

CALIBRATION SERUM - LEVEL 2 (CAL 2)

CAT. NO. CAL 2350 **GTIN:** 05055273200959 **SIZE:** 20 x 5ml
LOT NO. 1528UN **EXPIRY:** 2023-06-28

INTENDED USE

For use as a Calibrator in clinical chemistry assays. RANDOX Calibration Sera are based on lyophilised human serum. The concentrations and activities are suitable for calibration of clinical chemistry assays on a wide range of automatic analysers. Constituent concentrations are available at 2 levels.

SAFETY PRECAUTIONS AND WARNINGS

Human source material, from which this product has been derived, 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. For *in vitro* diagnostic use only.

STORAGE AND STABILITY

Unreconstituted serum is stable up to the expiry date shown on the side of each individual bottle. Once reconstituted, the components of the Calibration Sera are stable for 8 hours at +15°C to +25°C, 7 days at +2°C to +8°C, and 28 days at -20°C when frozen once (see Limitations).

PREPARATION FOR USE

Serum must only be reconstituted using the following procedure:

1. Open the vial carefully, avoiding any loss of material.
2. Reconstitute by pipetting exactly 5ml of distilled water at +15°C to +25°C, into the vial.
3. Replace the rubber stopper and leave to stand for 30 minutes out of bright light before use.
4. Swirl gently several times during the reconstitution period to ensure that the contents are completely dissolved.
5. Prior to use, mix the contents by inverting the vial. Do not shake the vial, as the formation of foam should be avoided.
 Ensure that no lyophilised material remains unreconstituted.
6. The serum is then ready for use with either a manual test or with an automated instrument.

MATERIALS PROVIDED

Calibration Serum - Level 2
 Cat No. CAL 2350 20 x 5ml

MATERIALS REQUIRED BUT NOT PROVIDED

Calibrated pipette, double deionised water.

LIMITATIONS

After reconstitution, Bicarbonate is stable for 8 hours in the closed bottle and 1 hour in the open bottle.

For Total and Prostatic Acid Phosphatase, the material should be stabilised by adding 1 drop (25µl - 30µl) of 0.7M Acetic acid solution to 1ml of the serum exactly 30 minutes after reconstitution. After stabilisation, Total & Prostatic Acid Phosphatase are 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, it is stable for 1 day at +2°C to +8°C. Do not store at +15°C to +25°C. Do not freeze.

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

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

Due to the zinc content in some batches of rubber stoppers, the calibrator material should be aliquoted into polypropylene tubes and stored at +2°C to +8°C to ensure stable zinc levels throughout the stability period.

VALUE ASSIGNMENT

Each batch of serum is distributed to approximately 3000 laboratories worldwide and values are assigned by a consensus of results obtained by these laboratories. The Calibration values for each instrument have been determined in at least 10 independent laboratories. Values are verified against a master lot of calibrator, which is traceable to reference methods or reference materials. In some cases, values may be assigned at Randox Laboratories in comparison to a master lot of calibrator, which is traceable to reference methods or reference materials.

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.

NOTES

- ® All trademarks recognised.
- (1) Values established by reference laboratories officially recognised by the Federal Chamber of Physicians in Germany.
- (2) DGKC: German Society for Clinical Chemistry.
- (3) IFCC: International Federation of Clinical Chemistry.
- (4) SCE: Scandinavian Committee on Enzymes.

| The presence of a vertical bar in the margin indicates a technical update from the previous revision. |



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Dungloe, Donegal,
F94 TV06, Ireland

Rev. 02 Nov '21 ne

CALIBRATION SERUM LEVEL 2 (CAL 2)

Abbott Alinity/ Architect c/ci Systems® Lot. No. 1528UN Cat. No. CAL2350

Size 20 x 5ml Expiry 2023-06-28

Analyte	unit	Target	methods
Albumin	g/l	41.0	Bromocresol Green
	g/dl	4.10	
	g/l	42.5	Bromocresol Purple
	g/dl	4.25	
Alkaline Phosphatase	U/l	176	AMP optimised to IFCC 37°C
	U/l	172	AMP optimised to NVKC/SFBC 37°C
	U/l	173	AMP non-optimised 37°C
ALT (GPT)	U/l	38	Tris buffer without P5P 37°C
Amylase Pancreatic	U/l	67	Immunoinhibition EPS substrate 37°C
Amylase Total	U/l	96	Abbott Architect Non-IFCC Cal. 37°C
	U/l	108	Abbott Architect IFCC Cal. 37°C
AST (GOT)	U/l	34	Tris buffer without P5P 37°C
Bicarbonate	mmol/l	10.8	Enzymatic
Bile Acids	µmol/l	25.8	Enzymatic Colorimetric
Bilirubin Direct	µmol/l	19.6	Diazo with Sulphanilic Acid
	mg/dl	1.15	
	µmol/l	19.9	Diazo with Dichloroaniline (DCA)
	mg/dl	1.16	
Bilirubin Total	µmol/l	24.7	Diazo with Dichloroaniline (DCA)
	mg/dl	1.44	
	µmol/l	24.8	Diazo with Sulphanilic Acid
	mg/dl	1.45	
	µmol/l	24.7	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.44	
µmol/l	24.0	Diazonium ion	
mg/dl	1.40		
Calcium	mmol/l	2.19	Arsenazo III
	mg/dl	8.78	
Chloride	mmol/l	97.8	ISE indirect
Cholesterol	mmol/l	4.14	Cholesterol Oxidase
	mg/dl	160	
Cholinesterase	U/l	6997	Colorimetric Butyrylthiocholine 37°C
CK Total	U/l	199	CK-NAC serum start (DGKC) 37°C
	U/l	205	CK-NAC (IFCC) 37°C
Creatinine	µmol/l	133	Alkaline picrate no deproteinization
	mg/dl	1.50	
	µmol/l	131	Enzymatic UV method
	mg/dl	1.48	
	µmol/l	134	Creatinine PAP method
	mg/dl	1.51	

CALIBRATION SERUM LEVEL 2 (CAL 2)

Abbott Alinity/ Architect c/ci Systems® Lot. No. 1528UN Cat. No. CAL2350

Size 20 x 5ml Expiry 2023-06-28

Analyte	unit	Target	methods
Creatinine	µmol/l	135	Jaffe rate blanked
	mg/dl	1.52	
	µmol/l	131	IDMS traceable
	mg/dl	1.48	
gamma-GT	U/l	47	Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C
	U/l	46	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
Glucose	mmol/l	6.04	Hexokinase
	mg/dl	109	
	mmol/l	6.24	Glucose oxidase
	mg/dl	112	
Iron	µmol/l	19.9	Colorimetric with ppt.
	µg/dl	111	
	µmol/l	19.9	Colorimetric without ppt.
	µg/dl	111	
Lactate	mmol/l	1.57	Colorimetric Lactate Oxidase
	mg/dl	14.1	
LD (LDH)	U/l	193	L->P 37°C
	U/l	195	L->P IFCC 37°C
Lipase	U/l	32	Other Colorimetric 37°C
Lithium	mmol/l	1.07	Spectrophotometric
	mg/dl	0.743	
Magnesium	mmol/l	0.845	Arsenazo III
	mg/dl	2.05	
	mmol/l	0.864	Xylidyl Blue
	mg/dl	2.10	
Phosphate Inorganic	mmol/l	1.39	Phosphomolybdate enzymatic
	mg/dl	4.31	
	mmol/l	1.38	Phosphomolybdate UV
	mg/dl	4.28	
Potassium	mmol/l	3.96	ISE method - indirect
Protein Total	g/l	59.1	Biuret reaction end point
	g/dl	5.91	
	g/l	58.8	Biuret reaction kinetic
	g/dl	5.88	
Sodium	mmol/l	140	ISE method - indirect
TIBC	µmol/l	40.1	FE+UIBC(saturation with iron)
	µg/dl	224	
	µmol/l	47.2	Calculated from Transferrin
	µg/dl	264	
Triglycerides	mmol/l	0.990	Lipase/GPO-PAP no correction
	mg/dl	87.6	

CALIBRATION SERUM LEVEL 2 (CAL 2)

Abbott Alinity/ Architect c/ci Systems® Lot. No. 1528UN Cat. No. CAL2350

Size 20 x 5ml Expiry 2023-06-28

Analyte	unit	Target	methods
Triglycerides	mmol/l	0.992	L/G Kinase EP. no correction
	mg/dl	87.8	
	mmol/l	0.992	Lipase/Glycerol Dehydrogenase
	mg/dl	87.8	
UIBC	µmol/l	20.0	Direct Colorimetric
	µg/dl	112	
Urea	mmol/l	7.14	Urease end point
	mg/dl	42.9	
	mmol/l	7.17	Urease kinetic
	mg/dl	43.1	
Uric Acid (Urate)	mmol/l	7.17	BUN
	mg/dl	20.1	
	mmol/l	0.379	Uricase peroxidase with ascorbate oxidase
	mg/dl	6.37	
Uric Acid (Urate)	mmol/l	0.380	Uricase peroxidase no ascorbate oxidase
	mg/dl	6.38	
	mmol/l	0.377	Uricase Peroxidase with ascorbate oxidase @ 546nm
mg/dl	6.33		

CALIBRATION SERUM LEVEL 2 (CAL 2)

ABX Pentra 400® Lot. No. 1528UN Cat. No. CAL2350

Size 20 x 5ml Expiry 2023-06-28

Analyte	unit	Target	methods
Albumin	g/l	40.3	Bromocresol Green
	g/dl	4.03	
Alkaline Phosphatase	U/l	177	AMP optimised to IFCC 37°C
ALT (GPT)	U/l	45	Tris buffer without P5P 37°C
AST (GOT)	U/l	41	Tris buffer without P5P 37°C
Bilirubin Direct	µmol/l	21.8	Diazo with Dichloroaniline (DCA)
	mg/dl	1.28	
Bilirubin Total	µmol/l	27.3	Diazo with Dichloroaniline (DCA)
	mg/dl	1.60	
Calcium	mmol/l	2.23	Arsenazo III
	mg/dl	8.94	
Chloride	mmol/l	98.0	ISE direct
Cholesterol	mmol/l	4.14	Cholesterol Oxidase
	mg/dl	160	
Creatinine	µmol/l	128	Alkaline picrate no deproteinization
	mg/dl	1.45	
gamma-GT	U/l	45	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
Glucose	mmol/l	6.18	Glucose oxidase
	mg/dl	111	
Iron	µmol/l	19.0	Colorimetric without ppt.
	µg/dl	106	
Magnesium	mmol/l	0.836	Xylidyl Blue
	mg/dl	2.03	
Phosphate Inorganic	mmol/l	1.58	Phosphomolybdate UV
	mg/dl	4.90	
Potassium	mmol/l	3.78	ISE method - direct
Protein Total	g/l	59.4	Biuret reaction end point
	g/dl	5.94	
Sodium	mmol/l	139	ISE method - direct
Triglycerides	mmol/l	1.02	Lipase/GPO-PAP no correction
	mg/dl	90.3	
Urea	mmol/l	6.65	Urease end point
	mg/dl	40.0	
	mmol/l	6.85	Urease kinetic
	mg/dl	41.2	
Uric Acid (Urate)	mmol/l	0.355	Uricase peroxidase with ascorbate oxidase
	mg/dl	5.96	

CALIBRATION SERUM LEVEL 2 (CAL 2)

ABX Pentra 400® Lot. No. 1528UN Cat. No. CAL2350

Size 20 x 5ml Expiry 2023-06-28

Analyte	unit	Target	methods
Uric Acid (Urate)	mmol/l	0.379	Uricase peroxidase no ascorbate oxidase
	mg/dl	6.37	

CALIBRATION SERUM LEVEL 2 (CAL 2)

Beckman Coulter AU Series® Lot. No. 1528UN Cat. No. CAL2350

Size 20 x 5ml Expiry 2023-06-28

Analyte	unit	Target	methods
a-HBDH	U/l	190	Oxobutyrate < 10 mmol/l 37°C
Albumin	g/l	39.0	Bromocresol Green
	g/dl	3.90	
	g/l	43.4	Bromocresol Purple
	g/dl	4.34	
Alkaline Phosphatase	U/l	206	AMP optimised to IFCC 37°C
ALT (GPT)	U/l	39	Tris buffer without P5P 37°C
	U/l	37	Beckman (Extinction Coefficient) 37°C
Amylase Total	U/l	95	pNP Maltotrioxide substrates 37°C
	U/l	96	Beckman Coulter - blocked pNPG7 37°C
	U/l	85	Beckman CNPG3 (Extinction Coeff) 37°C
AST (GOT)	U/l	38	Tris buffer without P5P 37°C
	U/l	36	Beckman (Extinction Coefficient) 37°C
Bicarbonate	mmol/l	11.9	Enzymatic
Bilirubin Direct	µmol/l	20.0	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.17	
	µmol/l	19.8	Diazo with Dichloroaniline (DCA)
Bilirubin Total	mg/dl	1.16	Diazo with Dichloroaniline (DCA)
	µmol/l	29.1	
	mg/dl	1.70	Dichlorophenyl Diazonium (DPD)
	µmol/l	28.7	
	mg/dl	1.68	
µmol/l	28.2	DPD (Beckman AU)	
mg/dl	1.65		
Calcium	mmol/l	2.22	Cresolphthalein complexone
	mg/dl	8.90	
	mmol/l	2.22	Arsenazo III
mg/dl	8.90		
Chloride	mmol/l	95.2	ISE indirect
Cholesterol	mmol/l	4.14	Cholesterol Oxidase
	mg/dl	160	
Cholinesterase	U/l	5634	Colorimetric Butyrylthiocholine 37°C
CK Total	U/l	213	CK-NAC (IFCC) 37°C
	U/l	203	Beckman CK-NAC (Extinction Coeff) 37°C
Copper	µmol/l	14.1	Colorimetric
	µg/dl	89.6	
Creatinine	µmol/l	128	Alkaline picrate no deproteinization
	mg/dl	1.45	
	µmol/l	137	Enzymatic UV method
mg/dl	1.54		

CALIBRATION SERUM LEVEL 2 (CAL 2)

Beckman Coulter AU Series® Lot. No. 1528UN Cat. No. CAL2350

Size 20 x 5ml Expiry 2023-06-28

Analyte	unit	Target	methods
Creatinine	µmol/l	136	Creatinine PAP method
	mg/dl	1.54	
	µmol/l	128	Jaffe rate blanked
	mg/dl	1.45	
	µmol/l	141	Jaffe rate blanked compensated (-18 µmol/l)
mg/dl	1.59		
	µmol/l	126	IDMS traceable
	mg/dl	1.42	
gamma-GT	U/l	49	Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C
	U/l	42	Gamma glutamyl-4-nitroanilide 37°C
	U/l	48	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	48	Beckman Szasz (Extinction Coeff) 37°C
GLDH	U/l	19	Triethanolamine buffer 50 mmol 37°C
Glucose	mmol/l	6.04	Glucose dehydrogenase
	mg/dl	109	
	mmol/l	6.20	Hexokinase
	mg/dl	112	
	mmol/l	6.15	Glucose oxidase
	mg/dl	111	
Iron	µmol/l	19.7	Colorimetric with ppt.
	µg/dl	110	
	µmol/l	19.7	Colorimetric without ppt.
	µg/dl	110	
Lactate	mmol/l	1.47	Colorimetric Lactate Oxidase
	mg/dl	13.2	
LD (LDH)	U/l	194	L->P 37°C
	U/l	415	P->L Scandinavian & Dutch 37°C
	U/l	196	L->P IFCC 37°C
	U/l	185	L to P Beckman (Extinction Coeff) 37°C
Lipase	U/l	30	Other Colorimetric 37°C
	U/l	32	Roche Colorimetric 37°C
	U/l	43	Randox Colorimetric 37°C
Lithium	mmol/l	1.07	Spectrophotometric
	mg/dl	0.743	
Magnesium	mmol/l	0.886	Xylidyl Blue
	mg/dl	2.15	
Phosphate Inorganic	mmol/l	1.39	Phosphomolybdate UV
	mg/dl	4.31	
Potassium	mmol/l	3.93	ISE method - indirect
Protein Total	g/l	57.2	Biuret reaction end point
	g/dl	5.72	
	g/l	56.8	Biuret reaction kinetic
	g/dl	5.68	

CALIBRATION SERUM LEVEL 2 (CAL 2)

Beckman Coulter AU Series® Lot. No. 1528UN Cat. No. CAL2350

Size 20 x 5ml Expiry 2023-06-28

Analyte	unit	Target	methods
Sodium	mmol/l	140	ISE method - indirect
TIBC	µmol/l	44.0	FE+UIBC(saturation with iron)
	µg/dl	246	
Triglycerides	mmol/l	1.02	Lipase/GPO-PAP no correction
	mg/dl	90.3	
	mmol/l	1.03	L/G Kinase EP. no correction
	mg/dl	91.2	
UIBC	µmol/l	25.0	Direct Colorimetric
	µg/dl	140	
Urea	mmol/l	7.40	Urease end point
	mg/dl	44.5	
	mmol/l	7.45	Urease kinetic
	mg/dl	44.8	
	mmol/l	7.45	BUN
	mg/dl	20.9	
Uric Acid (Urate)	mmol/l	0.385	Uricase peroxidase with ascorbate oxidase
	mg/dl	6.47	
	mmol/l	0.384	Uricase peroxidase no ascorbate oxidase
	mg/dl	6.45	
Zinc	µmol/l	25.3	Colorimetric with deproteinisation
	µg/dl	165	

CALIBRATION SERUM LEVEL 2 (CAL 2)

Beckman CX4/5/7/9/LX20® Lot. No. 1528UN Cat. No. CAL2350

Size 20 x 5ml Expiry 2023-06-28

Analyte	unit	Target	methods
Albumin	g/l	43.7	Bromocresol Purple
	g/dl	4.37	
Alkaline Phosphatase	U/l	186	p-Nitrophenylphosphate AMP 37°C
ALT (GPT)	U/l	37	Tris buffer without P5P 37°C
Amylase Total	U/l	96	Beckman Synchron AMY7 37°C
AST (GOT)	U/l	34	Tris buffer without P5P 37°C
Bicarbonate	mmol/l	11.6	Differential rate pH change
Bilirubin Total	µmol/l	29.8	Diazo with Sulphanilic Acid
	mg/dl	1.74	
Calcium	mmol/l	2.09	Ion selective electrode
	mg/dl	8.38	
Chloride	mmol/l	97.3	ISE indirect
Cholesterol	mmol/l	4.01	Cholesterol Oxidase
	mg/dl	155	
CK Total	U/l	221	Monothioglycerol 37°C
Creatinine	µmol/l	132	IDMS traceable
	mg/dl	1.49	
gamma-GT	U/l	39	Gamma glutamyl-4-nitroanilide 37°C
Glucose	mmol/l	6.06	Hexokinase
	mg/dl	109	
	mmol/l	5.96	Glucose oxidase
	mg/dl	107	
Iron	µmol/l	18.2	Colorimetric without ppt.
	µg/dl	102	
LD (LDH)	U/l	161	L->P 37°C
Magnesium	mmol/l	0.887	Calmagite
	mg/dl	2.16	
Phosphate Inorganic	mmol/l	1.43	Phosphomolybdate UV
	mg/dl	4.43	
Potassium	mmol/l	3.86	ISE method - indirect
Protein Total	g/l	59.4	Biuret reaction end point
	g/dl	5.94	
	g/l	56.8	Biuret reaction kinetic
	g/dl	5.68	
Sodium	mmol/l	139	ISE method - indirect
Triglycerides	mmol/l	1.06	L/G Kinase EP. no correction
	mg/dl	93.8	
Urea	mmol/l	7.72	Urease kinetic
	mg/dl	46.4	

CALIBRATION SERUM LEVEL 2 (CAL 2)

Beckman CX4/5/7/9/LX20® Lot. No. 1528UN Cat. No. CAL2350

Size 20 x 5ml Expiry 2023-06-28

Analyte	unit	Target	methods
Urea	mmol/l	7.72	BUN
	mg/dl	21.7	
Uric Acid (Urate)	mmol/l	0.380	Uricase peroxidase no ascorbate oxidase
	mg/dl	6.38	

CALIBRATION SERUM LEVEL 2 (CAL 2)

Beckman DxC600/800® Lot. No. 1528UN Cat. No. CAL2350

Size 20 x 5ml Expiry 2023-06-28

Analyte	unit	Target	methods
Albumin	g/l	43.5	Bromocresol Purple
	g/dl	4.35	
Alkaline Phosphatase	U/l	186	AMP optimised to IFCC 37°C
	U/l	186	AMP non-optimised 37°C
ALT (GPT)	U/l	37	Tris buffer without P5P 37°C
	U/l	37	Tris buffer SCE 37°C
Amylase Total	U/l	95	Beckman Synchron AMY7 37°C
AST (GOT)	U/l	34	Tris buffer without P5P 37°C
	U/l	34	Tris buffer SCE 37°C
Bicarbonate	mmol/l	11.5	Differential rate pH change
Bilirubin Direct	µmol/l	14.5	Diazo with Sulphanilic Acid
	mg/dl	0.848	
Bilirubin Total	µmol/l	29.4	Diazo with Sulphanilic Acid
	mg/dl	1.72	
Calcium	mmol/l	2.11	Ion selective electrode
	mg/dl	8.46	
Chloride	mmol/l	96.8	ISE indirect
Cholesterol	mmol/l	3.99	Cholesterol Oxidase
	mg/dl	154	
CK Total	U/l	216	Monothioglycerol 37°C
	U/l	213	Creatinine phosphate substrate Start 37°C
Creatinine	µmol/l	129	Alkaline picrate no deproteinization
	mg/dl	1.46	
	µmol/l	131	Jaffe rate blanked
	mg/dl	1.48	
µmol/l	132	IDMS traceable	
mg/dl	1.49		
gamma-GT	U/l	39	Gamma glutamyl-4-nitroanilide 37°C
Glucose	mmol/l	6.03	Hexokinase
	mg/dl	109	
	mmol/l	5.93	Oxygen electrode
	mg/dl	107	
mmol/l	5.94	Glucose oxidase	
mg/dl	107		
Iron	µmol/l	18.3	Colorimetric without ppt.
	µg/dl	102	
Lactate	mmol/l	1.50	Colorimetric Lactate Oxidase
	mg/dl	13.5	
LD (LDH)	U/l	160	L->P 37°C

CALIBRATION SERUM LEVEL 2 (CAL 2)

Beckman DxC600/800® Lot. No. 1528UN Cat. No. CAL2350

Size 20 x 5ml Expiry 2023-06-28

Analyte	unit	Target	methods
LD (LDH)	U/l	515	Pyruvate 1.4 mM - Beckman LD-P 37°C
	U/l	156	L->P IFCC 37°C
Lipase	U/l	36	Other Colorimetric 37°C
Magnesium	mmol/l	0.885	Calmagite
	mg/dl	2.15	
Phosphate Inorganic	mmol/l	1.41	Phosphomolybdate enzymatic
	mg/dl	4.37	
	mmol/l	1.42	Phosphomolybdate UV
	mg/dl	4.40	
Potassium	mmol/l	3.86	ISE method - indirect
Protein Total	g/l	59.2	Biuret reaction end point
	g/dl	5.92	
	g/l	56.6	Biuret reaction kinetic
	g/dl	5.66	
Sodium	mmol/l	139	ISE method - indirect
Triglycerides	mmol/l	1.03	Lipase/GPO-PAP no correction
	mg/dl	91.2	
	mmol/l	1.03	L/G Kinase EP. no correction
	mg/dl	91.2	
Urea	mmol/l	7.55	Urease end point
	mg/dl	45.4	
	mmol/l	7.72	Urease kinetic
	mg/dl	46.4	
	mmol/l	7.72	BUN
	mg/dl	21.7	
Uric Acid (Urate)	mmol/l	0.376	Uricase peroxidase no ascorbate oxidase
	mg/dl	6.32	

CALIBRATION SERUM LEVEL 2 (CAL 2)

BIOSYSTEMS A15 Lot. No. 1528UN Cat. No. CAL2350

Size 20 x 5ml Expiry 2023-06-28

Analyte	unit	Target	methods
Albumin	g/l	40.8	Bromocresol Green
	g/dl	4.08	
Alkaline Phosphatase	U/l	184	AMP optimised to IFCC 37°C
	U/l	143	AMP optimised to IFCC 30°C
	U/l	118	AMP optimised to IFCC 25°C
ALT (GPT)	U/l	41	Tris buffer without P5P 37°C
	U/l	30	Tris buffer without P5P 30°C
	U/l	23	Tris buffer without P5P 25°C
AST (GOT)	U/l	37	Tris buffer without P5P 37°C
	U/l	25	Tris buffer without P5P 30°C
	U/l	18	Tris buffer without P5P 25°C
Calcium	mmol/l	2.18	Arsenazo III
	mg/dl	8.74	
Cholesterol	mmol/l	4.18	Cholesterol Oxidase
	mg/dl	161	
Creatinine	µmol/l	134	Alkaline picrate no deproteinization
	mg/dl	1.51	
Glucose	mmol/l	6.33	Glucose oxidase
	mg/dl	114	
Protein Total	g/l	59.5	Biuret reaction end point
	g/dl	5.95	
Triglycerides	mmol/l	1.02	Lipase/GPO-PAP no correction
	mg/dl	90.3	
Urea	mmol/l	7.13	Urease kinetic
	mg/dl	42.9	
	mmol/l	7.13	BUN
Uric Acid (Urate)	mmol/l	0.380	Uricase peroxidase with ascorbate oxidase
	mg/dl	6.38	

CALIBRATION SERUM LEVEL 2 (CAL 2)

Biotechnica/Wiener BT and CB Series Lot. No. 1528UN Cat. No. CAL2350

Size 20 x 5ml Expiry 2023-06-28

Analyte	unit	Target	methods
Albumin	g/l	39.2	Bromocresol Green
	g/dl	3.92	
Alkaline Phosphatase	U/l	182	AMP optimised to IFCC 37°C
	U/l	142	AMP optimised to IFCC 30°C
	U/l	116	AMP optimised to IFCC 25°C
ALT (GPT)	U/l	38	Tris buffer without P5P 37°C
	U/l	28	Tris buffer without P5P 30°C
	U/l	21	Tris buffer without P5P 25°C
AST (GOT)	U/l	36	Tris buffer without P5P 37°C
	U/l	24	Tris buffer without P5P 30°C
	U/l	17	Tris buffer without P5P 25°C
Bilirubin Total	µmol/l	23.9	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.40	
Calcium	mmol/l	2.27	Arsenazo III
	mg/dl	9.10	
Cholesterol	mmol/l	4.12	Cholesterol Oxidase
	mg/dl	159	
CK Total	U/l	210	CK-NAC (IFCC) 37°C
	U/l	131	CK-NAC (IFCC) 30°C
	U/l	89	CK-NAC (IFCC) 25°C
Creatinine	µmol/l	119	Alkaline picrate no deproteinization
	mg/dl	1.34	
	µmol/l	135	Creatinine PAP method
	mg/dl	1.53	
µmol/l	159	Jaffe rate blanked comp. (-26 µmol/l)	
mg/dl	1.80		
gamma-GT	U/l	48	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	38	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30°C
	U/l	30	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25°C
Glucose	mmol/l	6.13	Glucose oxidase
	mg/dl	111	
Phosphate Inorganic	mmol/l	1.52	Phosphomolybdate UV
	mg/dl	4.71	
Protein Total	g/l	57.7	Biuret reaction end point
	g/dl	5.77	
Triglycerides	mmol/l	0.960	Lipase/GPO-PAP no correction
	mg/dl	85.0	
Urea	mmol/l	7.08	Urease kinetic
	mg/dl	42.6	

CALIBRATION SERUM LEVEL 2 (CAL 2)

Biotechnica/Wiener BT and CB Series Lot. No. 1528UN Cat. No. CAL2350

Size 20 x 5ml Expiry 2023-06-28

Analyte	unit	Target	methods
Urea	mmol/l	7.08	BUN
	mg/dl	19.9	
Uric Acid (Urate)	mmol/l	0.371	Uricase peroxidase no ascorbate oxidase
	mg/dl	6.23	

CALIBRATION SERUM LEVEL 2 (CAL 2)

COBAS INTEGRA® Lot. No. 1528UN Cat. No. CAL2350

Size 20 x 5ml Expiry 2023-06-28

Analyte	unit	Target	methods
Albumin	g/l	41.9	Bromocresol Green
	g/dl	4.19	
	g/l	42.1	Bromocresol Purple
	g/dl	4.21	
	g/l	38.8	Turbidimetric Assays
	g/dl	3.88	
Alkaline Phosphatase	U/l	153	Roche Integra AMP buffer 37°C
	U/l	119	Roche Integra AMP buffer 30°C
	U/l	98	Roche Integra AMP buffer 25°C
	U/l	141	AMP optimised to IFCC 37°C
	U/l	110	AMP optimised to IFCC 30°C
	U/l	90	AMP optimised to IFCC 25°C
ALT (GPT)	U/l	34	Tris buffer without P5P 37°C
	U/l	25	Tris buffer without P5P 30°C
	U/l	19	Tris buffer without P5P 25°C
Amylase Pancreatic	U/l	69	Roche EPS Liquid 37°C
Amylase Total	U/l	92	Roche Integra 2-chloro-pNPG7 37°C
	U/l	92	Roche liquid stable pNPG7 37°C
AST (GOT)	U/l	33	Tris buffer without P5P 37°C
	U/l	22	Tris buffer without P5P 30°C
	U/l	16	Tris buffer without P5P 25°C
Bicarbonate	mmol/l	12.0	Enzymatic
Bilirubin Direct	µmol/l	19.7	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.15	
	µmol/l	19.7	Diazo with Sulphanilic Acid
	mg/dl	1.15	
	µmol/l	19.3	Roche JG factored
	mg/dl	1.13	
Bilirubin Total	µmol/l	23.8	Diazo with Sulphanilic Acid
	mg/dl	1.39	
	µmol/l	23.8	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.39	
	µmol/l	23.9	Diazonium ion
	mg/dl	1.40	
Calcium	mmol/l	2.18	Cresolphthalein complexone
	mg/dl	8.74	
	mmol/l	2.17	NM-BAPTA
	mg/dl	8.70	
Chloride	mmol/l	96.3	ISE indirect

CALIBRATION SERUM LEVEL 2 (CAL 2)

COBAS INTEGRA® Lot. No. 1528UN Cat. No. CAL2350

Size 20 x 5ml Expiry 2023-06-28

Analyte	unit	Target	methods
Cholesterol	mmol/l	4.07	Cholesterol Oxidase
	mg/dl	157	
CK Total	U/l	200	CK-NAC (IFCC) 37°C
	U/l	125	CK-NAC (IFCC) 30°C
	U/l	85	CK-NAC (IFCC) 25°C
Creatinine	µmol/l	130	Alkaline picrate no deproteinization
	mg/dl	1.47	
	µmol/l	132	Roche Creatinine Plus
	mg/dl	1.50	
	µmol/l	154	Jaffe rate blanked comp. (-26 µmol/l)
	mg/dl	1.74	
gamma-GT	U/l	42	Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C
	U/l	33	Gamma glutamyl.-3-carboxy-4-nitroanilide 30°C
	U/l	26	Gamma glutamyl.-3-carboxy-4-nitroanilide 25°C
	U/l	48	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	38	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30°C
	U/l	30	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25°C
Glucose	mmol/l	6.24	Hexokinase
	mg/dl	112	
Iron	µmol/l	19.7	Colorimetric with ppt.
	µg/dl	110	
	µmol/l	19.4	Colorimetric without ppt.
	µg/dl	108	
Lactate	mmol/l	1.55	Colorimetric Lactate Oxidase
	mg/dl	14.0	
LD (LDH)	U/l	372	P->L German methods 37°C
	U/l	269	P->L German methods 30°C
	U/l	189	P->L German methods 25°C
	U/l	206	L->P IFCC 37°C
	U/l	149	L->P IFCC 30°C
	U/l	104	L->P IFCC 25°C
Lipase	U/l	32	Roche Colorimetric 37°C
Lithium	mmol/l	1.05	Ion selective electrode
	mg/dl	0.729	
Magnesium	mmol/l	0.894	Chlorphosphonazo III
	mg/dl	2.17	
Phosphate Inorganic	mmol/l	1.44	Phosphomolybdate enzymatic
	mg/dl	4.46	
	mmol/l	1.45	Phosphomolybdate UV
	mg/dl	4.50	
Potassium	mmol/l	3.95	ISE method - indirect

CALIBRATION SERUM LEVEL 2 (CAL 2)

COBAS INTEGRA® Lot. No. 1528UN Cat. No. CAL2350

Size 20 x 5ml Expiry 2023-06-28

Analyte	unit	Target	methods
Protein Total	g/l	54.8	Biuret reaction end point
	g/dl	5.48	
	g/l	55.2	Biuret reaction kinetic
	g/dl	5.52	
Sodium	mmol/l	139	ISE method - indirect
TIBC	µmol/l	39.8	FE+UIBC(saturation with iron)
	µg/dl	222	
Triglycerides	mmol/l	1.03	Lipase/GPO-PAP no correction
	mg/dl	91.2	
	mmol/l	1.04	Lipase/GPO-PAP 0.11mmol/l correction
	mg/dl	92.0	
	mmol/l	1.04	Lipase/Glycerol Dehydrogenase
	mg/dl	92.0	
UIBC	µmol/l	21.8	Direct Colorimetric
	µg/dl	122	
Urea	mmol/l	6.93	Urease kinetic
	mg/dl	41.6	
	mmol/l	6.93	BUN
	mg/dl	19.5	
Uric Acid (Urate)	mmol/l	0.388	Uricase peroxidase with ascorbate oxidase
	mg/dl	6.52	
	mmol/l	0.384	Uricase peroxidase no ascorbate oxidase
	mg/dl	6.45	
	mmol/l	0.384	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	6.45	

CALIBRATION SERUM LEVEL 2 (CAL 2)

HITACHI SERIES® Lot. No. 1528UN Cat. No. CAL2350

Size 20 x 5ml Expiry 2023-06-28

Analyte	unit	Target	methods
Acid Phosphatase (Total)	U/l	13.3	1-Naphthyl Phosphate substrate Kinetic 37°C
Albumin	g/l	41.3	Bromocresol Green
	g/dl	4.13	
Alkaline Phosphatase	U/l	190	Randox AMP 37°C
	U/l	148	Randox AMP 30°C
	U/l	121	Randox AMP 25°C
ALT (GPT)	U/l	36	Tris buffer without P5P 37°C
	U/l	27	Tris buffer without P5P 30°C
	U/l	20	Tris buffer without P5P 25°C
Amylase Pancreatic	U/l	79	Randox Liquid Ethylidene pNPG7 37°C
Amylase Total	U/l	98	Randox Liquid Ethylidene pNPG7 37°C
Bicarbonate	mmol/l	12.2	Enzymatic
Bile Acids	µmol/l	26.0	5th Generation Colorimetric
Calcium	mmol/l	2.20	Cresolphthalein complexone
	mg/dl	8.82	
Chloride	mmol/l	92.5	ISE indirect
Cholesterol	mmol/l	4.02	Cholesterol Oxidase
	mg/dl	155	
gamma-GT	U/l	47	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	37	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30°C
	U/l	29	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25°C
	U/l	51	Randox Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C
	U/l	40	Randox Gamma glutamyl.-3-carboxy-4-nitroanilide 30°C
	U/l	31	Randox Gamma glutamyl.-3-carboxy-4-nitroanilide 25°C
Glucose	mmol/l	6.30	Glucose oxidase
	mg/dl	114	
Phosphate Inorganic	mmol/l	1.38	Phosphomolybdate UV
	mg/dl	4.28	
Potassium	mmol/l	4.01	ISE method - indirect
Protein Total	g/l	57.1	Biuret reaction end point
	g/dl	5.71	
Sodium	mmol/l	141	ISE method - indirect
Triglycerides	mmol/l	1.03	Lipase/GPO-PAP no correction
	mg/dl	91.2	
Urea	mmol/l	7.44	Urease kinetic
	mg/dl	44.7	
	mmol/l	7.44	BUN
	mg/dl	20.9	

CALIBRATION SERUM LEVEL 2 (CAL 2)

Konelab 20/30/60®/Thermo Scientific Indiko Plus® Lot. No. 1528UN Cat. No. CAL2350

Size 20 x 5ml Expiry 2023-06-28

Analyte	unit	Target	methods
Albumin	g/l	39.3	Bromocresol Green
	g/dl	3.93	
Alkaline Phosphatase	U/l	291	Diethanolamine buffer DEA 37°C
	U/l	227	Diethanolamine buffer DEA 30°C
	U/l	186	Diethanolamine buffer DEA 25°C
	U/l	171	AMP optimised to IFCC 37°C
	U/l	133	AMP optimised to IFCC 30°C
	U/l	109	AMP optimised to IFCC 25°C
ALT (GPT)	U/l	41	Tris buffer without P5P 37°C
	U/l	30	Tris buffer without P5P 30°C
	U/l	23	Tris buffer without P5P 25°C
AST (GOT)	U/l	40	Tris buffer without P5P 37°C
	U/l	27	Tris buffer without P5P 30°C
	U/l	19	Tris buffer without P5P 25°C
Bile Acids	µmol/l	27.8	Enzymatic Colorimetric
Bilirubin Direct	µmol/l	18.5	Diazo with Sulphanilic Acid
	mg/dl	1.08	
Bilirubin Total	µmol/l	22.8	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.33	
	µmol/l	23.5	Nitrobenzenediazonium salt
	mg/dl	1.37	
Calcium	mmol/l	2.15	Arsenazo III
	mg/dl	8.62	
Chloride	mmol/l	100	ISE direct
Cholesterol	mmol/l	4.10	Cholesterol Oxidase
	mg/dl	158	
CK Total	U/l	220	CK-NAC (IFCC) 37°C
	U/l	138	CK-NAC (IFCC) 30°C
	U/l	94	CK-NAC (IFCC) 25°C
Creatinine	µmol/l	136	Alkaline picrate no deproteinization
	mg/dl	1.54	
	µmol/l	132	Creatinine PAP method
gamma-GT	U/l	47	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	37	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30°C
	U/l	29	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25°C
Glucose	mmol/l	6.49	Hexokinase
	mg/dl	117	
	mmol/l	6.29	Glucose oxidase
	mg/dl	113	

CALIBRATION SERUM LEVEL 2 (CAL 2)

Konelab 20/30/60®/Thermo Scientific Indiko Plus® Lot. No. 1528UN Cat. No. CAL2350

Size 20 x 5ml Expiry 2023-06-28

Analyte	unit	Target	methods
Iron	µmol/l	22.1	Colorimetric without ppt.
	µg/dl	124	
LD (LDH)	U/l	426	P->L Scandinavian & Dutch 37°C
	U/l	308	P->L Scandinavian & Dutch 30°C
	U/l	216	P->L Scandinavian & Dutch 25°C
Magnesium	mmol/l	0.872	Xylidyl Blue
	mg/dl	2.12	
Phosphate Inorganic	mmol/l	1.44	Phosphomolybdate UV
	mg/dl	4.46	
Potassium	mmol/l	3.83	ISE method - direct
Protein Total	g/l	58.4	Biuret reaction end point
	g/dl	5.84	
Sodium	mmol/l	136	ISE method - direct
Triglycerides	mmol/l	1.03	Lipase/GPO-PAP no correction
	mg/dl	91.2	
Urea	mmol/l	7.20	Urease kinetic
	mg/dl	43.3	
	mmol/l	7.20	BUN
Uric Acid (Urate)	mmol/l	0.406	Uricase peroxidase with ascorbate oxidase
	mg/dl	6.82	
	mmol/l	0.389	Uricase peroxidase no ascorbate oxidase
	mg/dl	6.54	
	mmol/l	0.392	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	6.59	

CALIBRATION SERUM LEVEL 2 (CAL 2)

MEAN OF ALL INSTRUMENTS Lot. No. 1528UN Cat. No. CAL2350

Size 20 x 5ml Expiry 2023-06-28

Analyte	unit	Target	methods
a-HBDH	U/l	201	Oxobutyrate < 10 mmol/l 37°C
	U/l	152	Oxobutyrate < 10 mmol/l 30°C
	U/l	114	Oxobutyrate < 10 mmol/l 25°C
Acid Phosphatase (Total)	U/l	13.3	1-Naphthyl Phosphate substrate Kinetic 37°C
Albumin	g/l	41.0	Bromocresol Green
	g/dl	4.10	
	g/l	42.5	Bromocresol Purple
	g/dl	4.25	
	g/l	39.3	Turbidimetric Assays
g/dl	3.93		
Alkaline Phosphatase	U/l	288	Diethanolamine buffer DEA 37°C
	U/l	224	Diethanolamine buffer DEA 30°C
	U/l	184	Diethanolamine buffer DEA 25°C
	U/l	184	AMP optimised to IFCC 37°C
	U/l	143	AMP optimised to IFCC 30°C
	U/l	118	AMP optimised to IFCC 25°C
	U/l	176	AMP non-optimised 37°C
	U/l	137	AMP non-optimised 30°C
	U/l	112	AMP non-optimised 25°C
ALT (GPT)	U/l	41	Tris buffer with P5P 37°C
	U/l	30	Tris buffer with P5P 30°C
	U/l	23	Tris buffer with P5P 25°C
	U/l	36	Tris buffer without P5P 37°C
	U/l	27	Tris buffer without P5P 30°C
	U/l	20	Tris buffer without P5P 25°C
	U/l	37	Tris buffer SCE 37°C
	U/l	27	Tris buffer SCE 30°C
	U/l	21	Tris buffer SCE 25°C
Amylase Pancreatic	U/l	67	Immunoinhibition EPS substrate 37°C
	U/l	68	Roche EPS Liquid 37°C
	U/l	79	Randox Liquid Ethylidene pNPG7 37°C
Amylase Total	U/l	95	pNP Maltotrioxide substrates 37°C
	U/l	93	Siemens - blocked pNPG7 37°C
	U/l	78	Randox Lyo. Ethylidene pNPG7 37°C
	U/l	98	Randox Liquid Ethylidene pNPG7 37°C
	U/l	89	BM/Roche Colorimetric pNPG7 37°C
	U/l	96	Siemens - maltopenta/hexaoside 37°C
	U/l	88	Saccharogenic 37°C
	U/l	91	Roche Integra 2-chloro-pNPG7 37°C

CALIBRATION SERUM LEVEL 2 (CAL 2)

MEAN OF ALL INSTRUMENTS Lot. No. 1528UN Cat. No. CAL2350

Size 20 x 5ml Expiry 2023-06-28

Analyte	unit	Target	methods
Amylase Total	U/l	90	Other Roche 2-chloro-pNPG7 37°C
	U/l	90	Roche liquid stable pNPG7 37°C
	U/l	99	Siemens 2-chloro-pNPG3 37°C
	U/l	96	Beckman Coulter - blocked pNPG7 37°C
	U/l	95	Beckman Synchron AMY7 37°C
	U/l	85	Beckman CNPG3 (Extinction Coeff) 37°C
AST (GOT)	U/l	44	Tris buffer with P5P 37°C
	U/l	30	Tris buffer with P5P 30°C
	U/l	21	Tris buffer with P5P 25°C
	U/l	34	Tris buffer without P5P 37°C
	U/l	23	Tris buffer without P5P 30°C
	U/l	16	Tris buffer without P5P 25°C
	U/l	33	Tris buffer SCE 37°C
	U/l	22	Tris buffer SCE 30°C
	U/l	16	Tris buffer SCE 25°C
Bicarbonate	mmol/l	12.0	Colorimetric
	mmol/l	11.5	Differential rate pH change
	mmol/l	11.7	Enzymatic
Bile Acids	µmol/l	26.2	4th Generation Colorimetric
	µmol/l	26.0	5th Generation Colorimetric
Bilirubin Direct	µmol/l	20.0	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.17	
	µmol/l	19.4	Diazo with Sulphanilic Acid
	mg/dl	1.13	
	µmol/l	20.1	Diazo with Dichloroaniline (DCA)
	mg/dl	1.17	
	µmol/l	17.3	Oxidation to Biliverdin/Vanadate
	mg/dl	1.01	
Bilirubin Total	µmol/l	25.7	Diazo with Dichloroaniline (DCA)
	mg/dl	1.50	
	µmol/l	26.9	Diazo with Sulphanilic Acid
	mg/dl	1.57	
	µmol/l	24.3	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.42	
	µmol/l	23.5	Nitrobenzenediazonium salt
	mg/dl	1.37	
	µmol/l	24.4	Diazonium ion
	mg/dl	1.42	
	µmol/l	29.2	Oxidation to Biliverdin/Vanadate
mg/dl	1.71		
µmol/l	33.7	Modified Jendrassik	
mg/dl	1.97		

CALIBRATION SERUM LEVEL 2 (CAL 2)

MEAN OF ALL INSTRUMENTS Lot. No. 1528UN Cat. No. CAL2350

Size 20 x 5ml Expiry 2023-06-28

Analyte	unit	Target	methods
Calcium	mmol/l	2.18	Cresolphthalein complexone
	mg/dl	8.74	
	mmol/l	2.11	Ion selective electrode
	mg/dl	8.46	
	mmol/l	2.21	Arsenazo III
	mg/dl	8.86	
Chloride	mmol/l	99.2	Colorimetric
	mmol/l	95.2	ISE indirect
	mmol/l	96.7	ISE direct
Cholesterol	mmol/l	4.10	Cholesterol Oxidase
	mg/dl	158	
Cholinesterase	U/l	5825	Colorimetric Butyrylthiocholine 37°C
CK Total	U/l	205	CK-NAC serum start (DGKC) 37°C
	U/l	128	CK-NAC serum start (DGKC) 30°C
	U/l	87	CK-NAC serum start (DGKC) 25°C
	U/l	205	CK-NAC substrate start (DGKC) 37°C
	U/l	128	CK-NAC substrate start (DGKC) 30°C
	U/l	87	CK-NAC substrate start (DGKC) 25°C
	U/l	204	CK-NAC (IFCC) 37°C
	U/l	128	CK-NAC (IFCC) 30°C
	U/l	87	CK-NAC (IFCC) 25°C
	U/l	216	Monothioglycerol 37°C
	U/l	135	Monothioglycerol 30°C
	U/l	92	Monothioglycerol 25°C
Copper	µmol/l	16.0	Atomic absorption
	µg/dl	102	
	µmol/l	15.7	Colorimetric
	µg/dl	100	
Creatinine	µmol/l	131	Alkaline picrate no deproteinization
	mg/dl	1.48	
	µmol/l	134	Enzymatic UV method
	mg/dl	1.51	
	µmol/l	134	Creatinine PAP method
	mg/dl	1.51	
	µmol/l	133	Jaffe rate blanked
	mg/dl	1.50	
µmol/l	157	Jaffe rate blanked comp. (-26 µmol/l)	
mg/dl	1.77		
µmol/l	145	Jaffe rate blanked compensated (-18 µmol/l)	
mg/dl	1.64		

CALIBRATION SERUM LEVEL 2 (CAL 2)

MEAN OF ALL INSTRUMENTS Lot. No. 1528UN Cat. No. CAL2350

Size 20 x 5ml Expiry 2023-06-28

Analyte	unit	Target	methods
Creatinine	µmol/l	129	IDMS traceable
	mg/dl	1.45	
gamma-GT	U/l	46	Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C
	U/l	36	Gamma glutamyl.-3-carboxy-4-nitroanilide 30°C
	U/l	28	Gamma glutamyl.-3-carboxy-4-nitroanilide 25°C
	U/l	39	Gamma glutamyl-4-nitroanilide 37°C
	U/l	31	Gamma glutamyl-4-nitroanilide 30°C
	U/l	24	Gamma glutamyl-4-nitroanilide 25°C
	U/l	48	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	38	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30°C
	U/l	30	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25°C
	U/l	51	Randox Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C
	U/l	40	Randox Gamma glutamyl.-3-carboxy-4-nitroanilide 30°C
	U/l	31	Randox Gamma glutamyl.-3-carboxy-4-nitroanilide 25°C
GLDH	U/l	18	Triethanolamine buffer 50 mmol 37°C
	U/l	14	Triethanolamine buffer 50 mmol 30°C
	U/l	11	Triethanolamine buffer 50 mmol 25°C
Glucose	mmol/l	6.08	Glucose dehydrogenase
	mg/dl	110	
	mmol/l	6.19	Hexokinase
	mg/dl	112	
	mmol/l	6.03	Oxygen electrode
	mg/dl	109	
	mmol/l	6.29	Glucose oxidase
	mg/dl	113	
Iron	µmol/l	19.5	Colorimetric with ppt.
	µg/dl	109	
	µmol/l	19.3	Colorimetric without ppt.
	µg/dl	108	
Lactate	mmol/l	1.52	Colorimetric Lactate Oxidase
	mg/dl	13.7	
	mmol/l	1.47	UV LDH
mg/dl	13.2		
LAP	U/l	17	NAGEL 37°C
LD (LDH)	U/l	179	L->P 37°C
	U/l	129	L->P 30°C
	U/l	91	L->P 25°C
	U/l	420	P->L Scandinavian & Dutch 37°C
	U/l	303	P->L Scandinavian & Dutch 30°C
	U/l	213	P->L Scandinavian & Dutch 25°C
	U/l	384	P->L German methods 37°C
	U/l	277	P->L German methods 30°C
	U/l	195	P->L German methods 25°C

CALIBRATION SERUM LEVEL 2 (CAL 2)

MEAN OF ALL INSTRUMENTS Lot. No. 1528UN Cat. No. CAL2350

Size 20 x 5ml Expiry 2023-06-28

Analyte	unit	Target	methods
LD (LDH)	U/l	390	P->L SFBC 37°C
	U/l	282	P->L SFBC 30°C
	U/l	198	P->L SFBC 25°C
	U/l	200	L->P IFCC 37°C
	U/l	144	L->P IFCC 30°C
	U/l	101	L->P IFCC 25°C
Lipase	U/l	33	Other Colorimetric 37°C
	U/l	32	Roche Colorimetric 37°C
	U/l	41	Randox Colorimetric 37°C
Lithium	mmol/l	1.07	Ion selective electrode
	mg/dl	0.740	
	mmol/l	1.08	Spectrophotometric
	mg/dl	0.753	
Magnesium	mmol/l	0.844	Arsenazo III
	mg/dl	2.05	
	mmol/l	0.885	Calmagite
	mg/dl	2.15	
	mmol/l	0.878	Xylidyl Blue
	mg/dl	2.13	
	mmol/l	0.841	Methylthymol blue
	mg/dl	2.04	
mmol/l	0.887	Chlorphosphonazo III	
mg/dl	2.16		
Osmolality	mOsm/kg	290	Calculated
	mOsm/kg	300	Freezing point depression
Phosphate Inorganic	mmol/l	1.41	Phosphomolybdate enzymatic
	mg/dl	4.37	
	mmol/l	1.41	Phosphomolybdate UV
	mg/dl	4.37	
Potassium	mmol/l	3.97	Enzymatic
	mmol/l	3.92	ISE method - direct
	mmol/l	3.96	ISE method - indirect
Protein Total	g/l	57.8	Biuret reaction end point
	g/dl	5.78	
	g/l	56.7	Biuret reaction kinetic
	g/dl	5.67	
Sodium	mmol/l	143	Enzymatic
	mmol/l	139	ISE method - direct
	mmol/l	140	ISE method - indirect
TIBC	µmol/l	39.2	Removal of excess free iron
	µg/dl	219	

CALIBRATION SERUM LEVEL 2 (CAL 2)

MEAN OF ALL INSTRUMENTS Lot. No. 1528UN Cat. No. CAL2350

Size 20 x 5ml Expiry 2023-06-28

Analyte	unit	Target	methods
TIBC	µmol/l	40.7	FE+UIBC(saturation with iron)
	µg/dl	228	
	µmol/l	44.9	Direct Colorimetric
	µg/dl	251	
	µmol/l	44.5	Calculated from Transferrin
	µg/dl	249	
	µmol/l	47.5	Randox Direct
	µg/dl	266	
Triglycerides	mmol/l	1.03	Lipase/GPO-PAP no correction
	mg/dl	91.2	
	mmol/l	1.03	Lipase/GPO-PAP 0.11mmol/l correction
	mg/dl	91.2	
	mmol/l	1.03	L/G Kinase EP. no correction
	mg/dl	91.2	
	mmol/l	1.00	Lipase/Glycerol Dehydrogenase
	mg/dl	88.6	
UIBC	µmol/l	20.5	Direct Colorimetric
	µg/dl	114	
Urea	mmol/l	7.31	Urease end point
	mg/dl	43.9	
	mmol/l	7.26	Urease kinetic
	mg/dl	43.6	
	mmol/l	7.13	Urease hypochlorite
	mg/dl	42.9	
	mmol/l	7.26	BUN
	mg/dl	20.4	
Uric Acid (Urate)	mmol/l	0.375	Uricase catalase 340nm
	mg/dl	6.30	
	mmol/l	0.381	Uricase peroxidase with ascorbate oxidase
	mg/dl	6.40	
	mmol/l	0.379	Uricase peroxidase no ascorbate oxidase
	mg/dl	6.37	
	mmol/l	0.375	Spectrophotometric at 280-290
	mg/dl	6.30	
mmol/l	0.378	Uricase Peroxidase with ascorbate oxidase @ 546nm	
mg/dl	6.35		
Zinc	µmol/l	27.0	Colorimetric with deproteinisation
	µg/dl	176	

CALIBRATION SERUM LEVEL 2 (CAL 2)

MINDRAY BS-200/300/400 Lot. No. 1528UN Cat. No. CAL2350

Size 20 x 5ml Expiry 2023-06-28

Analyte	unit	Target	methods
Albumin	g/l	41.0	Bromocresol Green
	g/dl	4.10	
Alkaline Phosphatase	U/l	258	Diethanolamine buffer DEA 37°C
	U/l	201	Diethanolamine buffer DEA 30°C
	U/l	165	Diethanolamine buffer DEA 25°C
	U/l	181	AMP optimised to IFCC 37°C
	U/l	141	AMP optimised to IFCC 30°C
	U/l	116	AMP optimised to IFCC 25°C
ALT (GPT)	U/l	39	Tris buffer without P5P 37°C
	U/l	29	Tris buffer without P5P 30°C
	U/l	22	Tris buffer without P5P 25°C
AST (GOT)	U/l	37	Tris buffer without P5P 37°C
	U/l	25	Tris buffer without P5P 30°C
	U/l	18	Tris buffer without P5P 25°C
Bilirubin Direct	µmol/l	18.5	Oxidation to Biliverdin/Vanadate
	mg/dl	1.08	
Bilirubin Total	µmol/l	25.1	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.47	
	µmol/l	26.1	Oxidation to Biliverdin/Vanadate
	mg/dl	1.52	
Calcium	mmol/l	2.22	Arsenazo III
	mg/dl	8.90	
Chloride	mmol/l	96.5	ISE indirect
Cholesterol	mmol/l	4.14	Cholesterol Oxidase
	mg/dl	160	
Cholinesterase	U/l	5737	Colorimetric Butyrylthiocholine 37°C
CK Total	U/l	206	CK-NAC (IFCC) 37°C
	U/l	129	CK-NAC (IFCC) 30°C
	U/l	88	CK-NAC (IFCC) 25°C
Creatinine	µmol/l	134	Alkaline picrate no deproteinization
	mg/dl	1.52	
	µmol/l	127	Enzymatic UV method
gamma-GT	U/l	46	Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C
	U/l	36	Gamma glutamyl.-3-carboxy-4-nitroanilide 30°C
	U/l	28	Gamma glutamyl.-3-carboxy-4-nitroanilide 25°C
Glucose	mmol/l	6.31	Hexokinase
	mg/dl	114	
	mmol/l	6.51	Glucose oxidase
	mg/dl	117	

CALIBRATION SERUM LEVEL 2 (CAL 2)

MINDRAY BS-200/300/400 Lot. No. 1528UN Cat. No. CAL2350

Size 20 x 5ml Expiry 2023-06-28

Analyte	unit	Target	methods
Iron	µmol/l	20.5	Colorimetric without ppt.
	µg/dl	115	
LD (LDH)	U/l	416	P->L German methods 37°C
	U/l	300	P->L German methods 30°C
	U/l	211	P->L German methods 25°C
	U/l	390	P->L SFBC 37°C
	U/l	282	P->L SFBC 30°C
	U/l	198	P->L SFBC 25°C
	U/l	205	L->P IFCC 37°C
	U/l	148	L->P IFCC 30°C
Magnesium	mmol/l	0.894	Xylidyl Blue
	mg/dl	2.17	
Phosphate Inorganic	mmol/l	1.49	Phosphomolybdate UV
	mg/dl	4.62	
Potassium	mmol/l	3.94	ISE method - indirect
Protein Total	g/l	60.4	Biuret reaction end point
	g/dl	6.04	
Sodium	mmol/l	140	ISE method - indirect
Triglycerides	mmol/l	1.04	Lipase/GPO-PAP no correction
	mg/dl	92.0	
Urea	mmol/l	7.63	Urease kinetic
	mg/dl	45.9	
	mmol/l	7.63	BUN
Uric Acid (Urate)	mmol/l	0.380	Uricase peroxidase with ascorbate oxidase
	mg/dl	6.38	
	mmol/l	0.406	Uricase peroxidase no ascorbate oxidase
	mg/dl	6.82	
	mmol/l	0.380	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	6.38	

CALIBRATION SERUM LEVEL 2 (CAL 2)

Roche Cobas 6000 c501 e601 Lot. No. 1528UN Cat. No. CAL2350

Size 20 x 5ml Expiry 2023-06-28

Analyte	unit	Target	methods
Albumin	g/l	41.8	Bromocresol Green
	g/dl	4.18	
	g/l	41.2	Bromocresol Purple
	g/dl	4.12	
	g/l	39.7	Turbidimetric Assays
	g/dl	3.97	
Alkaline Phosphatase	U/l	148	Roche Integra AMP buffer 37°C
	U/l	115	Roche Integra AMP buffer 30°C
	U/l	95	Roche Integra AMP buffer 25°C
ALT (GPT)	U/l	35	Tris buffer without P5P 37°C
	U/l	26	Tris buffer without P5P 30°C
	U/l	20	Tris buffer without P5P 25°C
Amylase Pancreatic	U/l	67	Roche EPS Liquid 37°C
Amylase Total	U/l	88	BM/Roche Colorimetric pNPG7 37°C
	U/l	89	Roche Integra 2-chloro-pNPG7 37°C
	U/l	89	Roche liquid stable pNPG7 37°C
AST (GOT)	U/l	33	Tris buffer without P5P 37°C
	U/l	22	Tris buffer without P5P 30°C
	U/l	16	Tris buffer without P5P 25°C
Bicarbonate	mmol/l	11.8	Colorimetric
	mmol/l	11.6	Enzymatic
Bile Acids	µmol/l	25.5	Enzymatic Colorimetric
Bilirubin Direct	µmol/l	20.0	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.17	
	µmol/l	19.8	Diazo with Sulphanilic Acid
	mg/dl	1.16	
	µmol/l	19.9	Roche JG factored
mg/dl	1.17		
Bilirubin Total	µmol/l	24.3	Diazo with Sulphanilic Acid
	mg/dl	1.42	
	µmol/l	24.5	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.43	
	µmol/l	24.5	Diazonium ion
mg/dl	1.43		
Calcium	mmol/l	2.19	Cresolphthalein complexone
	mg/dl	8.78	
	mmol/l	2.20	NM-BAPTA
	mg/dl	8.82	
Chloride	mmol/l	91.8	ISE indirect

CALIBRATION SERUM LEVEL 2 (CAL 2)

Roche Cobas 6000 c501 e601 Lot. No. 1528UN Cat. No. CAL2350

Size 20 x 5ml Expiry 2023-06-28

Analyte	unit	Target	methods
Cholesterol	mmol/l	4.04	Cholesterol Oxidase
	mg/dl	156	
Cholinesterase	U/l	5560	Colorimetric Butyrylthiocholine 37°C
CK Total	U/l	198	CK-NAC substrate start (DGKC) 37°C
	U/l	124	CK-NAC substrate start (DGKC) 30°C
	U/l	84	CK-NAC substrate start (DGKC) 25°C
	U/l	201	CK-NAC (IFCC) 37°C
	U/l	126	CK-NAC (IFCC) 30°C
	U/l	85	CK-NAC (IFCC) 25°C
Creatinine	µmol/l	133	Alkaline picrate no deproteinization
	mg/dl	1.50	
	µmol/l	140	Enzymatic UV method
	mg/dl	1.58	
	µmol/l	138	Roche Creatinine Plus
	mg/dl	1.56	
	µmol/l	136	Jaffe rate blanked
	mg/dl	1.53	
	µmol/l	155	Jaffe rate blanked comp. (-26 µmol/l)
	mg/dl	1.75	
µmol/l	147	Jaffe rate blanked compensated (-18 µmol/l)	
mg/dl	1.66		
µmol/l	133	IDMS traceable	
mg/dl	1.50		
gamma-GT	U/l	42	Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C
	U/l	33	Gamma glutamyl.-3-carboxy-4-nitroanilide 30°C
	U/l	26	Gamma glutamyl.-3-carboxy-4-nitroanilide 25°C
	U/l	49	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	39	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30°C
	U/l	30	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25°C
GLDH	U/l	17	Triethanolamine buffer 50 mmol 37°C
	U/l	13	Triethanolamine buffer 50 mmol 30°C
	U/l	11	Triethanolamine buffer 50 mmol 25°C
Glucose	mmol/l	6.10	Glucose dehydrogenase
	mg/dl	110	
	mmol/l	6.21	Hexokinase
	mg/dl	112	
mmol/l	6.29	Glucose oxidase	
mg/dl	113		
Iron	µmol/l	19.2	Colorimetric with ppt.
	µg/dl	107	
	µmol/l	19.3	Colorimetric without ppt.
	µg/dl	108	
Lactate	mmol/l	1.51	Colorimetric Lactate Oxidase
	mg/dl	13.6	

CALIBRATION SERUM LEVEL 2 (CAL 2)

Roche Cobas 6000 c501 e601 Lot. No. 1528UN Cat. No. CAL2350

Size 20 x 5ml Expiry 2023-06-28

Analyte	unit	Target	methods
LD (LDH)	U/l	189	L->P 37°C
	U/l	136	L->P 30°C
	U/l	96	L->P 25°C
	U/l	381	P->L German methods 37°C
	U/l	275	P->L German methods 30°C
	U/l	193	P->L German methods 25°C
	U/l	199	L->P IFCC 37°C
	U/l	144	L->P IFCC 30°C
	U/l	101	L->P IFCC 25°C
Lipase	U/l	32	Roche Colorimetric 37°C
Lithium	mmol/l	1.08	Spectrophotometric
	mg/dl	0.750	
Magnesium	mmol/l	0.878	Xylidyl Blue
	mg/dl	2.13	
	mmol/l	0.876	Chlorphosphonazo III
	mg/dl	2.13	
Phosphate Inorganic	mmol/l	1.39	Phosphomolybdate enzymatic
	mg/dl	4.31	
	mmol/l	1.40	Phosphomolybdate UV
	mg/dl	4.34	
Potassium	mmol/l	4.00	ISE method - indirect
Protein Total	g/l	57.8	Biuret reaction end point
	g/dl	5.78	
	g/l	57.3	Biuret reaction kinetic
	g/dl	5.73	
Sodium	mmol/l	140	ISE method - indirect
TIBC	µmol/l	39.2	FE+UIBC(saturation with iron)
	µg/dl	219	
	µmol/l	45.8	Calculated from Transferrin
	µg/dl	256	
Triglycerides	mmol/l	1.05	Lipase/GPO-PAP no correction
	mg/dl	92.9	
	mmol/l	1.04	L/G Kinase EP. no correction
mg/dl	92.0		
UIBC	µmol/l	20.0	Direct Colorimetric
	µg/dl	112	
Urea	mmol/l	7.33	Urease end point
	mg/dl	44.1	
	mmol/l	7.21	Urease kinetic
	mg/dl	43.3	
	mmol/l	7.21	BUN
	mg/dl	20.2	

CALIBRATION SERUM LEVEL 2 (CAL 2)

Roche Cobas 6000 c501 e601 Lot. No. 1528UN Cat. No. CAL2350

Size 20 x 5ml Expiry 2023-06-28

Analyte	unit	Target	methods
Uric Acid (Urate)	mmol/l	0.375	Uricase peroxidase with ascorbate oxidase
	mg/dl	6.30	
	mmol/l	0.372	Uricase peroxidase no ascorbate oxidase
	mg/dl	6.25	
mmol/l	0.373	Uricase Peroxidase with ascorbate oxidase @ 546nm	
mg/dl	6.27		

CALIBRATION SERUM LEVEL 2 (CAL 2)

Roche Cobas C111® Lot. No. 1528UN Cat. No. CAL2350

Size 20 x 5ml Expiry 2023-06-28

Analyte	unit	Target	methods
Albumin	g/l	42.1	Bromocresol Green
	g/dl	4.21	
Alkaline Phosphatase	U/l	154	Roche Integra AMP buffer 37°C
	U/l	120	Roche Integra AMP buffer 30°C
	U/l	98	Roche Integra AMP buffer 25°C
	U/l	159	AMP optimised to IFCC 37°C
	U/l	124	AMP optimised to IFCC 30°C
	U/l	102	AMP optimised to IFCC 25°C
ALT (GPT)	U/l	35	Tris buffer without P5P 37°C
	U/l	26	Tris buffer without P5P 30°C
	U/l	20	Tris buffer without P5P 25°C
Amylase Total	U/l	93	Roche liquid stable pNPG7 37°C
AST (GOT)	U/l	34	Tris buffer without P5P 37°C
	U/l	23	Tris buffer without P5P 30°C
	U/l	16	Tris buffer without P5P 25°C
Bicarbonate	mmol/l	11.0	Enzymatic
Bilirubin Direct	µmol/l	19.3	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.13	
	µmol/l	19.6	Diazo with Sulphanilic Acid
Bilirubin Total	mg/dl	1.15	
	µmol/l	24.3	Diazo with Sulphanilic Acid
	mg/dl	1.42	
Bilirubin Total	µmol/l	23.9	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.40	
	µmol/l	24.6	Diazonium ion
Calcium	mg/dl	1.44	
	mmol/l	2.22	Cresolphthalein complexone
	mg/dl	8.90	
Calcium	mmol/l	2.17	NM-BAPTA
	mg/dl	8.70	
Chloride	mmol/l	99.1	ISE indirect
Cholesterol	mmol/l	4.06	Cholesterol Oxidase
	mg/dl	157	
CK Total	U/l	191	CK-NAC (IFCC) 37°C
	U/l	120	CK-NAC (IFCC) 30°C
	U/l	81	CK-NAC (IFCC) 25°C
Creatinine	µmol/l	130	Alkaline picrate no deproteinization
	mg/dl	1.47	
	µmol/l	132	Roche Creatinine Plus
Creatinine	mg/dl	1.49	

CALIBRATION SERUM LEVEL 2 (CAL 2)

Roche Cobas C111® Lot. No. 1528UN Cat. No. CAL2350

Size 20 x 5ml Expiry 2023-06-28

Analyte	unit	Target	methods
Creatinine	µmol/l	147	Jaffe rate blanked compensated (-18 µmol/l)
	mg/dl	1.66	
gamma-GT	U/l	46	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	36	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30°C
	U/l	28	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25°C
Glucose	mmol/l	6.27	Hexokinase
	mg/dl	113	
LD (LDH)	U/l	208	L->P IFCC 37°C
	U/l	150	L->P IFCC 30°C
	U/l	105	L->P IFCC 25°C
Magnesium	mmol/l	0.899	Chlorphosphonazo III
	mg/dl	2.18	
Phosphate Inorganic	mmol/l	1.45	Phosphomolybdate enzymatic
	mg/dl	4.50	
	mmol/l	1.47	Phosphomolybdate UV
mg/dl	4.56		
Potassium	mmol/l	3.96	ISE method - indirect
Protein Total	g/l	58.4	Biuret reaction end point
	g/dl	5.84	
Sodium	mmol/l	137	ISE method - indirect
Triglycerides	mmol/l	1.05	Lipase/GPO-PAP no correction
	mg/dl	92.9	
	mmol/l	0.968	Lipase/GPO-PAP 0.11mmol/l correction
mg/dl	85.7		
Urea	mmol/l	7.09	Urease kinetic
	mg/dl	42.6	
	mmol/l	7.09	BUN
mg/dl	19.9		
Uric Acid (Urate)	mmol/l	0.382	Uricase peroxidase with ascorbate oxidase
	mg/dl	6.42	
	mmol/l	0.374	Uricase peroxidase no ascorbate oxidase
	mg/dl	6.28	
	mmol/l	0.388	Uricase Peroxidase with ascorbate oxidase @ 546nm
mg/dl	6.52		

CALIBRATION SERUM LEVEL 2 (CAL 2)

Roche Cobas C311® Lot. No. 1528UN Cat. No. CAL2350

Size 20 x 5ml Expiry 2023-06-28

Analyte	unit	Target	methods
Albumin	g/l	41.8	Bromocresol Green
	g/dl	4.18	
	g/l	42.6	Bromocresol Purple
	g/dl	4.26	
Alkaline Phosphatase	U/l	147	Roche Integra AMP buffer 37°C
	U/l	115	Roche Integra AMP buffer 30°C
	U/l	94	Roche Integra AMP buffer 25°C
ALT (GPT)	U/l	35	Tris buffer without P5P 37°C
	U/l	26	Tris buffer without P5P 30°C
	U/l	20	Tris buffer without P5P 25°C
Amylase Total	U/l	90	Roche liquid stable pNPG7 37°C
AST (GOT)	U/l	34	Tris buffer without P5P 37°C
	U/l	23	Tris buffer without P5P 30°C
	U/l	16	Tris buffer without P5P 25°C
Bicarbonate	mmol/l	10.9	Enzymatic
Bilirubin Direct	µmol/l	20.5	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.20	
	µmol/l	20.4	Diazo with Sulphanilic Acid
	mg/dl	1.19	
µmol/l	20.2	Roche JG factored	
	mg/dl		1.18
Bilirubin Total	µmol/l	25.0	Diazo with Sulphanilic Acid
	mg/dl	1.46	
	µmol/l	24.8	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.45	
µmol/l	24.6	Diazonium ion	
	mg/dl		1.44
Calcium	mmol/l	2.20	Cresolphthalein complexone
	mg/dl	8.82	
	mmol/l	2.21	NM-BAPTA
mg/dl	8.86		
Chloride	mmol/l	92.1	ISE indirect
Cholesterol	mmol/l	4.09	Cholesterol Oxidase
	mg/dl	158	
CK Total	U/l	202	CK-NAC (IFCC) 37°C
	U/l	126	CK-NAC (IFCC) 30°C
	U/l	86	CK-NAC (IFCC) 25°C
Creatinine	µmol/l	132	Alkaline picrate no deproteinization
	mg/dl	1.49	

CALIBRATION SERUM LEVEL 2 (CAL 2)

Roche Cobas C311® Lot. No. 1528UN Cat. No. CAL2350

Size 20 x 5ml Expiry 2023-06-28

Analyte	unit	Target	methods	
Creatinine	µmol/l	139	Roche Creatinine Plus	
	mg/dl	1.57		
	µmol/l	133	Jaffe rate blanked	
	mg/dl	1.50		
	µmol/l	160	Jaffe rate blanked comp. (-26 µmol/l)	
	mg/dl	1.81		
	gamma-GT	U/l	42	Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C
		U/l	33	Gamma glutamyl.-3-carboxy-4-nitroanilide 30°C
U/l		26	Gamma glutamyl.-3-carboxy-4-nitroanilide 25°C	
U/l		49	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C	
U/l		39	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30°C	
U/l		30	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25°C	
Glucose	mmol/l	6.24	Hexokinase	
	mg/dl	112		
	mmol/l	6.22	Glucose oxidase	
	mg/dl	112		
Iron	µmol/l	19.1	Colorimetric without ppt.	
	µg/dl	107		
Lactate	mmol/l	1.52	Colorimetric Lactate Oxidase	
	mg/dl	13.7		
LD (LDH)	U/l	381	P->L German methods 37°C	
	U/l	275	P->L German methods 30°C	
	U/l	193	P->L German methods 25°C	
	U/l	202	L->P IFCC 37°C	
	U/l	146	L->P IFCC 30°C	
	U/l	102	L->P IFCC 25°C	
Lipase	U/l	32	Roche Colorimetric 37°C	
Magnesium	mmol/l	0.876	Xylidyl Blue	
	mg/dl	2.13		
	mmol/l	0.881	Chlorphosphonazo III	
Phosphate Inorganic	mmol/l	1.41	Phosphomolybdate UV	
	mg/dl	4.37		
Potassium	mmol/l	4.01	ISE method - indirect	
Protein Total	g/l	57.9	Biuret reaction end point	
	g/dl	5.79		
Sodium	mmol/l	141	ISE method - indirect	
TIBC	µmol/l	39.7	FE+UIBC(saturation with iron)	
	µg/dl	222		
Triglycerides	mmol/l	1.05	Lipase/GPO-PAP no correction	
	mg/dl	92.9		
	mmol/l	1.07	Lipase/GPO-PAP 0.11mmol/l correction	
	mg/dl	94.7		

CALIBRATION SERUM LEVEL 2 (CAL 2)

Roche Cobas C311® Lot. No. 1528UN Cat. No. CAL2350

Size 20 x 5ml Expiry 2023-06-28

Analyte	unit	Target	methods
Triglycerides	mmol/l	1.03	L/G Kinase EP. no correction
	mg/dl	91.2	
	mmol/l	1.06	Lipase/Glycerol Dehydrogenase
	mg/dl	93.7	
UIBC	µmol/l	21.3	Direct Colorimetric
	µg/dl	119	
Urea	mmol/l	7.32	Urease kinetic
	mg/dl	44.0	
	mmol/l	7.32	BUN
	mg/dl	20.5	
Uric Acid (Urate)	mmol/l	0.377	Uricase peroxidase with ascorbate oxidase
	mg/dl	6.33	
	mmol/l	0.384	Uricase peroxidase no ascorbate oxidase
	mg/dl	6.45	
	mmol/l	0.379	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	6.37	

CALIBRATION SERUM LEVEL 2 (CAL 2)

Roche Cobas c701 / c702 / c711 Lot. No. 1528UN Cat. No. CAL2350

Size 20 x 5ml Expiry 2023-06-28

Analyte	unit	Target	methods
Albumin	g/l	41.7	Bromocresol Green
	g/dl	4.17	
	g/l	40.9	Bromocresol Purple
	g/dl	4.09	
	g/l	41.6	Turbidimetric Assays
	g/dl	4.16	
Alkaline Phosphatase	U/l	145	Roche Integra AMP buffer 37°C
	U/l	113	Roche Integra AMP buffer 30°C
	U/l	93	Roche Integra AMP buffer 25°C
ALT (GPT)	U/l	35	Tris buffer without P5P 37°C
	U/l	26	Tris buffer without P5P 30°C
	U/l	20	Tris buffer without P5P 25°C
Amylase Pancreatic	U/l	68	Roche EPS Liquid 37°C
Amylase Total	U/l	90	BM/Roche Colorimetric pNPG7 37°C
	U/l	90	Roche liquid stable pNPG7 37°C
AST (GOT)	U/l	33	Tris buffer without P5P 37°C
	U/l	22	Tris buffer without P5P 30°C
	U/l	16	Tris buffer without P5P 25°C
Bicarbonate	mmol/l	12.2	Enzymatic
Bile Acids	µmol/l	23.9	Enzymatic Colorimetric
Bilirubin Direct	µmol/l	19.7	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.15	
	µmol/l	19.5	Roche JG factored
	mg/dl	1.14	
	µmol/l	16.6	
mg/dl	0.969	Oxidation to Biliverdin/Vanadate	
Bilirubin Total	µmol/l	22.8	Diazo with Dichloroaniline (DCA)
	mg/dl	1.33	
	µmol/l	23.3	Diazo with Sulphanilic Acid
	mg/dl	1.36	
	µmol/l	24.1	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.41	
	µmol/l	23.7	Diazonium ion
	mg/dl	1.39	
Calcium	mmol/l	2.17	Cresolphthalein complexone
	mg/dl	8.70	
	mmol/l	2.19	NM-BAPTA
	mg/dl	8.78	
Chloride	mmol/l	92.9	ISE indirect

CALIBRATION SERUM LEVEL 2 (CAL 2)

Roche Cobas c701 / c702 / c711 Lot. No. 1528UN Cat. No. CAL2350

Size 20 x 5ml Expiry 2023-06-28

Analyte	unit	Target	methods
Cholesterol	mmol/l	4.06	Cholesterol Oxidase
	mg/dl	157	
Cholinesterase	U/l	5562	Colorimetric Butyrylthiocholine 37°C
CK Total	U/l	204	CK-NAC (IFCC) 37°C
	U/l	128	CK-NAC (IFCC) 30°C
	U/l	87	CK-NAC (IFCC) 25°C
Creatinine	µmol/l	139	Roche Creatinine Plus
	mg/dl	1.57	
	µmol/l	136	Jaffe rate blanked
	mg/dl	1.53	
gamma-GT	U/l	43	Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C
	U/l	34	Gamma glutamyl.-3-carboxy-4-nitroanilide 30°C
	U/l	27	Gamma glutamyl.-3-carboxy-4-nitroanilide 25°C
	U/l	49	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	39	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30°C
	U/l	30	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25°C
Glucose	mmol/l	6.23	Hexokinase
	mg/dl	112	
Iron	µmol/l	18.5	Colorimetric without ppt.
	µg/dl	103	
Lactate	mmol/l	1.51	Colorimetric Lactate Oxidase
	mg/dl	13.6	
LD (LDH)	U/l	200	L->P IFCC 37°C
	U/l	144	L->P IFCC 30°C
	U/l	101	L->P IFCC 25°C
Lipase	U/l	31	Roche Colorimetric 37°C
Lithium	mmol/l	1.12	Spectrophotometric
	mg/dl	0.778	
Magnesium	mmol/l	0.877	Xylidyl Blue
	mg/dl	2.13	
	mmol/l	0.883	Chlorphosphonazo III
Phosphate Inorganic	mmol/l	1.39	Phosphomolybdate UV
	mg/dl	4.31	
Potassium	mmol/l	3.99	ISE method - indirect
Protein Total	g/l	57.4	Biuret reaction end point
	g/dl	5.74	
Sodium	mmol/l	141	ISE method - indirect
TIBC	µmol/l	39.6	FE+UIBC(saturation with iron)
	µg/dl	221	
	µmol/l	44.8	Calculated from Transferrin
	µg/dl	250	

CALIBRATION SERUM LEVEL 2 (CAL 2)

Roche Cobas c701 / c702 / c711 Lot. No. 1528UN Cat. No. CAL2350

Size 20 x 5ml Expiry 2023-06-28

Analyte	unit	Target	methods
Triglycerides	mmol/l	1.04	Lipase/GPO-PAP no correction
	mg/dl	92.0	
	mmol/l	1.04	L/G Kinase EP. no correction
	mg/dl	92.0	
UIBC	µmol/l	21.1	Direct Colorimetric
	µg/dl	118	
Urea	mmol/l	7.09	Urease kinetic
	mg/dl	42.6	
	mmol/l	7.09	BUN
	mg/dl	19.9	
Uric Acid (Urate)	mmol/l	0.370	Uricase peroxidase with ascorbate oxidase
	mg/dl	6.22	
	mmol/l	0.373	Uricase peroxidase no ascorbate oxidase
	mg/dl	6.27	
	mmol/l	0.372	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	6.25	

CALIBRATION SERUM LEVEL 2 (CAL 2)

RX SERIES® Lot. No. 1528UN Cat. No. CAL2350

Size 20 x 5ml Expiry 2023-06-28

Analyte	unit	Target	methods
Creatinine	µmol/l	122	Alkaline picrate no deproteinization
	mg/dl	1.38	

CALIBRATION SERUM LEVEL 2 (CAL 2)

SIEMENS ATELLICA / ADVIA 1200/1650/1800/2400® Lot. No. 1528UN Cat. No. CAL2350

Size 20 x 5ml Expiry 2023-06-28

Analyte	unit	Target	methods
Albumin	g/l	39.8	Bromocresol Green
	g/dl	3.98	
	g/l	41.6	Bromocresol Purple
	g/dl	4.16	
Alkaline Phosphatase	U/l	161	AMP optimised to IFCC 37°C
ALT (GPT)	U/l	42	Tris buffer without P5P 37°C
Amylase Total	U/l	93	Siemens - blocked pNPG7 37°C
AST (GOT)	U/l	39	Tris buffer without P5P 37°C
Bicarbonate	mmol/l	13.1	Enzymatic
Bilirubin Direct	µmol/l	17.0	Oxidation to Biliverdin/Vanadate
	mg/dl	0.997	
Bilirubin Total	µmol/l	29.3	Oxidation to Biliverdin/Vanadate
	mg/dl	1.71	
Calcium	mmol/l	2.13	Cresolphthalein complexone
	mg/dl	8.54	
	mmol/l	2.21	Arsenazo III
mg/dl	8.86		
Chloride	mmol/l	96.8	ISE indirect
Cholesterol	mmol/l	4.08	Cholesterol Oxidase
	mg/dl	157	
Cholinesterase	U/l	5939	Colorimetric Butyrylthiocholine 37°C
CK Total	U/l	209	CK-NAC (IFCC) 37°C
Creatinine	µmol/l	128	Enzymatic UV method
	mg/dl	1.44	
	µmol/l	133	Jaffe rate blanked
	mg/dl	1.51	
µmol/l	154	Jaffe rate blanked comp. (-26 µmol/l)	
mg/dl	1.74		
gamma-GT	U/l	50	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
Glucose	mmol/l	6.00	Hexokinase
	mg/dl	108	
	mmol/l	6.19	Glucose oxidase
mg/dl	112		
Iron	µmol/l	19.0	Colorimetric without ppt.
	µg/dl	106	
Lactate	mmol/l	1.39	Colorimetric Lactate Oxidase
	mg/dl	12.5	
LD (LDH)	U/l	385	P->L German methods 37°C
	U/l	202	L->P IFCC 37°C

CALIBRATION SERUM LEVEL 2 (CAL 2)

SIEMENS ATELLICA / ADVIA 1200/1650/1800/2400® Lot. No. 1528UN Cat. No. CAL2350

Size 20 x 5ml Expiry 2023-06-28

Analyte	unit	Target	methods
Lipase	U/l	43	Other Colorimetric 37°C
Lithium	mmol/l	1.10	Spectrophotometric
	mg/dl	0.764	
Magnesium	mmol/l	0.854	Xylidyl Blue
	mg/dl	2.08	
Phosphate Inorganic	mmol/l	1.42	Phosphomolybdate UV
	mg/dl	4.40	
Potassium	mmol/l	3.99	ISE method - indirect
Protein Total	g/l	54.8	Biuret reaction end point
	g/dl	5.48	
Sodium	mmol/l	141	ISE method - indirect
TIBC	µmol/l	43.5	FE+UIBC(saturation with iron)
	µg/dl	243	
	µmol/l	45.3	Direct Colorimetric
	µg/dl	253	
	µmol/l	43.4	Calculated from Transferrin
	µg/dl	243	
Triglycerides	mmol/l	1.08	Lipase/GPO-PAP no correction
	mg/dl	95.6	
Urea	mmol/l	7.57	Urease kinetic
	mg/dl	45.5	
	mmol/l	7.57	BUN
	mg/dl	21.2	
Uric Acid (Urate)	mmol/l	0.384	Uricase peroxidase no ascorbate oxidase
	mg/dl	6.45	

CALIBRATION SERUM LEVEL 2 (CAL 2)

SIEMENS DIMENSION EXL® Lot. No. 1528UN Cat. No. CAL2350

Size 20 x 5ml Expiry 2023-06-28

Analyte	unit	Target	methods
Albumin	g/l	41.5	Bromocresol Purple
	g/dl	4.15	
Alkaline Phosphatase	U/l	165	Siemens Dimension AMP buffer 37°C
	U/l	164	AMP optimised to IFCC 37°C
ALT (GPT)	U/l	44	Tris buffer with P5P 37°C
	U/l	44	Tris buffer with P5P NVKC 37°C
	U/l	44	Siemens Dade Standard Non IFCC Correlated 37°C
Amylase Total	U/l	99	Siemens 2-chloro-pNPG3 37°C
AST (GOT)	U/l	44	Tris buffer with P5P 37°C
	U/l	45	Tris buffer with P5P NVKC 37°C
	U/l	47	Siemens Dade Standard Non IFCC Correlated 37°C
Bilirubin Direct	µmol/l	13.7	Diazo/Sulphanilic Siemens Dimension
	mg/dl	0.801	
Bilirubin Total	µmol/l	27.1	Diazo with Sulphanilic Acid
	mg/dl	1.59	
Calcium	mmol/l	2.09	Cresolphthalein complexone
	mg/dl	8.38	
Chloride	mmol/l	95.4	ISE indirect
Cholesterol	mmol/l	3.63	Cholesterol Oxidase
	mg/dl	140	
	mmol/l	3.62	Dimension-Siemens reagents
	mg/dl	140	
CK Total	U/l	201	CK-NAC (IFCC) 37°C
Creatinine	µmol/l	135	Alkaline picrate no deproteinization
	mg/dl	1.52	
	µmol/l	138	Jaffe rate blanked
gamma-GT	mg/dl	1.56	
	U/l	57	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
Glucose	U/l	60	Siemens Dimension (non IFCC) 37°C
	mmol/l	6.32	Hexokinase
Iron	mg/dl	114	
	µmol/l	18.5	Colorimetric without ppt.
LD (LDH)	µg/dl	103	
	U/l	191	Siemens Dimension L-P Non IFCC 37°C
Lipase	U/l	186	L->P IFCC 37°C
	U/l	138	Colorimetric Siemens Dimension (LIPL Kit) 37°C
Magnesium	mmol/l	0.824	Methylthymol blue
	mg/dl	2.00	
Phosphate Inorganic	mmol/l	1.50	Phosphomolybdate enzymatic
	mg/dl	4.65	

CALIBRATION SERUM LEVEL 2 (CAL 2)

SIEMENS DIMENSION EXL® Lot. No. 1528UN Cat. No. CAL2350

Size 20 x 5ml Expiry 2023-06-28

Analyte	unit	Target	methods
Phosphate Inorganic	mmol/l	1.46	Phosphomolybdate UV
	mg/dl	4.53	
Potassium	mmol/l	3.91	ISE method - indirect
Protein Total	g/l	59.8	Biuret reaction end point
	g/dl	5.98	
Sodium	mmol/l	140	ISE method - indirect
Triglycerides	mmol/l	0.958	Lipase/GPO-PAP no correction
	mg/dl	84.8	
	mmol/l	0.959	L/G Kinase EP. no correction
Urea	mmol/l	7.31	Urease kinetic
	mg/dl	43.9	
	mmol/l	7.31	BUN
	mg/dl	20.5	
Uric Acid (Urate)	mmol/l	0.377	Uricase peroxidase no ascorbate oxidase
	mg/dl	6.33	
	mmol/l	0.374	Spectrophotometric at 280-290
	mg/dl	6.28	

CALIBRATION SERUM LEVEL 2 (CAL 2)

SIEMENS DIMENSION RxL/Max/Xpand® Lot. No. 1528UN Cat. No. CAL2350

Size 20 x 5ml Expiry 2023-06-28

Analyte	unit	Target	methods
Albumin	g/l	41.7	Bromocresol Green
	g/dl	4.17	
	g/l	41.4	Bromocresol Purple
	g/dl	4.14	
Alkaline Phosphatase	U/l	167	Siemens Dimension AMP buffer 37°C
	U/l	164	AMP optimised to IFCC 37°C
ALT (GPT)	U/l	45	Tris buffer with P5P 37°C
	U/l	47	Siemens Dade Standard Non IFCC Correlated 37°C
Amylase Total	U/l	100	Siemens 2-chloro-pNPG3 37°C
AST (GOT)	U/l	43	Tris buffer with P5P 37°C
	U/l	47	Siemens Dade Standard Non IFCC Correlated 37°C
Bilirubin Direct	µmol/l	13.6	Diazo/Sulphanilic Siemens Dimension
	mg/dl	0.797	
Bilirubin Total	µmol/l	27.5	Diazo with Sulphanilic Acid
	mg/dl	1.61	
Calcium	mmol/l	2.14	Cresolphthalein complexone
	mg/dl	8.58	
Chloride	mmol/l	96.0	ISE indirect
Cholesterol	mmol/l	3.61	Dimension-Siemens reagents
	mg/dl	139	
CK Total	U/l	203	CK-NAC (IFCC) 37°C
Creatinine	µmol/l	137	Alkaline picrate no deproteinization
	mg/dl	1.55	
	µmol/l	139	Jaffe rate blanked
	mg/dl	1.57	
gamma-GT	U/l	63	Siemens Dimension (non IFCC) 37°C
Glucose	mmol/l	6.27	Hexokinase
	mg/dl	113	
Iron	µmol/l	18.3	Colorimetric without ppt.
	µg/dl	102	
LD (LDH)	U/l	201	Siemens Dimension L-P Non IFCC 37°C
	U/l	184	L->P IFCC 37°C
Lipase	U/l	138	Colorimetric Siemens Dimension (LIPL Kit) 37°C
Magnesium	mmol/l	0.850	Methylthymol blue
	mg/dl	2.07	
Phosphate Inorganic	mmol/l	1.46	Phosphomolybdate UV
	mg/dl	4.53	
Potassium	mmol/l	3.91	ISE method - indirect
Protein Total	g/l	59.8	Biuret reaction end point
	g/dl	5.98	

CALIBRATION SERUM LEVEL 2 (CAL 2)

SIEMENS DIMENSION RxL/Max/Xpand® Lot. No. 1528UN Cat. No. CAL2350

Size 20 x 5ml Expiry 2023-06-28

Analyte	unit	Target	methods
Sodium	mmol/l	139	ISE method - indirect
Triglycerides	mmol/l	0.964	Lipase/GPO-PAP no correction
	mg/dl	85.3	
	mmol/l	0.976	Lipase/Glycerol Dehydrogenase
	mg/dl	86.4	
Urea	mmol/l	7.45	Urease end point
	mg/dl	44.8	
	mmol/l	7.31	Urease kinetic
	mg/dl	43.9	
	mmol/l	7.31	BUN
mg/dl	20.5		
Uric Acid (Urate)	mmol/l	0.373	Uricase peroxidase no ascorbate oxidase
	mg/dl	6.27	
	mmol/l	0.375	Spectrophotometric at 280-290
	mg/dl	6.30	