electron transfer. The reaction can be measured with spectrophotometer at 540 nm. The change in the absorbance is proportional with the antioxidant capacity of the sample.

Sample

Serum, plasma, erythrocyte, tissue suspension, wine, beer, fruits, etc.

Assay conditions

Wavelength: 540 (510-550) nm
Temperature: 37 °C
Cuvette: 1 cm light path
Method: Endpoint (decreasing)
Reading: against sample blank

Linearity

The test is linear up to 4,1 mmol/l.

123456	Albumin standard	5 ml
152001	Calcium standard	5 ml
351301	Chloride Standard	5 ml
650611N	Cholesterol standard	5 ml
950911	Creatinine standard	5 ml
450411	Glucose standard	5 ml
650611H	HDL Cholesterol standard 0,5g/l	5 ml
152101	Inorganic phosphorus standard	5 ml
151111	Iron standard	5 ml
252201	Magnesium standard	5 ml
31001	TAOC standard	1x2 ml
951911	Total protein standard	5 ml
151011	Triglyceride standard	5 ml
850811	Urea standard	5 ml
550511	Uric acid standard	5 ml
520715N	Urine protein standard 2g/l	5 ml
520715H	Urine protein standard 0,5g/l	5 ml

Dcal	DunaCal Multicalibrator	6x3 ml
Dcon-N	DunaCont N Normal control	6x5 ml
Dcon-P	DunaCont P Pathological control	6x5 ml

9441C	Albumin concentrated liquid reagent	10 x 65 ml
9442C	Albumin concentrated liquid reagent	4 x 65 ml
9461C	Alpha-Amilase (EPS) concentrated liquid reagent	10 x 78 ml
9462C	Alpha-Amilase (EPS) concentrated liquid reagent	4 x 78 ml
9451C	Alkaline phosphatase concentrated liquid reagent	10 x 82 ml
9452C	Alkaline phosphatase concentrated liquid reagent	4 x 82 ml
9541C	ALT (GPT) concentrated liquid reagent	10 x 98 ml
9542C	ALT (GPT) concentrated liquid reagent	4 x 98 ml
9511C	AST (GOT) concentrated liquid reagent	10 x 82 ml
9512C	AST (GOT) concentrated liquid reagent	4 x 98 ml
9481C	Gamma-GT concentrated liquid reagent	10 x 82 ml
9482C	Gamma-GT concentrated liquid reagent	4 x 82 ml
9501C	Glucose HK concentrated liquid reagent	10 x 82 ml
9502C	Glucose HK concentrated liquid reagent	4 x 82 ml
9491C	Glucose PAP concentrated liquid reagent	10 x 65 ml
9492C	Glucose PAP concentrated liquid reagent	4 x 65 ml
9551C	Uric acid concentrated liquid reagent	10 x 98 ml
9552C	Uric acid concentrated liquid reagent	4 x 98 ml
9581C	Carbamide UV concentrated liquid reagent	10 x 80 ml
9582C	Carbamide UV concentrated liquid reagent	4 x 80 ml
9801C	Cholesterol PAP concentrated liquid reagent	10 x 65 ml
9802C	Cholesterol PAP concentrated liquid reagent	4 x 65 ml
9471C	Creatinine kinase (CK-NAC) concentrated liquid reagent	10 x 82 ml
9472C	Creatinine kinase (CK-NAC) concentrated liquid reagent	4 x 82 ml
9571C	Creatinine enzimatic concentrated liquid reagent	10 x 80 ml
9572C	Creatinine enzimatic concentrated liquid reagent	4 x 80 ml
9811C	Total protein (Biuret) concentrated liquid reagent	10 x 65 ml
9812C	Total protein (Biuret) concentrated liquid reagent	4 x 65 ml
9821C	Triglyceride PAP concentrated liquid reagent	10 x 65 ml
9822C	Triglyceride PAP concentrated liquid reagent	4 x 65 ml

Notes

Customized kits and bulk packaging are available

Diagnosticum Inc.

Established 1989

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Company contacts
Postal address: Diagnosticum Zrt. Attila u. 126. 1047 Budapest
Telephone: 36-1-369 0739, 36-1-369 3684, 36-1-380 4500, 36-1-380 4548
Fax: 36-1-369 4383
Web: www.diagnosticum.hu

For purchase inquiries, please contact us at the following address:
Email: support@diagnosticum.hu