

ASSAYED BOVINE MULTI-SERA - LEVEL 2 (BOV ASY CONTROL 2)

Cat. No. AN1026 **Lot No.** 453SN
Size: 20 x 5 ml **Expiry:** 2019-09

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 2 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.

22 Feb '16 ne

ASSAYED BOVINE MULTI-SERA - LEVEL 2 (BOV ASY CONTROL 2)

Cat. No. AN1026 Lot No. 453SN Size: 20 x 5 ml Expiry: 2019-09

Beckman Coulter AU Series®

Range

Analyte	unit	Target	low	high	methods
Albumin	g/l	39.0	33.2	44.9	Bromocresol Green
	g/dl	3.90	3.32	4.48	
Alkaline Phosphatase	U/l	121	103	139	AMP optimised to IFCC 37°C
ALT (GPT)	U/l	52	42	62	Tris buffer without P5P 37°C
AST (GOT)	U/l	40	32	48	Tris buffer without P5P 37°C
Bicarbonate	mmol/l	23.0	18.2	27.8	Enzymatic
Bilirubin Direct	µmol/l	21.0	16.6	25.4	Diazotization with Sulphanilic Acid
	mg/dl	1.23	0.971	1.49	
Bilirubin Total	µmol/l	27.8	22.0	33.6	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.63	1.29	1.97	
Calcium	mmol/l	2.37	2.13	2.61	Arsenazo III
	mg/dl	9.50	8.54	10.5	
Chloride	mmol/l	97.2	89.4	105	ISE indirect
CK Total	U/l	198	162	234	CK-NAC (IFCC) 37°C
Creatinine	µmol/l	162	130	194	Jaffe rate blanked
	mg/dl	1.83	1.47	2.19	
Gamma-GT	U/l	54	46	62	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
Glucose	mmol/l	5.91	5.02	6.80	Hexokinase
	mg/dl	106	90.5	122	
Iron	µmol/l	26.4	21.6	31.2	Colorimetric without ppt.
	µg/dl	148	121	175	
LD (LDH)	U/l	110	94	127	L->P IFCC 37°C
Magnesium	mmol/l	0.898	0.790	1.01	Xylidyl Blue
	mg/dl	2.18	1.92	2.44	
Phosphate Inorganic	mmol/l	1.29	1.10	1.48	Phosphomolybdate UV
	mg/dl	4.00	3.41	4.59	
Potassium	mmol/l	4.50	4.14	4.86	ISE indirect
Protein Total	g/l	56.9	45.5	68.3	Biuret reaction end point
	g/dl	5.69	4.55	6.83	
Sodium	mmol/l	141	134	148	ISE indirect
Urea	mmol/l	6.77	5.75	7.79	Urease kinetic
	mg/dl	40.7	34.6	46.8	
	mmol/l	6.77	5.75	7.79	BUN
	mg/dl	19.0	16.2	21.8	
Uric Acid (Urate)	mmol/l	0.347	0.300	0.390	Uricase peroxidase with ascorbate oxidase
	mg/dl	5.83	5.04	6.55	

%

ASSAYED BOVINE MULTI-SERA - LEVEL 2 (BOV ASY CONTROL 2)

Cat No. AN1026 Lot No. 453SN Size: 20 x 5 ml Expiry: 2019-09

HITACHI SERIES®		Range			
Analyte	unit	Target	low	high	methods
Acid Phosphatase (non-prostatic)	U/l	5.14	3.44	6.84	1-Naphthyl Phosphate substrate Kinetic 37°C
	U/l	4.71	3.16	6.26	1-Naphthyl Phosphate, Kinetic with Pentane diol Activation 37°C
Acid Phosphatase (Prostatic)	U/l	11.4	7.64	15.2	1-Naphthyl Phosphate substrate Kinetic 37°C
	U/l	19.4	13.0	25.8	1-Naphthyl Phosphate, Kinetic with Pentane diol Activation 37°C
Acid Phosphatase (Total)	U/l	16.5	11.1	21.9	1-Naphthyl Phosphate substrate Kinetic 37°C
	U/l	24.1	16.1	32.1	1-Naphthyl Phosphate, Kinetic with Pentane diol Activation 37°C
Albumin	g/l	43.5	37.0	50.0	Bromocresol Green
	g/dl	4.35	3.70	5.00	
Alkaline Phosphatase	U/l	64	54	74	p-Nitrophenylphosphate AMP 37°C
	U/l	50	42	58	p-Nitrophenylphosphate AMP 30°C
	U/l	41	35	47	p-Nitrophenylphosphate AMP 25°C
	U/l	103	88	118	Randox AMP 37°C
	U/l	80	69	92	Randox AMP 30°C
	U/l	66	56	75	Randox AMP 25°C
ALT (GPT)	U/l	54	43	65	Tris buffer without P5P 37°C
	U/l	40	32	48	Tris buffer without P5P 30°C
	U/l	30	24	36	Tris buffer without P5P 25°C
Amylase Total	U/l	115	98	132	Roche liquid stable pNPG7 37°C
	U/l	132	112	152	Randox liquid stable pNPG7 37°C
AST (GOT)	U/l	44	35	53	Tris buffer without P5P 37°C
	U/l	30	24	36	Tris buffer without P5P 30°C
	U/l	21	17	25	Tris buffer without P5P 25°C
Bicarbonate	mmol/l	21.8	17.3	26.3	Enzymatic
Bile Acids	µmol/l	24.0	19.2	28.8	5th Generation Colorimetric
Bilirubin Direct	µmol/l	18.6	14.7	22.5	Oxidation to Biliverdin
	mg/dl	1.09	0.860	1.32	
Bilirubin Total	µmol/l	25.9	20.5	31.3	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.52	1.20	1.84	
Calcium	mmol/l	2.44	2.20	2.68	Cresolphthalein complexone
	mg/dl	9.78	8.82	10.7	
Chloride	mmol/l	93.7	86.2	101	ISE indirect
Cholesterol	mmol/l	5.00	4.35	5.65	Cholesterol Oxidase
	mg/dl	193	168	218	
CK Total	U/l	163	134	192	CK-NAC (IFCC) 37°C
	U/l	102	84	120	CK-NAC (IFCC) 30°C
	U/l	69	57	81	CK-NAC (IFCC) 25°C
Creatinine	µmol/l	148	118	178	Alkaline picrate no deproteinization
	mg/dl	1.67	1.33	2.01	
Gamma-GT	U/l	50	43	58	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	39	34	44	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30°C
	U/l	31	27	35	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25°C
Glucose	mmol/l	6.12	5.20	7.04	Glucose oxidase
	mg/dl	110	93.7	126	

%

ASSAYED BOVINE MULTI-SERA - LEVEL 2 (BOV ASY CONTROL 2)

Cat No. AN1026 Lot No. 453SN Size: 20 x 5 ml Expiry: 2019-09

HITACHI SERIES®

Range

Analyte	unit	Target	low	high	methods
Iron	µmol/l	25.0	20.5	29.5	Colorimetric without ppt.
	µg/dl	140	115	165	
LD (LDH)	U/l	222	189	255	P->L German methods 37°C
	U/l	160	136	184	P->L German methods 30°C
	U/l	113	96	130	P->L German methods 25°C
Lipase	U/l	36	29	43	Randox Colorimetric 37°C
Magnesium	mmol/l	0.902	0.794	1.01	Xylidyl Blue
	mg/dl	2.19	1.93	2.45	
Phosphate Inorganic	mmol/l	1.22	1.04	1.40	Phosphomolybdate UV
	mg/dl	3.78	3.22	4.34	
Potassium	mmol/l	4.59	4.22	4.96	ISE indirect
Protein Total	g/l	57.0	45.6	68.4	Biuret reaction end point
	g/dl	5.70	4.56	6.84	
Sodium	mmol/l	142	135	149	ISE indirect
TIBC	µmol/l	45.1	35.6	54.6	Randox Colorimetric
	µg/dl	252	199	305	
Triglycerides	mmol/l	1.15	0.966	1.33	Lipase/GPO-PAP no correction
	mg/dl	102	85.5	119	
Urea	mmol/l	7.32	6.22	8.42	Urease kinetic
	mg/dl	44.0	37.4	50.6	
	mmol/l	7.32	6.22	8.42	BUN
	mg/dl	20.5	17.4	23.6	
Uric Acid (Urate)	mmol/l	0.316	0.275	0.357	Uricase peroxidase with ascorbate oxidase
	mg/dl	5.31	4.62	6.00	

%

ASSAYED BOVINE MULTI-SERA - LEVEL 2 (BOV ASY CONTROL 2)

Cat. No. AN1026 Lot No. 453SN Size: 20 x 5 ml Expiry: 2019-09

MEAN OF ALL INSTRUMENTS**Range**

Analyte	unit	Target	low	high	methods
Alpha-HBDH	U/l	134	106	162	Oxobutyrate < 10 mmol/l 37°C
	U/l	101	80	122	Oxobutyrate < 10 mmol/l 30°C
	U/l	76	60	92	Oxobutyrate < 10 mmol/l 25°C
Acid Phosphatase (non-prostatic)	U/l	5.14	3.44	6.84	1-Naphthyl Phosphate substrate Kinetic 37°C
	U/l	4.71	3.16	6.26	1-Naphthyl Phosphate, Kinetic with Pentane diol Activation 37°C
Acid Phosphatase (Prostatic)	U/l	11.4	7.64	15.2	1-Naphthyl Phosphate substrate Kinetic 37°C
	U/l	19.4	13.0	25.8	1-Naphthyl Phosphate, Kinetic with Pentane diol Activation 37°C
Acid Phosphatase (Total)	U/l	16.5	11.1	21.9	1-Naphthyl Phosphate substrate Kinetic 37°C
	U/l	24.1	16.1	32.1	1-Naphthyl Phosphate, Kinetic with Pentane diol Activation 37°C
Albumin	g/l	40.7	34.6	46.8	Bromocresol Green
	g/dl	4.07	3.46	4.68	
Alkaline Phosphatase	U/l	103	88	118	p-Nitrophenylphosphate AMP 37°C
	U/l	80	69	91	p-Nitrophenylphosphate AMP 30°C
	U/l	66	56	76	p-Nitrophenylphosphate AMP 25°C
	U/l	171	145	197	Diethanolamine buffer DEA 37°C
	U/l	133	113	153	Diethanolamine buffer DEA 30°C
	U/l	109	93	125	Diethanolamine buffer DEA 25°C
ALT (GPT)	U/l	66	53	79	Tris buffer with P5P 37°C
	U/l	49	39	59	Tris buffer with P5P 30°C
	U/l	37	30	44	Tris buffer with P5P 25°C
	U/l	55	44	66	Tris buffer without P5P 37°C
	U/l	41	33	49	Tris buffer without P5P 30°C
	U/l	31	25	37	Tris buffer without P5P 25°C
Amylase Total	U/l	183	156	210	Randox - Ethylidene pNPG7 37°C
	U/l	132	112	152	Randox liquid stable pNPG7 37°C
	U/l	115	98	132	Roche liquid stable pNPG7 37°C
AST (GOT)	U/l	49	39	59	Tris buffer with P5P 37°C
	U/l	33	26	40	Tris buffer with P5P 30°C
	U/l	23	19	27	Tris buffer with P5P 25°C
	U/l	44	35	53	Tris buffer without P5P 37°C
	U/l	30	24	36	Tris buffer without P5P 30°C
	U/l	21	17	25	Tris buffer without P5P 25°C
Bicarbonate	mmol/l	22.0	17.4	26.6	Enzymatic
Bile Acids	µmol/l	32.1	25.7	38.5	4th Generation Colorimetric
	µmol/l	24.8	19.8	29.8	5th Generation Colorimetric
Bilirubin Direct	µmol/l	21.3	16.8	25.8	Diazo with Sulphanilic Acid
	mg/dl	1.25	0.983	1.52	
	µmol/l	20.9	16.5	25.3	Vanadate Oxidation
	mg/dl	1.22	0.970	1.48	
	µmol/l	14.3	11.3	17.3	Modified Jendrassik
	mg/dl	0.840	0.660	1.01	
Bilirubin Total	µmol/l	27.9	22.0	33.8	Diazo with Sulphanilic Acid
	mg/dl	1.63	1.29	1.97	

%

ASSAYED BOVINE MULTI-SERA - LEVEL 2 (BOV ASY CONTROL 2)

Cat. No. AN1026 Lot No. 453SN Size: 20 x 5 ml Expiry: 2019-09

MEAN OF ALL INSTRUMENTS

Range

Analyte	unit	Target	low	high	methods
Bilirubin Total	µmol/l	26.9	21.3	32.5	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.57	1.25	1.89	
	µmol/l	32.2	25.4	39.0	Diazo with Dichloroaniline (DCA)
	mg/dl	1.88	1.49	2.28	
	µmol/l	28.1	22.2	34.0	Vanadate Oxidation
	mg/dl	1.64	1.30	1.99	
Calcium	µmol/l	32.9	26.0	39.8	Modified Jendrassik
	mg/dl	1.92	1.52	2.33	
	mmol/l	2.39	2.15	2.63	Arsenazo III
	mg/dl	9.58	8.62	10.5	
	mmol/l	2.36	2.12	2.60	Cresolphthalein complexone
	mg/dl	9.46	8.50	10.4	
Chloride	mmol/l	98.5	90.6	106	Colorimetric
	mmol/l	95.5	87.9	103	ISE indirect
	mmol/l	96.1	88.4	104	ISE direct
Cholesterol	mmol/l	5.04	4.38	5.70	Cholesterol Oxidase
	mg/dl	195	169	221	
CK Total	U/l	183	150	216	CK-NAC substrate start (DGKC) 37°C
	U/l	115	94	136	CK-NAC substrate start (DGKC) 30°C
	U/l	78	64	92	CK-NAC substrate start (DGKC) 25°C
	U/l	184	151	217	CK-NAC (IFCC) 37°C
	U/l	115	95	135	CK-NAC (IFCC) 30°C
	U/l	78	64	92	CK-NAC (IFCC) 25°C
Copper	µmol/l	21.6	17.3	25.9	Colorimetric
	µg/dl	137	110	164	
Cortisol	nmol/l	241	181	301	Roche Cobas E411
	µg/dl	8.68	6.52	10.8	
Creatinine	µmol/l	148	118	178	Alkaline picrate no deproteinization
	mg/dl	1.67	1.33	2.01	
	µmol/l	145	116	174	Randox Enzymatic UV method
	mg/dl	1.64	1.31	1.97	
	µmol/l	162	130	194	Jaffe rate blanked
	mg/dl	1.83	1.47	2.19	
	µmol/l	138	110	166	Jaffe rate blanked comp. (-26 µmol/l)
	mg/dl	1.56	1.24	1.88	
D-3-Hydroxybutyrate	mmol/l	1.55	1.32	1.78	Tris buffer 100mmol pH 8.5
Free T4	pmol/l	36.6	27.5	45.8	Roche Cobas E411
	ng/dl	2.85	2.15	3.57	
	pg/ml	28.5	21.5	35.7	
Gamma-GT	U/l	52	44	60	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	41	35	47	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30°C
	U/l	32	27	37	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25°C
	U/l	55	47	63	Randox Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C
	U/l	43	37	50	Randox Gamma glutamyl.-3-carboxy-4-nitroanilide 30°C
	U/l	34	29	39	Randox Gamma glutamyl.-3-carboxy-4-nitroanilide 25°C

%

ASSAYED BOVINE MULTI-SERA - LEVEL 2 (BOV ASY CONTROL 2)

Cat. No. AN1026 Lot No. 453SN Size: 20 x 5 ml Expiry: 2019-09

MEAN OF ALL INSTRUMENTS**Range**

Analyte	unit	Target	low	high	methods
GLDH	U/l	16	13	19	Triethanolamine buffer 50 mmol 37°C
	U/l	12	10	14	Triethanolamine buffer 50 mmol 30°C
	U/l	10	8	12	Triethanolamine buffer 50 mmol 25°C
Glucose	mmol/l	5.87	4.99	6.75	Hexokinase
	mg/dl	106	89.9	122	
	mmol/l	6.02	5.12	6.92	Glucose oxidase
	mg/dl	108	92.3	124	
Iron	µmol/l	25.6	21.0	30.2	Colorimetric without ppt.
	µg/dl	143	117	169	
Lactate	mmol/l	3.87	3.17	4.57	Colorimetric Lactate Oxidase
	mg/dl	34.9	28.6	41.2	
LD (LDH)	U/l	222	189	255	P->L German methods 37°C
	U/l	160	136	184	P->L German methods 30°C
	U/l	113	96	130	P->L German methods 25°C
	U/l	112	95	129	L->P IFCC 37°C
	U/l	81	69	93	L->P IFCC 30°C
	U/l	57	48	65	L->P IFCC 25°C
Lipase	U/l	36	29	43	Randox Colorimetric 37°C
	U/l	216	173	259	Randox Turbidimetric with colipase 37°C
Lithium	mmol/l	1.38	1.21	1.55	Randox Colorimetric
	mg/dl	0.958	0.840	1.08	
Magnesium	mmol/l	0.881	0.775	0.987	Xylidyl Blue
	mg/dl	2.14	1.88	2.40	
NEFA	mmol/l	2.48	2.11	2.85	Colorimetric
Osmolality	mOsm/kg	327	262	392	Freezing point depression
Phosphate Inorganic	mmol/l	1.28	1.09	1.47	Phosphomolybdate UV
	mg/dl	3.97	3.38	4.56	
Potassium	mmol/l	4.61	4.24	4.98	Enzymatic
	mmol/l	4.54	4.18	4.90	ISE direct
	mmol/l	4.55	4.19	4.91	ISE indirect
Protein Total	g/l	57.6	46.1	69.1	Biuret reaction end point
	g/dl	5.76	4.61	6.91	
PSA Total	ng/ml = µg/l	9.97	7.48	12.5	Roche Cobas E411
Sodium	mmol/l	142	135	149	Enzymatic
	mmol/l	142	135	149	ISE direct
	mmol/l	142	135	149	ISE indirect
TIBC	µmol/l	45.1	35.6	54.6	Randox Direct
	µg/dl	252	199	305	
Total T3	nmol/l	1.91	1.43	2.39	Roche Cobas E411
	ng/ml	1.24	0.930	1.56	
	ng/dl	124	93.1	156	
Total T4	nmol/l	98.1	73.6	123	Roche Cobas E411
	µg/dl	7.65	5.74	9.59	
	ng/ml	76.5	57.4	95.9	
Triglycerides	mmol/l	1.13	0.949	1.31	Lipase/GPO-PAP no correction
	mg/dl	100	84.0	116	

%

ASSAYED BOVINE MULTI-SERA - LEVEL 2 (BOV ASY CONTROL 2)

Cat. No. AN1026 Lot No. 453SN Size: 20 x 5 ml Expiry: 2019-09

MEAN OF ALL INSTRUMENTS

Range

Analyte	unit	Target	low	high	methods
Urea	mmol/l	6.77	5.75	7.79	Urease kinetic
	mg/dl	40.7	34.6	46.8	
	mmol/l	9.10	7.74	10.5	Urease hypochlorite
	mg/dl	54.7	46.5	62.9	
	mmol/l	6.22	5.29	7.15	Urease Berthelot
	mg/dl	37.4	31.8	43.0	
Uric Acid (Urate)	mmol/l	6.77	5.75	7.79	BUN
	mg/dl	19.0	16.2	21.8	
	mmol/l	0.328	0.285	0.371	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	5.51	4.79	6.23	
	mmol/l	0.307	0.267	0.347	Uricase peroxidase no ascorbate oxidase
	mg/dl	5.16	4.49	5.83	
Vitamin B12	pmol/l	0.332	0.289	0.375	Uricase peroxidase with ascorbate oxidase
	pg/ml	5.58	4.86	6.30	
Zinc	pmol/l	172	138	206	Roche Cobas E411
	pg/ml	233	187	279	
Zinc	µmol/l	16.9	13.5	20.3	Colorimetric with deproteinisation
	µg/dl	110	88.2	132	

ASSAYED BOVINE MULTI-SERA - LEVEL 2 (BOV ASY CONTROL 2)

Cat. No. AN1026 Lot No. 453SN Size: 20 x 5 ml Expiry: 2019-09

RX SERIES®

Range

Analyte	unit	Target	low	high	methods
Albumin	g/l	40.3	34.3	46.3	Bromocresol Green
	g/dl	4.03	3.43	4.63	
Alkaline Phosphatase	U/l	171	145	197	Diethanolamine buffer DEA 37°C
	U/l	103	88	118	AMP optimised to IFCC 37°C
ALT (GPT)	U/l	59	47	71	Tris buffer without P5P 37°C
Amylase Total	U/l	132	112	152	Randox liquid stable pNPG7 37°C
AST (GOT)	U/l	45	36	54	Tris buffer without P5P 37°C
Bicarbonate	mmol/l	21.3	16.9	25.7	Enzymatic
Bile Acids	µmol/l	25.6	20.5	30.7	5th Generation Colorimetric
Bilirubin Direct	µmol/l	21.8	17.2	26.4	Diazo with Sulphanilic Acid
	mg/dl	1.28	1.01	1.55	
	µmol/l	20.7	16.4	25.0	Vanadate Oxidation
	mg/dl	1.21	0.960	1.46	
Bilirubin Total	µmol/l	29.9	23.6	36.2	Diazo with Sulphanilic Acid
	mg/dl	1.75	1.38	2.12	
	µmol/l	28.3	22.4	34.2	Vanadate Oxidation
	mg/dl	1.66	1.31	2.00	
Calcium	mmol/l	2.41	2.17	2.65	Arsenazo III
	mg/dl	9.66	8.70	10.6	
Chloride	mmol/l	96.1	88.4	104	ISE direct
Cholesterol	mmol/l	5.28	4.59	5.97	Cholesterol Oxidase
	mg/dl	204	177	231	
CK Total	U/l	183	150	216	CK-NAC substrate start (DGKC) 37°C
	U/l	190	156	224	CK-NAC (IFCC) 37°C
Creatinine	µmol/l	147	118	176	Alkaline picrate no deproteinization
	mg/dl	1.66	1.33	1.99	
	µmol/l	145	116	174	Randox Enzymatic UV method
	mg/dl	1.64	1.31	1.97	
Gamma-GT	U/l	55	47	63	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
Glucose	mmol/l	6.08	5.17	6.99	Hexokinase
	mg/dl	110	93.2	127	
	mmol/l	6.32	5.37	7.27	Glucose oxidase
	mg/dl	114	96.8	131	
Iron	µmol/l	25.6	21.0	30.2	Colorimetric without ppt.
	µg/dl	143	117	169	
Lactate	mmol/l	3.87	3.17	4.57	Colorimetric Lactate Oxidase
	mg/dl	34.9	28.6	41.2	
LD (LDH)	U/l	229	195	263	P->L German methods 37°C
	U/l	114	97	131	L->P IFCC 37°C
Lipase	U/l	36	29	43	Randox Colorimetric 37°C
Lithium	mmol/l	1.28	1.13	1.43	Colorimetric
	mg/dl	0.889	0.785	0.993	

ASSAYED BOVINE MULTI-SERA - LEVEL 2 (BOV ASY CONTROL 2)

Cat. No. AN1026 Lot No. 453SN Size: 20 x 5 ml Expiry: 2019-09

RX SERIES®

Range

Analyte	unit	Target	low	high	methods
Magnesium	mmol/l	0.880	0.774	0.986	Xylidyl Blue
	mg/dl	2.14	1.88	2.40	
Phosphate Inorganic	mmol/l	1.28	1.09	1.47	Phosphomolybdate UV
	mg/dl	3.97	3.38	4.56	
Potassium	mmol/l	4.63	4.26	5.00	Enzymatic
	mmol/l	4.54	4.18	4.90	ISE direct
Protein Total	g/l	58.9	47.1	70.7	Biuret reaction end point
	g/dl	5.89	4.71	7.07	
Sodium	mmol/l	141	134	148	Enzymatic
	mmol/l	142	135	149	ISE direct
TIBC	μmol/l	45.1	35.6	54.6	Direct Colorimetric
	μg/dl	252	199	305	
Triglycerides	mmol/l	1.13	0.949	1.31	Lipase/GPO-PAP no correction
	mg/dl	100	84.0	116	
Urea	mmol/l	6.31	5.36	7.26	Urease kinetic
	mg/dl	37.9	32.2	43.6	
	mmol/l	6.31	5.36	7.26	BUN
	mg/dl	17.7	15.0	20.4	
Uric Acid (Urate)	mmol/l	0.307	0.270	0.350	Uricase peroxidase no ascorbate oxidase
	mg/dl	5.16	4.54	5.88	
	mmol/l	0.336	0.290	0.380	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	5.64	4.87	6.38	

ASSAYED BOVINE MULTI-SERA - LEVEL 2 (BOV ASY CONTROL 2)

Cat. No. AN1026 Lot No. 453SN Size: 20 x 5 ml Expiry: 2019-09

SIEMENS ADVIA 1200/1650/1800/2400®

Range

Analyte	unit	Target	low	high	methods
Albumin	g/l	39.8	33.8	45.8	Bromocresol Green
	g/dl	3.98	3.38	4.58	
Alkaline Phosphatase	U/l	105	89	121	p-Nitrophenylphosphate AMP 37°C
	U/l	149	127	171	Diethanolamine buffer DEA 37°C
ALT (GPT)	U/l	54	43	65	Tris buffer without P5P 37°C
Amylase Total	U/l	126	107	145	pNP Maltotrioxide substrates 37°C
AST (GOT)	U/l	45	36	54	Tris buffer without P5P 37°C
Bilirubin Direct	µmol/l	21.1	16.7	25.5	Vanadate Oxidation
	mg/dl	1.23	0.980	1.49	
Bilirubin Total	µmol/l	27.8	22.0	33.6	Vanadate Oxidation
	mg/dl	1.63	1.29	1.97	
Calcium	mmol/l	2.28	2.05	2.51	Cresolphthalein complexone
	mg/dl	9.14	8.22	10.1	
	mmol/l	2.40	2.16	2.64	Arsenazo III
	mg/dl	9.62	8.66	10.6	
Cholesterol	mmol/l	4.85	4.22	5.48	Cholesterol Oxidase
	mg/dl	187	163	211	
CK Total	U/l	163	134	192	CK-NAC serum start (DGKC) 37°C
Creatinine	µmol/l	138	110	166	Jaffe rate blanked comp. (-26 µmol/l)
	mg/dl	1.56	1.24	1.88	
Gamma-GT	U/l	52	44	60	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
Glucose	mmol/l	5.63	4.79	6.47	Glucose oxidase
	mg/dl	101	86.3	116	
	mmol/l	5.61	4.77	6.45	Hexokinase
	mg/dl	101	86.0	116	
Iron	µmol/l	25.2	20.7	29.7	Colorimetric without ppt.
	µg/dl	141	116	166	
LD (LDH)	U/l	111	94	128	L->P 37°C
	U/l	215	183	247	P->L German methods 37°C
Magnesium	mmol/l	0.842	0.741	0.943	Xylidyl Blue
	mg/dl	2.05	1.80	2.30	
Phosphate Inorganic	mmol/l	1.31	1.11	1.51	Phosphomolybdate UV
	mg/dl	4.06	3.44	4.68	
Protein Total	g/l	57.6	46.1	69.1	Biuret reaction end point
	g/dl	5.76	4.61	6.91	
Triglycerides	mmol/l	1.12	0.941	1.30	Lipase/GPO-PAP no correction
	mg/dl	99.1	83.3	115	
Urea	mmol/l	6.69	5.69	7.69	Urease kinetic
	mg/dl	40.2	34.2	46.2	
	mmol/l	6.69	5.69	7.69	BUN
	mg/dl	18.8	16.0	21.6	
Uric Acid (Urate)	mmol/l	0.319	0.278	0.360	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	5.36	4.67	6.05	