

ASSAYED BOVINE MULTI-SERA - LEVEL I (BOV ASY CONTROL I)

CAT. NO.	AL1027	LOT NO.	203SL
SIZE:	20 x 5 ml	EXPIRY:	2019-09
GTIN:	05055273200140		

INTENDED USE

This product is intended for *in vitro* diagnostic use in the quality control of diagnostic assays. The Assayed Bovine Multi-sera is for the control of accuracy.

DEVICE DESCRIPTION

The Assayed Bovine Multi-sera is supplied at 3 levels, level 1, 2 and 3. Target values and ranges are supplied for the analytes listed in the value section at 3 levels.

SAFETY PRECAUTIONS AND WARNINGS

For *in vitro* diagnostic use only. Do not pipette by mouth. Exercise the normal precautions required for handling laboratory reagents.

Assayed Bovine Multi-sera is manufactured from bovine sera. Human source material, which has been added, has been tested at donor level for the Human Immunodeficiency Virus (HIV 1, HIV 2) antibody, Hepatitis B Surface Antigen (HbsAg), and Hepatitis C Virus (HCV) antibody and found to be NON-REACTIVE. FDA approved methods have been used to conduct these tests. However, since no method can offer complete assurance as to the absence of infectious agents, this material and all patient samples should be handled as though capable of transmitting infectious diseases and disposed of accordingly.

Health and Safety Data Sheets are available on request.

STORAGE AND STABILITY

OPENED: Store refrigerated (+2°C to +8°C). Reconstituted serum is stable for 8 hours at +15°C to +25°C or 7 days at +2°C to +8°C, and 28 days when frozen once at -20°C (see Limitations).

LIMITATIONS

For Total and Prostatic Acid Phosphatase, the material should be stabilised by adding 1 drop (25 - 30 µl) of 0.7M Acetic acid solution to 1 ml of the serum. After stabilisation Total & Prostatic Acid Phosphatase is stable for 2 hours at +15°C to +25°C, 2 days at +2°C to +8°C, and 28 days when frozen once at -20°C.

Alkaline Phosphatase levels in the reconstituted serum will rise over the stability period. It is recommended that the reconstituted serum is allowed to stand for 1 hour at +15°C to +25°C before measurement.

Bilirubin in the serum is light sensitive and it is recommended that the serum is stored in the dark. Stored in the dark, Bilirubin is stable for 2 days at +2°C to +8°C. Do not store at +15°C to +25°C. Do not freeze.

PSA is stable for 4 days at +2°C to +8°C, or 28 days in aliquots frozen at -20°C.

Bacterial contamination of the reconstituted serum will cause reductions in the stability of many components.

Different lot numbers of this control should not be interchanged, as the values assigned to the controls vary from lot to lot.

The control should not be used as a calibration material.

UNOPENED: Store refrigerated (+2°C to +8°C). Stable to expiration date printed on individual vials.

PREPARATION FOR USE

The Assayed Bovine Multi-sera is supplied lyophilised.

1. Carefully reconstitute each vial of lyophilised serum with exactly 5 ml of distilled water at +15°C to +25°C. Close the bottle and allow to stand for 30 minutes before use. Ensure contents are completely dissolved by swirling gently. Avoid formation of foam. Do not shake.
2. Refer to the Control section of the individual analyser application.
3. Refrigerate any unused material. Prior to reuse, mix contents thoroughly.

MATERIALS PROVIDED

Assayed Bovine Multi-sera - Level I 20 x 5 ml

MATERIALS REQUIRED BUT NOT PROVIDED

Volumetric pipette

ASSIGNED VALUES

Each lot of serum is submitted to a number of external laboratories. Values are assigned from a consensus of results obtained by these laboratories and internal testing conducted at Randox Laboratories Ltd. With each batch, a control range is provided for individual parameters and each parameter method. The control range is equivalent to the assigned mean ± 2 S.D.

If an instrument specific value is not available, refer to the Mean of all Instruments section. If necessary, contact Randox Laboratories - Technical Services, Northern Ireland, tel: +44 (0) 28 9445 1070 or email Technical.Services@randox.com.

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ASSAYED BOVINE MULTI SERA LEVEL 1 (BOV ASY CONTROL 1)

Cat. No. AL1027 Lot. No. 203SL Size 20 x 5ml Expiry 2019-09

Beckman Coulter AU Series®

Range

Analyte	unit	Target	low	high	methods
Albumin	g/l	26.7	22.7	30.7	Bromocresol Green
	g/dl	2.67	2.27	3.07	
Alkaline Phosphatase	U/l	99	84	114	AMP optimised to IFCC 37°C
ALT (GPT)	U/l	27	22	32	Tris buffer without P5P 37°C
AST (GOT)	U/l	24	19	29	Tris buffer without P5P 37°C
Bicarbonate	mmol/l	13.9	11.0	16.8	Enzymatic
Bilirubin Direct	µmol/l	17.8	14.1	21.5	Diazo with Sulphanilic Acid
	mg/dl	1.04	0.825	1.26	
Bilirubin Total	µmol/l	19.6	15.5	23.7	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.15	0.910	1.39	
Calcium	mmol/l	1.62	1.46	1.78	Arsenazo III
	mg/dl	6.49	5.85	7.13	
Chloride	mmol/l	83.0	76.4	89.6	ISE indirect
CK Total	U/l	166	136	196	CK-NAC (IFCC) 37°C
Creatinine	µmol/l	85.5	68.4	103	Jaffe rate blanked
	mg/dl	0.970	0.770	1.16	
Gamma-GT	U/l	30	26	35	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
Glucose	mmol/l	3.15	2.68	3.62	Hexokinase
	mg/dl	56.8	48.3	65.3	
Iron	µmol/l	23.8	19.5	28.1	Colorimetric without ppt.
	µg/dl	133	109	157	
LD (LDH)	U/l	66	56	76	L->P IFCC 37°C
Magnesium	mmol/l	0.675	0.594	0.756	Xylidyl Blue
	mg/dl	1.64	1.44	1.84	
Phosphate Inorganic	mmol/l	0.845	0.676	1.01	Phosphomolybdate UV
	mg/dl	2.62	2.10	3.14	
Potassium	mmol/l	3.16	2.91	3.41	ISE indirect
Protein Total	g/l	41.7	33.4	50.0	Biuret reaction end point
	g/dl	4.17	3.34	5.00	
Sodium	mmol/l	118	112	124	ISE indirect
Urea	mmol/l	2.89	2.46	3.32	Urease kinetic
	mg/dl	17.4	14.8	20.0	
	mmol/l	2.89	2.46	3.32	BUN
	mg/dl	8.11	6.89	9.33	
Uric Acid (Urate)	mmol/l	0.219	0.190	0.250	Uricase peroxidase with ascorbate oxidase
	mg/dl	3.68	3.19	4.20	

ASSAYED BOVINE MULTI SERA LEVEL 1 (BOV ASY CONTROL 1)

Cat. No. AL1027 Lot. No. 203SL Size 20 x 5ml Expiry 2019-09

HITACHI SERIES®

Range

Analyte	unit	Target	low	high	methods
Acid Phosphatase (non-prostatic)	U/l	4.99	3.34	6.64	1-Naphthyl Phosphate substrate Kinetic 37°C
	U/l	3.38	2.26	4.50	1-Naphthyl Phosphate, Kinetic with Pentane diol Activation 37°C
Acid Phosphatase (Prostatic)	U/l	4.35	2.91	5.79	1-Naphthyl Phosphate substrate Kinetic 37°C
	U/l	8.22	5.51	10.9	1-Naphthyl Phosphate, Kinetic with Pentane diol Activation 37°C
Acid Phosphatase (Total)	U/l	9.34	6.26	12.4	1-Naphthyl Phosphate substrate Kinetic 37°C
	U/l	11.6	7.77	15.4	1-Naphthyl Phosphate, Kinetic with Pentane diol Activation 37°C
Albumin	g/l	30.7	26.1	35.3	Bromocresol Green
	g/dl	3.07	2.61	3.53	
Alkaline Phosphatase	U/l	54	46	62	p-Nitrophenylphosphate AMP 37°C
	U/l	42	36	48	p-Nitrophenylphosphate AMP 30°C
	U/l	35	29	41	p-Nitrophenylphosphate AMP 25°C
	U/l	90	77	104	Randox AMP 37°C
	U/l	70	60	81	Randox AMP 30°C
	U/l	58	49	66	Randox AMP 25°C
ALT (GPT)	U/l	26	21	31	Tris buffer without P5P 37°C
	U/l	19	16	22	Tris buffer without P5P 30°C
	U/l	15	12	18	Tris buffer without P5P 25°C
Amylase Total	U/l	80	68	92	Roche liquid stable pNPG7 37°C
	U/l	86	73	99	Randox liquid stable pNPG7 37°C
AST (GOT)	U/l	27	22	32	Tris buffer without P5P 37°C
	U/l	18	15	21	Tris buffer without P5P 30°C
	U/l	13	10	16	Tris buffer without P5P 25°C
Bicarbonate	mmol/l	14.8	11.7	17.9	Enzymatic
Bile Acids	µmol/l	11.7	9.36	14.0	5th Generation Colorimetric
Bilirubin Direct	µmol/l	13.0	10.3	15.7	Oxidation to Biliverdin/Vanadate
	mg/dl	0.760	0.600	0.920	
Bilirubin Total	µmol/l	16.9	13.4	20.4	Dichlorophenyl Diazonium (DPD)
	mg/dl	0.989	0.784	1.19	
Calcium	mmol/l	1.71	1.54	1.88	Cresolphthalein complexone
	mg/dl	6.85	6.17	7.53	
Chloride	mmol/l	80.2	73.8	86.6	ISE indirect
Cholesterol	mmol/l	3.78	3.29	4.27	Cholesterol Oxidase
	mg/dl	146	127	165	
CK Total	U/l	138	113	163	CK-NAC (IFCC) 37°C
	U/l	86	71	101	CK-NAC (IFCC) 30°C
	U/l	59	48	70	CK-NAC (IFCC) 25°C
Creatinine	µmol/l	68.8	55.0	82.6	Alkaline picrate no deproteinization
	mg/dl	0.777	0.622	0.932	
Gamma-GT	U/l	29	25	33	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	23	20	26	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30°C
	U/l	18	15	21	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25°C
Glucose	mmol/l	3.32	2.82	3.82	Glucose oxidase
	mg/dl	59.8	50.8	68.8	

ASSAYED BOVINE MULTI SERA LEVEL 1 (BOV ASY CONTROL 1)

Cat. No. AL1027 Lot. No. 203SL Size 20 x 5ml Expiry 2019-09

HITACHI SERIES®

Range

Analyte	unit	Target	low	high	methods
Iron	μmol/l	23.6	19.4	27.8	Colorimetric without ppt.
	μg/dl	132	108	156	
LD (LDH)	U/l	140	119	161	P->L German methods 37°C
	U/l	101	86	116	P->L German methods 30°C
	U/l	71	60	82	P->L German methods 25°C
Lipase	U/l	26	21	31	Randox Colorimetric 37°C
Magnesium	mmol/l	0.680	0.598	0.762	Xylidyl Blue
	mg/dl	1.65	1.45	1.85	
Phosphate Inorganic	mmol/l	0.820	0.656	0.984	Phosphomolybdate UV
	mg/dl	2.54	2.03	3.05	
Potassium	mmol/l	3.28	3.02	3.54	ISE indirect
Protein Total	g/l	43.0	34.4	51.6	Biuret reaction end point
	g/dl	4.30	3.44	5.16	
Sodium	mmol/l	120	114	126	ISE indirect
TIBC	μmol/l	38.0	30.0	46.0	Randox Colorimetric
	μg/dl	212	168	257	
Triglycerides	mmol/l	0.712	0.598	0.826	Lipase/GPO-PAP no correction
	mg/dl	63.0	52.9	73.1	
Urea	mmol/l	2.95	2.51	3.39	Urease kinetic
	mg/dl	17.7	15.1	20.3	
	mmol/l	2.95	2.51	3.39	BUN
	mg/dl	8.28	7.04	9.52	
Uric Acid (Urate)	mmol/l	0.199	0.173	0.225	Uricase peroxidase with ascorbate oxidase
	mg/dl	3.34	2.91	3.77	

ASSAYED BOVINE MULTI SERA LEVEL 1 (BOV ASY CONTROL 1)

Cat. No. AL1027 Lot. No. 203SL Size 20 x 5ml Expiry 2019-09

MEAN OF ALL INSTRUMENTS

Range

Analyte	unit	Target	low	high	methods
Alpha-HBDH	U/l	84	66	102	Oxobutyrate < 10 mmol/l 37°C
	U/l	63	50	77	Oxobutyrate < 10 mmol/l 30°C
	U/l	48	37	58	Oxobutyrate < 10 mmol/l 25°C
Acid Phosphatase (non-prostatic)	U/l	4.99	3.34	6.64	1-Naphthyl Phosphate substrate Kinetic 37°C
	U/l	3.38	2.26	4.50	1-Naphthyl Phosphate, Kinetic with Pentane diol Activation 37°C
Acid Phosphatase (Prostatic)	U/l	4.35	2.91	5.79	1-Naphthyl Phosphate substrate Kinetic 37°C
	U/l	8.22	5.51	10.9	1-Naphthyl Phosphate, Kinetic with Pentane diol Activation 37°C
Acid Phosphatase (Total)	U/l	9.34	6.26	12.4	1-Naphthyl Phosphate substrate Kinetic 37°C
	U/l	11.6	7.77	15.4	1-Naphthyl Phosphate, Kinetic with Pentane diol Activation 37°C
Albumin	g/l	28.5	24.2	32.8	Bromocresol Green
	g/dl	2.85	2.42	3.28	
Alkaline Phosphatase	U/l	90	77	104	p-Nitrophenylphosphate AMP 37°C
	U/l	70	60	80	p-Nitrophenylphosphate AMP 30°C
	U/l	58	49	67	p-Nitrophenylphosphate AMP 25°C
	U/l	143	122	164	Diethanolamine buffer DEA 37°C
	U/l	111	95	127	Diethanolamine buffer DEA 30°C
	U/l	91	78	104	Diethanolamine buffer DEA 25°C
ALT (GPT)	U/l	31	25	37	Tris buffer with P5P 37°C
	U/l	23	19	27	Tris buffer with P5P 30°C
	U/l	17	14	20	Tris buffer with P5P 25°C
	U/l	28	22	34	Tris buffer without P5P 37°C
	U/l	21	16	26	Tris buffer without P5P 30°C
	U/l	16	12	20	Tris buffer without P5P 25°C
Amylase Total	U/l	126	107	145	Randox - Ethylidene pNPG7 37°C
	U/l	86	73	99	Randox liquid stable pNPG7 37°C
	U/l	80	68	92	Roche liquid stable pNPG7 37°C
AST (GOT)	U/l	28	22	34	Tris buffer with P5P 37°C
	U/l	19	15	23	Tris buffer with P5P 30°C
	U/l	13	10	16	Tris buffer with P5P 25°C
	U/l	26	21	31	Tris buffer without P5P 37°C
	U/l	18	14	22	Tris buffer without P5P 30°C
	U/l	12	10	14	Tris buffer without P5P 25°C
Bicarbonate	mmol/l	14.1	11.2	17.0	Enzymatic
Bile Acids	µmol/l	14.1	11.3	16.9	4th Generation Colorimetric
	µmol/l	12.2	9.76	14.6	5th Generation Colorimetric
Bilirubin Direct	µmol/l	16.7	13.2	20.2	Diazo with Sulphanilic Acid
	mg/dl	0.977	0.772	1.18	
	µmol/l	15.2	12.0	18.4	Vanadate Oxidation
	mg/dl	0.889	0.702	1.08	
	µmol/l	10.9	8.61	13.2	Modified Jendrassik
	mg/dl	0.640	0.500	0.770	
Bilirubin Total	µmol/l	18.6	14.7	22.5	Diazo with Sulphanilic Acid
	mg/dl	1.09	0.860	1.32	

ASSAYED BOVINE MULTI SERA LEVEL 1 (BOV ASY CONTROL 1)

Cat. No. AL1027 Lot. No. 203SL Size 20 x 5ml Expiry 2019-09

MEAN OF ALL INSTRUMENTS

Range

Analyte	unit	Target	low	high	methods
Bilirubin Total	μmol/l	18.3	14.5	22.1	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.07	0.848	1.29	
	μmol/l	22.4	17.7	27.1	Diazo with Dichloroaniline (DCA)
	mg/dl	1.31	1.04	1.59	
	μmol/l	19.0	15.0	23.0	Vanadate Oxidation
	mg/dl	1.11	0.880	1.35	
	μmol/l	22.8	18.0	27.6	Modified Jendrassik
	mg/dl	1.33	1.05	1.61	
Calcium	mmol/l	1.68	1.51	1.85	Arsenazo III
	mg/dl	6.73	6.05	7.41	
	mmol/l	1.63	1.47	1.79	Cresolphthalein complexone
	mg/dl	6.53	5.89	7.17	
Chloride	mmol/l	88.7	81.6	95.8	Colorimetric
	mmol/l	81.6	75.1	88.1	ISE indirect
	mmol/l	86.1	79.2	93.0	ISE direct
Cholesterol	mmol/l	3.75	3.26	4.24	Cholesterol Oxidase
	mg/dl	145	126	164	
CK Total	U/l	150	123	177	CK-NAC substrate start (DGKC) 37°C
	U/l	94	77	111	CK-NAC substrate start (DGKC) 30°C
	U/l	64	52	76	CK-NAC substrate start (DGKC) 25°C
	U/l	156	128	184	CK-NAC (IFCC) 37°C
	U/l	98	80	116	CK-NAC (IFCC) 30°C
	U/l	66	54	78	CK-NAC (IFCC) 25°C
Copper	μmol/l	13.2	10.6	15.8	Colorimetric
	μg/dl	84.0	67.4	101	
Cortisol	nmol/l	147	110	184	Roche Cobas E411
	μg/dl	5.29	3.96	6.62	
Creatinine	μmol/l	74.3	59.4	89.2	Alkaline picrate no deproteinization
	mg/dl	0.840	0.671	1.01	
	μmol/l	75.2	60.2	90.2	Randox Enzymatic UV method
	mg/dl	0.850	0.680	1.02	
	μmol/l	85.5	68.4	103	Jaffe rate blanked
	mg/dl	0.970	0.770	1.16	
	μmol/l	59.8	47.8	71.8	Jaffe rate blanked comp. (-26 μmol/l)
	mg/dl	0.680	0.540	0.810	
D-3-Hydroxybutyrate	mmol/l	0.798	0.678	0.918	Tris buffer 100mmol pH 8.5
Free T4	pmol/l	26.5	19.9	33.1	Roche Cobas E411
	ng/dl	2.07	1.55	2.58	
	pg/ml	20.7	15.5	25.8	
Gamma-GT	U/l	29	25	33	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	23	20	26	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30°C
	U/l	18	15	21	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25°C
	U/l	34	29	39	Randox Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C
	U/l	27	23	31	Randox Gamma glutamyl.-3-carboxy-4-nitroanilide 30°C
	U/l	21	18	24	Randox Gamma glutamyl.-3-carboxy-4-nitroanilide 25°C

ASSAYED BOVINE MULTI SERA LEVEL 1 (BOV ASY CONTROL 1)

Cat. No. AL1027 Lot. No. 203SL Size 20 x 5ml Expiry 2019-09

MEAN OF ALL INSTRUMENTS

Range

Analyte	unit	Target	low	high	methods
GLDH	U/l	8	6	10	Triethanolamine buffer 50 mmol 37°C
	U/l	6	5	7	Triethanolamine buffer 50 mmol 30°C
	U/l	5	4	6	Triethanolamine buffer 50 mmol 25°C
Glucose	mmol/l	3.14	2.67	3.61	Hexokinase
	mg/dl	56.6	48.1	65.1	
	mmol/l	3.21	2.73	3.69	Glucose oxidase
	mg/dl	57.8	49.2	66.4	
Iron	µmol/l	23.7	19.4	28.0	Colorimetric without ppt.
	µg/dl	132	108	156	
Lactate	mmol/l	2.69	2.21	3.17	Colorimetric Lactate Oxidase
	mg/dl	24.2	19.9	28.6	
LD (LDH)	U/l	140	119	161	P->L German methods 37°C
	U/l	101	86	116	P->L German methods 30°C
	U/l	71	60	82	P->L German methods 25°C
	U/l	69	59	79	L->P IFCC 37°C
	U/l	50	43	57	L->P IFCC 30°C
	U/l	35	30	40	L->P IFCC 25°C
Lipase	U/l	26	21	31	Randox Colorimetric 37°C
	U/l	146	117	175	Randox Turbidimetric with colipase 37°C
Lithium	mmol/l	0.518	0.460	0.580	Randox Colorimetric
	mg/dl	0.360	0.320	0.400	
Magnesium	mmol/l	0.659	0.580	0.738	Xylidyl Blue
	mg/dl	1.60	1.41	1.79	
NEFA	mmol/l	1.60	1.36	1.84	Colorimetric
Osmolality	mOsm/kg	255	204	306	Freezing point depression
Phosphate Inorganic	mmol/l	0.848	0.678	1.02	Phosphomolybdate UV
	mg/dl	2.63	2.10	3.16	
Potassium	mmol/l	3.36	3.09	3.63	Enzymatic
	mmol/l	3.11	2.86	3.36	ISE direct
	mmol/l	3.22	2.96	3.48	ISE indirect
Protein Total	g/l	42.9	34.3	51.5	Biuret reaction end point
	g/dl	4.29	3.43	5.15	
PSA Total	ng/ml = µg/l	2.83	2.12	3.54	Roche Cobas E411
Sodium	mmol/l	121	115	127	Enzymatic
	mmol/l	120	114	126	ISE direct
	mmol/l	119	113	125	ISE indirect
TIBC	µmol/l	38.0	30.0	46.0	Randox Direct
	µg/dl	212	168	257	
Total T3	nmol/l	2.34	1.76	2.93	Roche Cobas E411
	ng/ml	1.52	1.15	1.91	
	ng/dl	152	115	191	
Total T4	nmol/l	60.5	45.4	75.6	Roche Cobas E411
	µg/dl	4.72	3.54	5.90	
	ng/ml	47.2	35.4	59.0	
Triglycerides	mmol/l	0.719	0.604	0.834	Lipase/GPO-PAP no correction
	mg/dl	63.6	53.5	73.7	

ASSAYED BOVINE MULTI SERA LEVEL 1 (BOV ASY CONTROL 1)

Cat. No. AL1027 Lot. No. 203SL Size 20 x 5ml Expiry 2019-09

MEAN OF ALL INSTRUMENTS

Range

Analyte	unit	Target	low	high	methods
Urea	mmol/l	2.86	2.43	3.29	Urease kinetic
	mg/dl	17.2	14.6	19.8	
	mmol/l	4.39	3.73	5.05	Urease hypochlorite
	mg/dl	26.4	22.4	30.4	
	mmol/l	3.86	3.28	4.44	Urease Berthelot
	mg/dl	23.2	19.7	26.7	
	mmol/l	2.86	2.43	3.29	BUN
	mg/dl	8.03	6.83	9.23	
Uric Acid (Urate)	mmol/l	0.207	0.180	0.234	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	3.48	3.02	3.94	
	mmol/l	0.193	0.168	0.218	Uricase peroxidase no ascorbate oxidase
	mg/dl	3.24	2.82	3.66	
	mmol/l	0.209	0.182	0.236	Uricase peroxidase with ascorbate oxidase
	mg/dl	3.51	3.06	3.96	
Vitamin B12	pmol/l	197	158	236	Roche Cobas E411
	pg/ml	267	214	320	
Zinc	μmol/l	13.9	11.1	16.7	Colorimetric with deproteinisation
	μg/dl	90.8	72.5	109	

ASSAYED BOVINE MULTI SERA LEVEL 1 (BOV ASY CONTROL 1)

Cat. No. AL1027 Lot. No. 203SL Size 20 x 5ml Expiry 2019-09

RX SERIES®		Range			
Analyte	unit	Target	low	high	methods
Albumin	g/l	29.2	24.8	33.6	Bromocresol Green
	g/dl	2.92	2.48	3.36	
Alkaline Phosphatase	U/l	143	122	164	Diethanolamine buffer DEA 37°C
	U/l	90	77	104	AMP optimised to IFCC 37°C
ALT (GPT)	U/l	27	22	32	Tris buffer without P5P 37°C
Amylase Total	U/l	86	73	99	Randox liquid stable pNPG7 37°C
AST (GOT)	U/l	24	19	29	Tris buffer without P5P 37°C
Bicarbonate	mmol/l	13.6	10.8	16.4	Enzymatic
Bile Acids	µmol/l	12.6	10.1	15.1	5th Generation Colorimetric
Bilirubin Direct	µmol/l	17.5	13.8	21.2	Diazo with Sulphanilic Acid
	mg/dl	1.02	0.807	1.23	
	µmol/l	14.4	11.4	17.4	Vanadate Oxidation
	mg/dl	0.840	0.670	1.02	
Bilirubin Total	µmol/l	21.8	17.2	26.4	Diazo with Sulphanilic Acid
	mg/dl	1.28	1.01	1.55	
	µmol/l	19.0	15.0	23.0	Vanadate Oxidation
	mg/dl	1.11	0.880	1.35	
Calcium	mmol/l	1.72	1.55	1.89	Arsenazo III
	mg/dl	6.89	6.21	7.57	
Chloride	mmol/l	86.1	79.2	93.0	ISE direct
Cholesterol	mmol/l	3.81	3.31	4.31	Cholesterol Oxidase
	mg/dl	147	128	166	
CK Total	U/l	150	123	177	CK-NAC substrate start (DGKC) 37°C
	U/l	163	134	192	CK-NAC (IFCC) 37°C
Creatinine	µmol/l	79.7	63.8	95.6	Alkaline picrate no deproteinization
	mg/dl	0.901	0.721	1.08	
	µmol/l	75.2	60.2	90.2	Randox Enzymatic UV method
	mg/dl	0.850	0.680	1.02	
Gamma-GT	U/l	34	29	39	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
Glucose	mmol/l	3.23	2.75	3.71	Hexokinase
	mg/dl	58.2	49.6	66.8	
	mmol/l	3.23	2.75	3.71	Glucose oxidase
	mg/dl	58.2	49.6	66.8	
Iron	µmol/l	24.1	19.8	28.4	Colorimetric without ppt.
	µg/dl	135	111	159	
Lactate	mmol/l	2.69	2.21	3.17	Colorimetric Lactate Oxidase
	mg/dl	24.2	19.9	28.6	
LD (LDH)	U/l	143	122	164	P->L German methods 37°C
	U/l	72	61	83	L->P IFCC 37°C
Lipase	U/l	26	21	31	Randox Colorimetric
Lithium	mmol/l	0.461	0.410	0.520	Colorimetric
	mg/dl	0.320	0.280	0.360	

ASSAYED BOVINE MULTI SERA LEVEL 1 (BOV ASY CONTROL 1)

Cat. No. AL1027 Lot. No. 203SL Size 20 x 5ml Expiry 2019-09

RX SERIES®

Range

Analyte	unit	Target	low	high	methods
Magnesium	mmol/l	0.659	0.580	0.738	Xylidyl Blue
	mg/dl	1.60	1.41	1.79	
Phosphate Inorganic	mmol/l	0.855	0.727	0.983	Phosphomolybdate UV
	mg/dl	2.65	2.25	3.05	
Potassium	mmol/l	3.36	3.09	3.63	Enzymatic
	mmol/l	3.11	2.86	3.36	ISE direct
Protein Total	g/l	43.8	35.0	52.6	Biuret reaction end point
	g/dl	4.38	3.50	5.26	
Sodium	mmol/l	120	114	126	Enzymatic
	mmol/l	120	114	126	ISE direct
TIBC	μmol/l	38.0	30.0	46.0	Direct Colorimetric
	μg/dl	212	168	256	
Triglycerides	mmol/l	0.681	0.572	0.790	Lipase/GPO-PAP no correction
	mg/dl	60.3	50.6	70.0	
Urea	mmol/l	2.80	2.38	3.22	Urease kinetic
	mg/dl	16.8	14.3	19.3	
	mmol/l	2.80	2.38	3.22	BUN
	mg/dl	7.86	6.68	9.04	
Uric Acid (Urate)	mmol/l	0.193	0.170	0.220	Uricase peroxidase no ascorbate oxidase
	mg/dl	3.24	2.86	3.70	
	mmol/l	0.210	0.180	0.240	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	3.53	3.02	4.03	

ASSAYED BOVINE MULTI SERA LEVEL 1 (BOV ASY CONTROL 1)

Cat. No. AL1027 Lot. No. 203SL Size 20 x 5ml Expiry 2019-09

SIEMENS ADVIA 1200/1650/1800/2400®

Range

Analyte	unit	Target	low	high	methods
Albumin	g/l	27.3	23.2	31.4	Bromocresol Green
	g/dl	2.73	2.32	3.14	
Alkaline Phosphatase	U/l	85	72	98	p-Nitrophenylphosphate AMP 37°C
	U/l	120	102	138	Diethanolamine buffer DEA 37°C
ALT (GPT)	U/l	30	24	36	Tris buffer without P5P 37°C
Amylase Total	U/l	82	70	94	pNP Maltotrioxide substrates 37°C
AST (GOT)	U/l	29	23	35	Tris buffer without P5P 37°C
Bilirubin Direct	µmol/l	15.9	12.6	19.2	Vanadate Oxidation
	mg/dl	0.930	0.740	1.12	
Bilirubin Total	µmol/l	18.9	14.9	22.9	Vanadate Oxidation
	mg/dl	1.11	0.870	1.34	
Calcium	mmol/l	1.55	1.40	1.71	Cresolphthalein complexone
	mg/dl	6.21	5.61	6.81	
	mmol/l	1.69	1.52	1.86	Arsenazo III
	mg/dl	6.77	6.09	7.45	
Cholesterol	mmol/l	3.66	3.18	4.14	Cholesterol Oxidase
	mg/dl	141	123	159	
CK Total	U/l	137	112	162	CK-NAC serum start (DGKC) 37°C
Creatinine	µmol/l	59.8	47.8	71.8	Jaffe rate blanked comp. (-26 µmol/l)
	mg/dl	0.680	0.540	0.810	
Gamma-GT	U/l	28	24	32	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
Glucose	mmol/l	3.07	2.61	3.53	Glucose oxidase
	mg/dl	55.3	47.0	63.6	
	mmol/l	3.04	2.58	3.50	Hexokinase
	mg/dl	54.8	46.5	63.1	
Iron	µmol/l	23.2	19.0	27.4	Colorimetric without ppt.
	µg/dl	130	106	154	
LD (LDH)	U/l	67	57	77	L->P 37°C
	U/l	136	116	156	P->L German methods 37°C
Magnesium	mmol/l	0.622	0.547	0.697	Xylidyl Blue
	mg/dl	1.51	1.33	1.69	
Phosphate Inorganic	mmol/l	0.870	0.696	1.04	Phosphomolybdate UV
	mg/dl	2.70	2.16	3.24	
Protein Total	g/l	43.0	34.4	51.6	Biuret reaction end point
	g/dl	4.30	3.44	5.16	
Triglycerides	mmol/l	0.765	0.643	0.887	Lipase/GPO-PAP no correction
	mg/dl	67.7	56.9	78.5	
Urea	mmol/l	2.80	2.38	3.22	Urease kinetic
	mg/dl	16.8	14.3	19.3	
	mmol/l	2.80	2.38	3.22	BUN
	mg/dl	7.86	6.68	9.04	
Uric Acid (Urate)	mmol/l	0.203	0.177	0.229	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	3.41	2.97	3.85	