RANDOX CE

CALIBRATION SERUM LEVEL 3 (CAL 3)

CAT. NO. CAL 2351 **LOT NO.** 1214UE
SIZE: 20 x 5ml **EXPIRY:** 2023-11-28

GTIN: 05055273200966

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 5 ml 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 3
Cat No. CAL 2351 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 (25 µl - 30 µl) of 0.7M Acetic acid solution to 1 ml 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 is stable for 3 days at 2 - 8°C and levels in the reconstituted serum will rise over the stability period.
It is recommended that the reconstituted serum be 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.

GLDH is stable for 1 day at 2 - 8°C.

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 QC material should be aliquoted into suitable containers without rubber stoppers 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 Method 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.

EC REP Randox Teoranta, Meenmore,
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Rev. 25 Apr '22 me

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CALIBRATION SERUM LEVEL 3 (CAL3)

METHOD Lot. No. 1214UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2023-11-28

Analyte	unit	Target	methods
a-HBDH	U/l	410	Oxobutyrate < 10 mmol/l 37°C
	U/l	310	Oxobutyrate < 10 mmol/l 30°C
	U/l	232	Oxobutyrate < 10 mmol/l 25°C
Albumin	g/l	31.5	Bromocresol Green
	g/dl	3.15	
	g/l	29.9	Bromocresol Purple
	g/dl	2.99	
	g/l	28.8	Turbidimetric Assays
	g/dl	2.88	
Alkaline Phosphatase	U/l	479	Diethanolamine buffer DEA 37°C
	U/l	373	Diethanolamine buffer DEA 30°C
	U/l	306	Diethanolamine buffer DEA 25°C
	U/l	336	AMP optimised to IFCC 37°C
	U/l	262	AMP optimised to IFCC 30°C
	U/l	215	AMP optimised to IFCC 25°C
	U/l	318	AMP non-optimised 37°C
	U/l	248	AMP non-optimised 30°C
	U/l	203	AMP non-optimised 25°C
	U/l	304	Colorimetric 37°C
	U/l	237	Colorimetric 30°C
	U/l	194	Colorimetric 25°C
ALT (GPT)	U/l	143	Colorimetric 37°C
	U/l	106	Colorimetric 30°C
	U/l	81	Colorimetric 25°C
	U/l	152	Tris buffer with P5P 37°C
	U/l	112	Tris buffer with P5P 30°C
	U/l	86	Tris buffer with P5P 25°C
	U/l	143	Tris buffer without P5P 37°C
	U/l	106	Tris buffer without P5P 30°C
	U/l	81	Tris buffer without P5P 25°C
Amylase Pancreatic	U/l	255	Immunoinhibition EPS substrate 37°C
	U/l	249	Roche EPS Liquid 37°C
	U/l	291	Randox Liquid Ethylidene pNPG7 37°C
Amylase Total	U/l	292	Siemens - blocked pNPG7 37°C
	U/l	313	Randox Liquid Ethylidene pNPG7 37°C
	U/l	281	BM/Roche Colorimetric pNPG7 37°C
	U/l	279	Roche Integra 2-chloro-pNPG7 37°C
	U/l	276	Roche liquid stable pNPG7 37°C
	U/l	333	Siemens 2-chloro-pNPG3 37°C

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METHOD Lot. No. 1214UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2023-11-28

Analyte	unit	Target	methods
Amylase Total	U/l	292	Beckman Coulter - blocked pNPG7 37°C
	U/l	292	Beckman Synchron AMY7 37°C
	U/l	310	Abbott Architect Non-IFCC Cal. 37°C
	U/l	354	Abbott Architect IFCC Cal. 37°C
	U/l	277	Beckman CNPG3 (Extinction Coeff) 37°C
AST (GOT)	U/l	149	Colorimetric 37°C
	U/l	101	Colorimetric 30°C
	U/l	71	Colorimetric 25°C
	U/l	193	Tris buffer with P5P 37°C
	U/l	130	Tris buffer with P5P 30°C
	U/l	92	Tris buffer with P5P 25°C
	U/l	147	Tris buffer without P5P 37°C
	U/l	99	Tris buffer without P5P 30°C
	U/l	70	Tris buffer without P5P 25°C
	U/l	184	Tris buffer with P5P NVKC 37°C
	U/l	124	Tris buffer with P5P NVKC 30°C
	U/l	88	Tris buffer with P5P NVKC 25°C
Bicarbonate	mmol/l	15.4	Colorimetric
	mmol/l	15.4	Enzymatic
Bile Acids	µmol/l	44.1	5th Generation Colorimetric
Bilirubin Direct	µmol/l	31.8	Diazo with Sulphanilic Acid
	mg/dl	1.86	
	µmol/l	31.7	Diazo with Dichloroaniline (DCA)
	mg/dl	1.85	
	µmol/l	32.0	Oxidation to Biliverdin/Vanadate
	mg/dl	1.87	
	µmol/l	33.1	Modified Jendrassik
	mg/dl	1.94	
Bilirubin Total	µmol/l	92.8	Diazo with Dichloroaniline (DCA)
	mg/dl	5.43	
	µmol/l	88.7	Diazo with Sulphanilic Acid
	mg/dl	5.19	
	µmol/l	82.0	Dichlorophenyl Diazonium (DPD)
	mg/dl	4.80	
	µmol/l	89.1	Nitrobenzenediazonium salt
	mg/dl	5.21	
	µmol/l	85.2	Diazonium ion
	mg/dl	4.99	
	µmol/l	99.7	Oxidation to Biliverdin/Vanadate
	mg/dl	5.83	
	µmol/l	98.6	Modified Jendrassik
	mg/dl	5.77	
Calcium	mmol/l	3.17	Cresolphthalein complexone
	mg/dl	12.7	

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Size 20 x 5ml Expiry 2023-11-28

Analyte	unit	Target	methods
Calcium	mmol/l	3.09	Ion selective electrode
	mg/dl	12.4	
	mmol/l	3.14	Arsenazo III
	mg/dl	12.6	
	mmol/l	3.16	NM-BAPTA
	mg/dl	12.7	
Chloride	mmol/l	112	ISE indirect
	mmol/l	112	ISE direct
Cholesterol	mmol/l	7.37	Cholesterol Oxidase - Abell Kendall
	mg/dl	284	
	mmol/l	7.46	Cholesterol Oxidase - IDMS
	mg/dl	288	
	mmol/l	7.45	Cholesterol Dehydrogenase
	mg/dl	288	
Cholinesterase	U/l	5436	Colorimetric Butyrylthiocholine 37°C
CK Total	U/l	553	CK-NAC serum start (DGKC) 37°C
	U/l	346	CK-NAC serum start (DGKC) 30°C
	U/l	235	CK-NAC serum start (DGKC) 25°C
	U/l	562	CK-NAC substrate start (DGKC) 37°C
	U/l	352	CK-NAC substrate start (DGKC) 30°C
	U/l	239	CK-NAC substrate start (DGKC) 25°C
	U/l	553	CK-NAC (IFCC) 37°C
	U/l	346	CK-NAC (IFCC) 30°C
	U/l	235	CK-NAC (IFCC) 25°C
Copper	µmol/l	25.6	Atomic absorption
	µg/dl	163	
	µmol/l	25.3	Colorimetric
	µg/dl	161	
Creatinine	µmol/l	340	Alkaline picrate with deproteinization
	mg/dl	3.84	
	µmol/l	360	Alkaline picrate no deproteinization
	mg/dl	4.07	
	µmol/l	374	Enzymatic UV method
	mg/dl	4.23	
	µmol/l	373	Creatinine PAP method
	mg/dl	4.21	
	µmol/l	365	Jaffe rate blanked
	mg/dl	4.13	
	µmol/l	386	Jaffe rate blanked comp. (-26 µmol/l)
	mg/dl	4.36	
	µmol/l	371	Jaffe rate blanked compensated (-18 µmol/l)
	mg/dl	4.19	

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Analyte	unit	Target	methods
Creatinine	µmol/l	362	IDMS traceable
	mg/dl	4.09	
D-3-Hydroxybutyrate	mmol/l	1.16	Tris buffer 100mmol pH 8.5
gamma-GT	U/l	179	Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C
	U/l	141	Gamma glutamyl.-3-carboxy-4-nitroanilide 30°C
	U/l	110	Gamma glutamyl.-3-carboxy-4-nitroanilide 25°C
	U/l	185	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	146	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30°C
	U/l	114	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25°C
	U/l	204	Randox Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C
	U/l	161	Randox Gamma glutamyl.-3-carboxy-4-nitroanilide 30°C
	U/l	126	Randox Gamma glutamyl.-3-carboxy-4-nitroanilide 25°C
GLDH	U/l	29	Triethanolamine buffer 50 mmol 37°C
	U/l	22	Triethanolamine buffer 50 mmol 30°C
	U/l	18	Triethanolamine buffer 50 mmol 25°C
Glucose	mmol/l	15.5	Glucose dehydrogenase
	mg/dl	279	
	mmol/l	15.7	Hexokinase
	mg/dl	283	
	mmol/l	15.6	Glucose oxidase
	mg/dl	281	
Iron	µmol/l	38.7	Colorimetric with ppt.
	µg/dl	216	
	µmol/l	39.1	Colorimetric without ppt.
	µg/dl	219	
Lactate	mmol/l	4.89	Ion selective electrode
	mg/dl	44.1	
	mmol/l	5.54	Colorimetric Lactate Oxidase
	mg/dl	49.9	
	mmol/l	5.34	Enzymatic Electrode
	mg/dl	48.1	
	mmol/l	5.36	UV LDH
	mg/dl	48.3	
LD (LDH)	U/l	358	L->P 37°C
	U/l	258	L->P 30°C
	U/l	182	L->P 25°C
	U/l	802	P->L Scandinavian & Dutch 37°C
	U/l	579	P->L Scandinavian & Dutch 30°C
	U/l	407	P->L Scandinavian & Dutch 25°C
	U/l	728	P->L German methods 37°C
	U/l	526	P->L German methods 30°C
	U/l	369	P->L German methods 25°C
	U/l	732	P->L SFBC 37°C
	U/l	529	P->L SFBC 30°C
	U/l	371	P->L SFBC 25°C

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Size 20 x 5ml Expiry 2023-11-28

Analyte	unit	Target	methods
LD (LDH)	U/l	370	L->P IFCC 37°C
	U/l	267	L->P IFCC 30°C
	U/l	188	L->P IFCC 25°C
Lipase	U/l	64	Other Colorimetric 37°C
	U/l	67	Roche Colorimetric 37°C
	U/l	82	Randox Colorimetric 37°C
Lithium	mmol/l	2.20	Ion selective electrode
	mg/dl	1.53	
	mmol/l	2.09	Spectrophotometric
	mg/dl	1.45	
Magnesium	mmol/l	1.71	Arsenazo III
	mg/dl	4.16	
	mmol/l	1.74	Calmagite
	mg/dl	4.23	
	mmol/l	1.74	Xylidyl Blue
	mg/dl	4.23	
	mmol/l	1.79	Methylthymol blue
	mg/dl	4.35	
	mmol/l	1.73	Chlorphosphonazo III
	mg/dl	4.20	
	mmol/l	1.74	Enzymatic
	mg/dl	4.23	
Osmolality	mOsm/kg	353	Calculated
	mOsm/kg	375	Freezing point depression
Phosphate Inorganic	mmol/l	2.14	Phosphomolybdate enzymatic
	mg/dl	6.63	
	mmol/l	2.13	Phosphomolybdate UV
	mg/dl	6.60	
Potassium	mmol/l	5.94	ISE method - direct
	mmol/l	6.02	ISE method - indirect
	mmol/l	6.13	Enzymatic
Protein Total	g/l	46.8	Biuret reaction end point
	g/dl	4.68	
	g/l	46.4	Biuret reaction kinetic
	g/dl	4.64	
Sodium	mmol/l	155	ISE method - direct
	mmol/l	156	ISE method - indirect
	mmol/l	157	Enzymatic
TIBC	µmol/l	41.7	FE+UIBC(saturation with iron)
	µg/dl	233	
	µmol/l	44.7	Direct Colorimetric
	µg/dl	250	

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CALIBRATION SERUM LEVEL 3 (CAL3)

METHOD Lot. No. 1214UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2023-11-28

Analyte	unit	Target	methods
TIBC	µmol/l	41.3	Calculated from Transferrin
	µg/dl	231	
Triglycerides	mmol/l	2.89	Lipase/GPO-PAP no correction
	mg/dl	256	
	mmol/l	2.88	Lipase/GPO-PAP 0.11mmol/l correction
	mg/dl	255	
	mmol/l	2.92	L/G Kinase EP. no correction
	mg/dl	258	
	mmol/l	2.87	Lipase/Glycerol Dehydrogenase
	mg/dl	254	
Urea	mmol/l	19.4	Urease end point
	mg/dl	117	
	mmol/l	19.6	Urease kinetic
	mg/dl	118	
	mmol/l	19.6	BUN
	mg/dl	55.0	
Uric Acid (Urate)	mmol/l	0.548	Uricase catalase 340nm
	mg/dl	9.21	
	mmol/l	0.555	Uricase peroxidase with ascorbate oxidase
	mg/dl	9.32	
	mmol/l	0.557	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.36	
	mmol/l	0.550	Spectrophotometric at 280-290
	mg/dl	9.24	
	mmol/l	0.549	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	9.22	
Zinc	µmol/l	36.9	Colorimetric with deproteinisation
	µg/dl	241	

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CALIBRATION SERUM LEVEL 3 (CAL3)

Abbott Alinity/ Architect c/ci Systems® Lot. No. 1214UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2023-11-28

Analyte	unit	Target	methods
Albumin	g/l	30.7	Bromocresol Green
	g/dl	3.07	
	g/l	30.4	Bromocresol Purple
	g/dl	3.04	
Alkaline Phosphatase	U/l	321	AMP optimised to IFCC 37°C
	U/l	317	AMP non-optimised 37°C
ALT (GPT)	U/l	146	Tris buffer without P5P 37°C
Amylase Pancreatic	U/l	256	Immunoinhibition EPS substrate 37°C
Amylase Total	U/l	310	Abbott Architect Non-IFCC Cal. 37°C
	U/l	354	Abbott Architect IFCC Cal. 37°C
AST (GOT)	U/l	142	Tris buffer without P5P 37°C
Bicarbonate	mmol/l	13.4	Enzymatic
Bile Acids	µmol/l	45.7	Enzymatic Colorimetric
Bilirubin Direct	µmol/l	32.0	Diazo with Sulphanilic Acid
	mg/dl	1.87	
	µmol/l	31.8	Diazo with Dichloroaniline (DCA)
	mg/dl	1.86	
Bilirubin Total	µmol/l	92.6	Diazo with Dichloroaniline (DCA)
	mg/dl	5.42	
	µmol/l	93.9	Diazo with Sulphanilic Acid
	mg/dl	5.49	
	µmol/l	91.6	Diazonium ion
	mg/dl	5.36	
Calcium	mmol/l	3.11	Arsenazo III
	mg/dl	12.5	
Chloride	mmol/l	114	ISE indirect
Cholesterol	mmol/l	7.31	Cholesterol Oxidase - Abell Kendall
	mg/dl	282	
	mmol/l	7.33	Cholesterol Oxidase - IDMS
	mg/dl	283	
Cholinesterase	U/l	6105	Colorimetric Butyrylthiocholine 37°C
CK Total	U/l	556	CK-NAC serum start (DGKC) 37°C
	U/l	564	CK-NAC (IFCC) 37°C
	U/l	570	Abbott CK-NAC (IFCC) 37°C
Creatinine	µmol/l	381	Alkaline picrate no deproteinization
	mg/dl	4.31	
	µmol/l	374	Enzymatic UV method
	mg/dl	4.22	
	µmol/l	367	Creatinine PAP method
	mg/dl	4.15	

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Size 20 x 5ml Expiry 2023-11-28

Analyte	unit	Target	methods
gamma-GT	U/l	183	Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C
	U/l	182	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
Glucose	mmol/l	15.7	Hexokinase
	mg/dl	282	
	mmol/l	15.6	Glucose oxidase
	mg/dl	281	
Iron	µmol/l	39.5	Colorimetric with ppt.
	µg/dl	221	
	µmol/l	39.3	Colorimetric without ppt.
	µg/dl	220	
Lactate	mmol/l	5.68	Colorimetric Lactate Oxidase
	mg/dl	51.2	
LD (LDH)	U/l	358	L->P 37°C
	U/l	359	L->P IFCC 37°C
Lipase	U/l	59	Other Colorimetric 37°C
Lithium	mmol/l	2.09	Spectrophotometric
	mg/dl	1.45	
Magnesium	mmol/l	1.71	Arsenazo III
	mg/dl	4.16	
	mmol/l	1.73	Enzymatic
	mg/dl	4.20	
Phosphate Inorganic	mmol/l	2.07	Phosphomolybdate enzymatic
	mg/dl	6.42	
	mmol/l	2.08	Phosphomolybdate UV
	mg/dl	6.45	
Potassium	mmol/l	6.00	ISE method - indirect
Protein Total	g/l	47.6	Biuret reaction end point
	g/dl	4.76	
	g/l	47.3	Biuret reaction kinetic
	g/dl	4.73	
Sodium	mmol/l	156	ISE method - indirect
TIBC	µmol/l	43.6	FE+UIBC(saturation with iron)
	µg/dl	244	
	µmol/l	40.9	Calculated from Transferrin
	µg/dl	229	
Triglycerides	mmol/l	2.89	Lipase/GPO-PAP no correction
	mg/dl	256	
	mmol/l	2.91	L/G Kinase EP. no correction
	mg/dl	258	
	mmol/l	2.85	Lipase/Glycerol Dehydrogenase
	mg/dl	252	
UIBC	µmol/l	4.42	Direct Colorimetric
	µg/dl	24.7	

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Size 20 x 5ml Expiry 2023-11-28

Analyte	unit	Target	methods
Urea	mmol/l	19.9	Urease end point
	mg/dl	120	
	mmol/l	19.8	Urease kinetic
	mg/dl	119	
	mmol/l	19.8	BUN
	mg/dl	55.6	
Uric Acid (Urate)	mmol/l	0.552	Uricase peroxidase with ascorbate oxidase
	mg/dl	9.27	
	mmol/l	0.554	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.31	
	mmol/l	0.540	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	9.07	

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CALIBRATION SERUM LEVEL 3 (CAL3)

ABX Pentra 400® Lot. No. 1214UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2023-11-28

Analyte	unit	Target	methods
Albumin	g/l	30.8	Bromocresol Green
	g/dl	3.08	
ALT (GPT)	U/l	152	Tris buffer without P5P 37°C
AST (GOT)	U/l	161	Tris buffer without P5P 37°C
Bilirubin Direct	µmol/l	30.3	Diazo with Dichloroaniline (DCA)
	mg/dl	1.77	
Bilirubin Total	µmol/l	99.7	Diazo with Dichloroaniline (DCA)
	mg/dl	5.83	
Cholesterol	mmol/l	7.76	Cholesterol Oxidase - Abell Kendall
	mg/dl	300	
CK Total	U/l	535	CK-NAC (IFCC) 37°C
gamma-GT	U/l	189	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
Glucose	mmol/l	15.3	Glucose oxidase
	mg/dl	276	
Phosphate Inorganic	mmol/l	2.40	Phosphomolybdate UV
	mg/dl	7.44	
Protein Total	g/l	48.5	Biuret reaction end point
	g/dl	4.85	
Triglycerides	mmol/l	2.96	Lipase/GPO-PAP no correction
	mg/dl	262	
Urea	mmol/l	18.8	Urease kinetic
	mg/dl	113	
	mmol/l	18.8	BUN
	mg/dl	52.8	
Uric Acid (Urate)	mmol/l	0.564	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.48	

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RANDOX

CALIBRATION SERUM LEVEL 3 (CAL3)

Beckman Coulter AU Series® Lot. No. 1214UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2023-11-28

Analyte	unit	Target	methods
Albumin	g/l	29.9	Bromocresol Green
	g/dl	2.99	
	g/l	30.4	Bromocresol Purple
	g/dl	3.04	
Alkaline Phosphatase	U/l	454	Diethanolamine buffer DEA 37°C
	U/l	373	AMP optimised to IFCC 37°C
ALT (GPT)	U/l	150	Beckman Mod. IFCC Ref. without P5P 37°C
	U/l	147	Beckman (Extinction Coefficient) 37°C
Amylase Total	U/l	281	Beckman Synchron CX4/CX5/CX7 37°C
	U/l	292	Beckman Coulter - blocked pNPG7 37°C
	U/l	277	Beckman CNPG3 (Extinction Coeff) 37°C
AST (GOT)	U/l	153	Tris buffer without P5P 37°C
	U/l	157	Beckman Mod. IFCC Ref. without P5P 37°C
	U/l	151	Beckman (Extinction Coefficient) 37°C
Bile Acids	µmol/l	43.3	Enzymatic Colorimetric
Bilirubin Direct	µmol/l	25.3	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.48	
	µmol/l	31.6	Diazo with Dichloroaniline (DCA)
	mg/dl	1.85	
Bilirubin Total	µmol/l	94.7	Dichlorophenyl Diazonium (DPD)
	mg/dl	5.54	
	µmol/l	91.3	DPD (Beckman AU)
	mg/dl	5.34	
Calcium	mmol/l	3.15	Cresolphthalein complexone
	mg/dl	12.6	
	mmol/l	3.16	Arsenazo III
	mg/dl	12.7	
Chloride	mmol/l	112	ISE indirect
Cholesterol	mmol/l	7.52	Cholesterol Oxidase - Abell Kendall
	mg/dl	290	
	mmol/l	7.72	Cholesterol Oxidase - IDMS
	mg/dl	298	
Cholinesterase	U/l	4986	Colorimetric Butyrylthiocholine 37°C
CK Total	U/l	598	CK-NAC (IFCC) 37°C
	U/l	575	Beckman CK-NAC (Extinction Coeff) 37°C
Creatinine	µmol/l	343	Alkaline picrate no deproteinization
	mg/dl	3.88	
	µmol/l	381	Enzymatic UV method
	mg/dl	4.31	

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CALIBRATION SERUM LEVEL 3 (CAL3)

Beckman Coulter AU Series® Lot. No. 1214UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2023-11-28

Analyte	unit	Target	methods
Creatinine	µmol/l	351	Jaffe rate blanked
	mg/dl	3.97	
	µmol/l	373	Jaffe rate blanked compensated (-18 µmol/l)
	mg/dl	4.21	
	µmol/l	360	IDMS traceable
	mg/dl	4.06	
D-3-Hydroxybutyrate	mmol/l	1.16	Tris buffer 100mmol pH 8.5
gamma-GT	U/l	190	Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C
	U/l	188	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	192	Beckman Szasz (Extinction Coeff) 37°C
GLDH	U/l	30	Triethanolamine buffer 50 mmol 37°C
Glucose	mmol/l	16.1	Hexokinase
	mg/dl	291	
	mmol/l	16.0	Glucose oxidase
	mg/dl	288	
Iron	µmol/l	38.4	Colorimetric with ppt.
	µg/dl	215	
	µmol/l	39.8	Colorimetric without ppt.
	µg/dl	222	
Lactate	mmol/l	5.43	Colorimetric Lactate Oxidase
	mg/dl	48.9	
LD (LDH)	U/l	352	L->P 37°C
	U/l	800	P->L Scandinavian & Dutch 37°C
	U/l	703	P->L German methods 37°C
	U/l	365	L->P IFCC 37°C
	U/l	332	L to P Beckman (Extinction Coeff) 37°C
Lipase	U/l	65	Other Colorimetric 37°C
	U/l	85	Randox Colorimetric 37°C
Lithium	mmol/l	2.11	Spectrophotometric
	mg/dl	1.47	
Magnesium	mmol/l	1.76	Xylidyl Blue
	mg/dl	4.28	
Phosphate Inorganic	mmol/l	2.14	Phosphomolybdate UV
	mg/dl	6.63	
Potassium	mmol/l	5.98	ISE method - indirect
Protein Total	g/l	46.6	Biuret reaction end point
	g/dl	4.66	
Sodium	mmol/l	156	ISE method - indirect
TIBC	µmol/l	42.6	FE+UIBC(saturation with iron)
	µg/dl	238	
Triglycerides	mmol/l	2.91	Lipase/GPO-PAP no correction
	mg/dl	258	
	mmol/l	2.93	L/G Kinase EP. no correction
	mg/dl	259	

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CALIBRATION SERUM LEVEL 3 (CAL3)

Beckman Coulter AU Series® Lot. No. 1214UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2023-11-28

Analyte	unit	Target	methods
Urea	mmol/l	19.8	Urease end point
	mg/dl	119	
	mmol/l	19.9	Urease kinetic
	mg/dl	120	
	mmol/l	19.9	BUN
	mg/dl	55.9	
Uric Acid (Urate)	mmol/l	0.570	Uricase peroxidase with ascorbate oxidase
	mg/dl	9.58	
	mmol/l	0.571	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.59	
	mmol/l	0.567	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	9.53	

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CALIBRATION SERUM LEVEL 3 (CAL3)

Beckman DxC600/800® Lot. No. 1214UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2023-11-28

Analyte	unit	Target	methods
Albumin	g/l	30.2	Bromocresol Purple
	g/dl	3.02	
Alkaline Phosphatase	U/l	333	AMP optimised to IFCC 37°C
Amylase Total	U/l	296	Beckman Synchron AMY7 37°C
Calcium	mmol/l	3.08	Ion selective electrode
	mg/dl	12.3	
Chloride	mmol/l	113	ISE indirect
Cholesterol	mmol/l	7.82	Cholesterol Oxidase - IDMS
	mg/dl	302	
Creatinine	µmol/l	380	Alkaline picrate no deproteinization
	mg/dl	4.29	
Glucose	mmol/l	15.2	Glucose oxidase
	mg/dl	274	
Magnesium	mmol/l	1.72	Calmagite
	mg/dl	4.18	
Potassium	mmol/l	6.00	ISE method - indirect
Sodium	mmol/l	155	ISE method - indirect
Triglycerides	mmol/l	2.90	Lipase/GPO-PAP no correction
	mg/dl	257	
Uric Acid (Urate)	mmol/l	0.545	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.16	

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CALIBRATION SERUM LEVEL 3 (CAL3)

COBAS INTEGRA® Lot. No. 1214UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2023-11-28

Analyte	unit	Target	methods
Albumin	g/l	32.7	Bromocresol Green
	g/dl	3.27	
	g/l	28.6	Turbidimetric Assays
	g/dl	2.86	
Alkaline Phosphatase	U/l	306	Roche Integra AMP buffer 37°C
	U/l	238	Roche Integra AMP buffer 30°C
	U/l	196	Roche Integra AMP buffer 25°C
ALT (GPT)	U/l	136	Tris buffer without P5P 37°C
	U/l	101	Tris buffer without P5P 30°C
	U/l	77	Tris buffer without P5P 25°C
Amylase Total	U/l	283	Roche Integra 2-chloro-pNPG7 37°C
	U/l	283	Roche liquid stable pNPG7 37°C
AST (GOT)	U/l	146	Tris buffer without P5P 37°C
	U/l	99	Tris buffer without P5P 30°C
	U/l	69	Tris buffer without P5P 25°C
Bilirubin Direct	µmol/l	33.9	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.98	
	µmol/l	33.4	Diazo with Sulphanilic Acid
	mg/dl	1.95	
	µmol/l	33.5	Roche DPD JG standardised
	mg/dl	1.96	
Bilirubin Total	µmol/l	85.5	Diazo with Sulphanilic Acid
	mg/dl	5.00	
	µmol/l	82.9	Dichlorophenyl Diazonium (DPD)
	mg/dl	4.85	
	µmol/l	86.4	Diazonium ion
	mg/dl	5.06	
Calcium	mmol/l	3.16	Cresolphthalein complexone
	mg/dl	12.7	
	mmol/l	3.16	NM-BAPTA
	mg/dl	12.7	
Chloride	mmol/l	113	ISE indirect
Cholesterol	mmol/l	7.35	Cholesterol Oxidase - Abell Kendall
	mg/dl	284	
	mmol/l	7.32	Cholesterol Oxidase - IDMS
	mg/dl	283	
CK Total	U/l	546	CK-NAC (IFCC) 37°C
	U/l	342	CK-NAC (IFCC) 30°C
	U/l	232	CK-NAC (IFCC) 25°C

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CALIBRATION SERUM LEVEL 3 (CAL3)

COBAS INTEGRA® Lot. No. 1214UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2023-11-28

Analyte	unit	Target	methods
Creatinine	µmol/l	348	Alkaline picrate no deproteinization
	mg/dl	3.93	
	µmol/l	375	Roche Creatinine Plus
	mg/dl	4.23	
	µmol/l	383	Jaffe rate blanked comp. (-26 µmol/l)
	mg/dl	4.33	
	µmol/l	367	Jaffe rate blanked compensated (-18 µmol/l)
	mg/dl	4.15	
gamma-GT	U/l	171	Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C
	U/l	135	Gamma glutamyl.-3-carboxy-4-nitroanilide 30°C
	U/l	106	Gamma glutamyl.-3-carboxy-4-nitroanilide 25°C
	U/l	190	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	150	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30°C
	U/l	117	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25°C
Glucose	mmol/l	15.9	Hexokinase
	mg/dl	287	
Iron	µmol/l	39.4	Colorimetric with ppt.
	µg/dl	220	
	µmol/l	39.7	Colorimetric without ppt.
	µg/dl	222	
Lactate	mmol/l	5.53	Colorimetric Lactate Oxidase
	mg/dl	49.8	
LD (LDH)	U/l	379	L->P IFCC 37°C
	U/l	274	L->P IFCC 30°C
	U/l	192	L->P IFCC 25°C
Lipase	U/l	61	Roche Colorimetric 37°C
Lithium	mmol/l	2.14	Ion selective electrode
	mg/dl	1.49	
Magnesium	mmol/l	1.74	Xylidyl Blue
	mg/dl	4.23	
	mmol/l	1.72	Chlorphosphonazo III
	mg/dl	4.18	
Phosphate Inorganic	mmol/l	2.20	Phosphomolybdate enzymatic
	mg/dl	6.82	
	mmol/l	2.18	Phosphomolybdate UV
	mg/dl	6.76	
Potassium	mmol/l	6.02	ISE method - indirect
Protein Total	g/l	44.4	Biuret reaction end point
	g/dl	4.44	
	g/l	45.8	Biuret reaction kinetic
	g/dl	4.58	
Sodium	mmol/l	156	ISE method - indirect
TIBC	µmol/l	40.0	FE+UIBC(saturation with iron)
	µg/dl	223	

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CALIBRATION SERUM LEVEL 3 (CAL3)

COBAS INTEGRA® Lot. No. 1214UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2023-11-28

Analyte	unit	Target	methods
Triglycerides	mmol/l	2.89	Lipase/GPO-PAP no correction
	mg/dl	256	
	mmol/l	2.90	Lipase/GPO-PAP 0.11mmol/l correction
	mg/dl	257	
	mmol/l	2.88	Lipase/Glycerol Dehydrogenase
	mg/dl	255	
Urea	mmol/l	19.0	Urease kinetic
	mg/dl	114	
	mmol/l	19.0	BUN
	mg/dl	53.3	
Uric Acid (Urate)	mmol/l	0.555	Uricase peroxidase with ascorbate oxidase
	mg/dl	9.32	
	mmol/l	0.557	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.36	
	mmol/l	0.560	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	9.41	

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CALIBRATION SERUM LEVEL 3 (CAL3)

Konelab 20/30/60®/Thermo Scientific Indiko Plus® Lot. No. 1214UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2023-11-28

Analyte	unit	Target	methods
Albumin	g/l	30.1	Bromocresol Green
	g/dl	3.01	
Alkaline Phosphatase	U/l	466	Diethanolamine buffer DEA 37°C
	U/l	363	Diethanolamine buffer DEA 30°C
	U/l	298	Diethanolamine buffer DEA 25°C
	U/l	340	AMP optimised to IFCC 37°C
	U/l	265	AMP optimised to IFCC 30°C
	U/l	217	AMP optimised to IFCC 25°C
ALT (GPT)	U/l	156	Tris buffer without P5P 37°C
	U/l	115	Tris buffer without P5P 30°C
	U/l	88	Tris buffer without P5P 25°C
AST (GOT)	U/l	169	Tris buffer without P5P 37°C
	U/l	114	Tris buffer without P5P 30°C
	U/l	80	Tris buffer without P5P 25°C
Bilirubin Total	µmol/l	88.4	Diazo with Sulphanilic Acid
	mg/dl	5.17	
	µmol/l	89.1	Nitrobenzenediazonium salt
	mg/dl	5.21	
Calcium	mmol/l	3.33	Arsenazo III
	mg/dl	13.3	
Cholesterol	mmol/l	7.46	Cholesterol Oxidase - Abell Kendall
	mg/dl	288	
CK Total	U/l	588	CK-NAC (IFCC) 37°C
	U/l	368	CK-NAC (IFCC) 30°C
	U/l	250	CK-NAC (IFCC) 25°C
Creatinine	µmol/l	372	Alkaline picrate no deproteinization
	mg/dl	4.20	
gamma-GT	U/l	184	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	145	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30°C
	U/l	114	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25°C
Glucose	mmol/l	15.4	Glucose oxidase
	mg/dl	278	
Iron	µmol/l	40.4	Colorimetric without ppt.
	µg/dl	226	
Magnesium	mmol/l	1.75	Xylidyl Blue
	mg/dl	4.25	
Phosphate Inorganic	mmol/l	2.19	Phosphomolybdate UV
	mg/dl	6.79	
Potassium	mmol/l	5.94	ISE method - direct

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CALIBRATION SERUM LEVEL 3 (CAL3)

Konelab 20/30/60®/Thermo Scientific Indiko Plus® Lot. No. 1214UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2023-11-28

Analyte	unit	Target	methods
Protein Total	g/l	48.2	Biuret reaction end point
	g/dl	4.82	
Sodium	mmol/l	154	ISE method - direct
Triglycerides	mmol/l	3.01	Lipase/GPO-PAP no correction
	mg/dl	266	
Urea	mmol/l	18.6	Urease kinetic
	mg/dl	112	
	mmol/l	18.6	BUN
	mg/dl	52.2	
Uric Acid (Urate)	mmol/l	0.586	Uricase peroxidase with ascorbate oxidase
	mg/dl	9.84	
	mmol/l	0.579	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.73	

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CALIBRATION SERUM LEVEL 3 (CAL3)

Roche Cobas 6000 c501 e601 Lot. No. 1214UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2023-11-28

Analyte	unit	Target	methods
Albumin	g/l	32.7	Bromocresol Green
	g/dl	3.27	
	g/l	28.1	Turbidimetric Assays
	g/dl	2.81	
Alkaline Phosphatase	U/l	301	Roche Integra AMP buffer 37°C
	U/l	234	Roche Integra AMP buffer 30°C
	U/l	192	Roche Integra AMP buffer 25°C
ALT (GPT)	U/l	140	Tris buffer without P5P 37°C
	U/l	104	Tris buffer without P5P 30°C
	U/l	79	Tris buffer without P5P 25°C
Amylase Pancreatic	U/l	249	Roche EPS Liquid 37°C
Amylase Total	U/l	273	Roche Integra 2-chloro-pNPG7 37°C
	U/l	274	Roche liquid stable pNPG7 37°C
AST (GOT)	U/l	146	Tris buffer without P5P 37°C
	U/l	99	Tris buffer without P5P 30°C
	U/l	69	Tris buffer without P5P 25°C
Bicarbonate	mmol/l	15.3	Colorimetric
	mmol/l	15.1	Enzymatic
Bile Acids	µmol/l	44.0	Enzymatic Colorimetric
Bilirubin Direct	µmol/l	33.1	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.94	
	µmol/l	32.6	Diazo with Sulphanilic Acid
	mg/dl	1.91	
	µmol/l	32.9	Roche DPD JG standardised
	mg/dl	1.92	
Bilirubin Total	µmol/l	79.4	Diazo with Sulphanilic Acid
	mg/dl	4.65	
	µmol/l	81.3	Dichlorophenyl Diazonium (DPD)
	mg/dl	4.76	
	µmol/l	80.9	Diazonium ion
	mg/dl	4.73	
Calcium	mmol/l	3.15	Cresolphthalein complexone
	mg/dl	12.6	
	mmol/l	3.16	NM-BAPTA
	mg/dl	12.7	
Chloride	mmol/l	110	ISE indirect
Cholesterol	mmol/l	7.34	Cholesterol Oxidase - Abell Kendall
	mg/dl	283	
	mmol/l	7.35	Cholesterol Oxidase - IDMS
	mg/dl	284	

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CALIBRATION SERUM LEVEL 3 (CAL3)

Roche Cobas 6000 c501 e601 Lot. No. 1214UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2023-11-28

Analyte	unit	Target	methods
Cholinesterase	U/l	5159	Colorimetric Butyrylthiocholine 37°C
CK Total	U/l	553	CK-NAC substrate start (DGKC) 37°C
	U/l	346	CK-NAC substrate start (DGKC) 30°C
	U/l	235	CK-NAC substrate start (DGKC) 25°C
	U/l	545	CK-NAC (IFCC) 37°C
	U/l	341	CK-NAC (IFCC) 30°C
	U/l	232	CK-NAC (IFCC) 25°C
Creatinine	µmol/l	361	Alkaline picrate no deproteinization
	mg/dl	4.08	
	µmol/l	375	Roche Creatinine Plus
	mg/dl	4.24	
	µmol/l	385	Jaffe rate blanked comp. (-26 µmol/l)
	mg/dl	4.35	
	µmol/l	379	Jaffe rate blanked compensated (-18 µmol/l)
	mg/dl	4.28	
D-3-Hydroxybutyrate	mmol/l	1.18	Tris buffer 100mmol pH 8.5
gamma-GT	U/l	167	Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C
	U/l	132	Gamma glutamyl.-3-carboxy-4-nitroanilide 30°C
	U/l	103	Gamma glutamyl.-3-carboxy-4-nitroanilide 25°C
	U/l	189	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	149	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30°C
	U/l	117	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25°C
GLDH	U/l	27	Triethanolamine buffer 50 mmol 37°C
	U/l	21	Triethanolamine buffer 50 mmol 30°C
	U/l	17	Triethanolamine buffer 50 mmol 25°C
Glucose	mmol/l	15.6	Hexokinase
	mg/dl	281	
Iron	µmol/l	38.5	Colorimetric with ppt.
	µg/dl	215	
	µmol/l	39.0	Colorimetric without ppt.
	µg/dl	218	
Lactate	mmol/l	5.52	Colorimetric Lactate Oxidase
	mg/dl	49.7	
LD (LDH)	U/l	389	L->P 37°C
	U/l	281	L->P 30°C
	U/l	197	L->P 25°C
	U/l	373	L->P IFCC 37°C
	U/l	269	L->P IFCC 30°C
	U/l	189	L->P IFCC 25°C
Lipase	U/l	67	Roche Colorimetric 37°C
Lithium	mmol/l	2.09	Spectrophotometric
	mg/dl	1.45	

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RANDOX

CALIBRATION SERUM LEVEL 3 (CAL3)

Roche Cobas 6000 c501 e601 Lot. No. 1214UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2023-11-28

Analyte	unit	Target	methods
Magnesium	mmol/l	1.74	Xylidyl Blue
	mg/dl	4.23	
	mmol/l	1.75	Chlorphosphonazo III
	mg/dl	4.25	
Phosphate Inorganic	mmol/l	2.15	Phosphomolybdate enzymatic
	mg/dl	6.67	
	mmol/l	2.12	Phosphomolybdate UV
	mg/dl	6.57	
Potassium	mmol/l	6.05	ISE method - indirect
Protein Total	g/l	46.4	Biuret reaction end point
	g/dl	4.64	
	g/l	45.9	Biuret reaction kinetic
	g/dl	4.59	
Sodium	mmol/l	156	ISE method - indirect
TIBC	µmol/l	39.9	FE+UIBC(saturation with iron)
	µg/dl	223	
	µmol/l	44.9	Calculated from Transferrin
	µg/dl	251	
Triglycerides	mmol/l	2.86	Lipase/GPO-PAP no correction
	mg/dl	253	
	mmol/l	2.90	L/G Kinase EP. no correction
	mg/dl	257	
Urea	mmol/l	19.5	Urease kinetic
	mg/dl	117	
	mmol/l	19.5	BUN
	mg/dl	54.7	
Uric Acid (Urate)	mmol/l	0.534	Uricase peroxidase with ascorbate oxidase
	mg/dl	8.97	
	mmol/l	0.534	Uricase peroxidase no ascorbate oxidase
	mg/dl	8.97	
	mmol/l	0.538	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	9.04	

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CALIBRATION SERUM LEVEL 3 (CAL3)

Roche Cobas C111® Lot. No. 1214UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2023-11-28

Analyte	unit	Target	methods
Alkaline Phosphatase	U/l	327	Roche Integra AMP buffer 37°C
	U/l	255	Roche Integra AMP buffer 30°C
	U/l	209	Roche Integra AMP buffer 25°C
ALT (GPT)	U/l	135	Tris buffer without P5P 37°C
	U/l	100	Tris buffer without P5P 30°C
	U/l	76	Tris buffer without P5P 25°C
Amylase Total	U/l	284	Roche liquid stable pNPG7 37°C
AST (GOT)	U/l	140	Tris buffer without P5P 37°C
	U/l	95	Tris buffer without P5P 30°C
	U/l	67	Tris buffer without P5P 25°C
Bilirubin Direct	µmol/l	35.0	Dichlorophenyl Diazonium (DPD)
	mg/dl	2.05	
Bilirubin Total	µmol/l	91.7	Diazo with Sulphanilic Acid
	mg/dl	5.36	
	µmol/l	85.9	Dichlorophenyl Diazonium (DPD)
	mg/dl	5.02	
	µmol/l	80.4	Diazonium ion
	mg/dl	4.70	
Cholesterol	mmol/l	7.20	Cholesterol Oxidase - Abell Kendall
	mg/dl	278	
Creatinine	µmol/l	377	Roche Creatinine Plus
	mg/dl	4.26	
	µmol/l	374	Jaffe rate blanked compensated (-18 µmol/l)
	mg/dl	4.23	
gamma-GT	U/l	172	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	136	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30°C
	U/l	106	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25°C
Glucose	mmol/l	15.8	Hexokinase
	mg/dl	285	
Phosphate Inorganic	mmol/l	2.20	Phosphomolybdate UV
	mg/dl	6.82	
Triglycerides	mmol/l	2.86	Lipase/GPO-PAP no correction
	mg/dl	253	
Urea	mmol/l	19.3	Urease kinetic
	mg/dl	116	
	mmol/l	19.3	BUN
	mg/dl	54.2	
Uric Acid (Urate)	mmol/l	0.548	Uricase peroxidase with ascorbate oxidase
	mg/dl	9.21	

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CALIBRATION SERUM LEVEL 3 (CAL3)

Roche Cobas C311® Lot. No. 1214UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2023-11-28

Analyte	unit	Target	methods
Albumin	g/l	33.0	Bromocresol Green
	g/dl	3.30	
	g/l	30.3	Bromocresol Purple
	g/dl	3.03	
Alkaline Phosphatase	U/l	294	Roche Integra AMP buffer 37°C
	U/l	229	Roche Integra AMP buffer 30°C
	U/l	188	Roche Integra AMP buffer 25°C
ALT (GPT)	U/l	141	Tris buffer without P5P 37°C
	U/l	104	Tris buffer without P5P 30°C
	U/l	79	Tris buffer without P5P 25°C
Amylase Total	U/l	279	BM/Roche Colorimetric pNPG7 37°C
	U/l	280	Roche liquid stable pNPG7 37°C
AST (GOT)	U/l	147	Tris buffer without P5P 37°C
	U/l	99	Tris buffer without P5P 30°C
	U/l	70	Tris buffer without P5P 25°C
Bicarbonate	mmol/l	13.7	Enzymatic
Bilirubin Direct	µmol/l	32.3	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.89	
	µmol/l	31.4	Diazo with Sulphanilic Acid
	mg/dl	1.84	
	µmol/l	32.4	Roche DPD JG standardised
	mg/dl	1.89	
Bilirubin Total	µmol/l	82.7	Diazo with Sulphanilic Acid
	mg/dl	4.84	
	µmol/l	82.1	Dichlorophenyl Diazonium (DPD)
	mg/dl	4.80	
	µmol/l	82.6	Diazonium ion
	mg/dl	4.83	
Calcium	mmol/l	3.16	Cresolphthalein complexone
	mg/dl	12.7	
	mmol/l	3.19	NM-BAPTA
	mg/dl	12.8	
Chloride	mmol/l	110	ISE indirect
Cholesterol	mmol/l	7.43	Cholesterol Oxidase - Abell Kendall
	mg/dl	287	
	mmol/l	7.29	Cholesterol Oxidase - IDMS
	mg/dl	281	
CK Total	U/l	553	CK-NAC (IFCC) 37°C
	U/l	346	CK-NAC (IFCC) 30°C
	U/l	235	CK-NAC (IFCC) 25°C

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CALIBRATION SERUM LEVEL 3 (CAL3)

Roche Cobas C311® Lot. No. 1214UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2023-11-28

Analyte	unit	Target	methods
Creatinine	µmol/l	363	Alkaline picrate no deproteinization
	mg/dl	4.10	
	µmol/l	380	Roche Creatinine Plus
	mg/dl	4.29	
	µmol/l	359	Jaffe rate blanked
	mg/dl	4.06	
	µmol/l	391	Jaffe rate blanked comp. (-26 µmol/l)
	mg/dl	4.42	
gamma-GT	U/l	171	Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C
	U/l	135	Gamma glutamyl.-3-carboxy-4-nitroanilide 30°C
	U/l	106	Gamma glutamyl.-3-carboxy-4-nitroanilide 25°C
	U/l	192	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	151	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30°C
	U/l	118	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25°C
Glucose	mmol/l	15.7	Hexokinase
	mg/dl	283	
	mmol/l	16.1	Glucose oxidase
	mg/dl	290	
Iron	µmol/l	39.4	Colorimetric with ppt.
	µg/dl	220	
	µmol/l	39.3	Colorimetric without ppt.
	µg/dl	220	
Lactate	mmol/l	5.55	Colorimetric Lactate Oxidase
	mg/dl	50.0	
LD (LDH)	U/l	722	P->L German methods 37°C
	U/l	521	P->L German methods 30°C
	U/l	366	P->L German methods 25°C
	U/l	374	L->P IFCC 37°C
	U/l	270	L->P IFCC 30°C
	U/l	190	L->P IFCC 25°C
Lipase	U/l	68	Roche Colorimetric 37°C
Magnesium	mmol/l	1.73	Xylidyl Blue
	mg/dl	4.20	
	mmol/l	1.70	Chlorphosphonazo III
	mg/dl	4.13	
Phosphate Inorganic	mmol/l	2.15	Phosphomolybdate UV
	mg/dl	6.67	
Potassium	mmol/l	6.05	ISE method - indirect
Protein Total	g/l	46.8	Biuret reaction end point
	g/dl	4.68	
Sodium	mmol/l	156	ISE method - indirect
Triglycerides	mmol/l	2.87	Lipase/GPO-PAP no correction
	mg/dl	254	

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CALIBRATION SERUM LEVEL 3 (CAL3)

Roche Cobas C311® Lot. No. 1214UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2023-11-28

Analyte	unit	Target	methods
Triglycerides	mmol/l	2.83	Lipase/Glycerol Dehydrogenase
	mg/dl	250	
Urea	mmol/l	19.9	Urease kinetic
	mg/dl	120	
	mmol/l	19.9	BUN
	mg/dl	55.9	
Uric Acid (Urate)	mmol/l	0.550	Uricase peroxidase with ascorbate oxidase
	mg/dl	9.24	
	mmol/l	0.548	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.21	
	mmol/l	0.552	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	9.27	

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CALIBRATION SERUM LEVEL 3 (CAL3)

Roche Cobas c701 / c702 / c711 Lot. No. 1214UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2023-11-28

Analyte	unit	Target	methods
Albumin	g/l	32.7	Bromocresol Green
	g/dl	3.27	
	g/l	27.8	Bromocresol Purple
	g/dl	2.78	
	g/l	30.0	Turbidimetric Assays
	g/dl	3.00	
Alkaline Phosphatase	U/l	294	Roche Integra AMP buffer 37°C
	U/l	229	Roche Integra AMP buffer 30°C
	U/l	188	Roche Integra AMP buffer 25°C
ALT (GPT)	U/l	140	Tris buffer without P5P 37°C
	U/l	104	Tris buffer without P5P 30°C
	U/l	79	Tris buffer without P5P 25°C
Amylase Pancreatic	U/l	249	Roche EPS Liquid 37°C
Amylase Total	U/l	276	Roche liquid stable pNPG7 37°C
AST (GOT)	U/l	146	Tris buffer without P5P 37°C
	U/l	99	Tris buffer without P5P 30°C
	U/l	69	Tris buffer without P5P 25°C
Bicarbonate	mmol/l	15.9	Enzymatic
Bile Acids	µmol/l	43.5	Enzymatic Colorimetric
Bilirubin Direct	µmol/l	34.2	Dichlorophenyl Diazonium (DPD)
	mg/dl	2.00	
	µmol/l	33.2	Diazo with Sulphanilic Acid
	mg/dl	1.94	
	µmol/l	33.3	Roche DPD JG standardised
	mg/dl	1.95	
	µmol/l	28.5	Oxidation to Biliverdin/Vanadate
	mg/dl	1.67	
Bilirubin Total	µmol/l	81.5	Dichlorophenyl Diazonium (DPD)
	mg/dl	4.77	
	µmol/l	81.6	Diazonium ion
	mg/dl	4.77	
Calcium	mmol/l	3.19	Cresolphthalein complexone
	mg/dl	12.8	
	mmol/l	3.13	NM-BAPTA
	mg/dl	12.5	
Cholesterol	mmol/l	7.40	Cholesterol Oxidase - Abell Kendall
	mg/dl	286	
	mmol/l	7.35	Cholesterol Oxidase - IDMS
	mg/dl	284	

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CALIBRATION SERUM LEVEL 3 (CAL3)

Roche Cobas c701 / c702 / c711 Lot. No. 1214UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2023-11-28

Analyte	unit	Target	methods
Cholinesterase	U/l	5066	Colorimetric Butyrylthiocholine 37°C
CK Total	U/l	545	CK-NAC (IFCC) 37°C
	U/l	341	CK-NAC (IFCC) 30°C
	U/l	232	CK-NAC (IFCC) 25°C
Creatinine	µmol/l	379	Roche Creatinine Plus
	mg/dl	4.28	
	µmol/l	391	Jaffe rate blanked comp. (-26 µmol/l)
	mg/dl	4.42	
gamma-GT	U/l	163	Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C
	U/l	128	Gamma glutamyl.-3-carboxy-4-nitroanilide 30°C
	U/l	101	Gamma glutamyl.-3-carboxy-4-nitroanilide 25°C
	U/l	185	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	146	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30°C
	U/l	114	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25°C
Glucose	mmol/l	15.5	Hexokinase
	mg/dl	280	
Iron	µmol/l	38.8	Colorimetric with ppt.
	µg/dl	217	
	µmol/l	37.8	Colorimetric without ppt.
	µg/dl	211	
Lactate	mmol/l	5.49	Colorimetric Lactate Oxidase
	mg/dl	49.5	
LD (LDH)	U/l	374	L->P IFCC 37°C
	U/l	270	L->P IFCC 30°C
	U/l	190	L->P IFCC 25°C
Lithium	mmol/l	2.11	Spectrophotometric
	mg/dl	1.47	
Magnesium	mmol/l	1.76	Xylidyl Blue
	mg/dl	4.28	
Phosphate Inorganic	mmol/l	2.11	Phosphomolybdate UV
	mg/dl	6.54	
Protein Total	g/l	46.2	Biuret reaction end point
	g/dl	4.62	
TIBC	µmol/l	41.0	FE+UIBC(saturation with iron)
	µg/dl	229	
Triglycerides	mmol/l	2.86	Lipase/GPO-PAP no correction
	mg/dl	253	
	mmol/l	2.89	L/G Kinase EP. no correction
	mg/dl	256	
Urea	mmol/l	19.4	Urease kinetic
	mg/dl	117	
	mmol/l	19.4	BUN
	mg/dl	54.4	

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CALIBRATION SERUM LEVEL 3 (CAL3)

Roche Cobas c701 / c702 / c711 Lot. No. 1214UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2023-11-28

Analyte	unit	Target	methods
Uric Acid (Urate)	mmol/l	0.535	Uricase peroxidase with ascorbate oxidase
	mg/dl	8.99	
	mmol/l	0.536	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.00	
	mmol/l	0.535	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	8.99	

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CALIBRATION SERUM LEVEL 3 (CAL3)

SIEMENS ADVIA 1200/1650/1800/2400® Lot. No. 1214UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2023-11-28

Analyte	unit	Target	methods
Albumin	g/l	31.1	Bromocresol Green
	g/dl	3.11	
	g/l	29.0	Bromocresol Purple
	g/dl	2.90	
Alkaline Phosphatase	U/l	297	AMP optimised to IFCC 37°C
ALT (GPT)	U/l	163	Tris buffer without P5P 37°C
Amylase Total	U/l	287	Siemens - blocked pNPG7 37°C
AST (GOT)	U/l	163	Tris buffer without P5P 37°C
Bicarbonate	mmol/l	16.9	Enzymatic
Bilirubin Direct	µmol/l	31.2	Oxidation to Biliverdin/Vanadate
	mg/dl	1.83	
Bilirubin Total	µmol/l	99.7	Oxidation to Biliverdin/Vanadate
	mg/dl	5.83	
Calcium	mmol/l	3.21	Cresolphthalein complexone
	mg/dl	12.9	
	mmol/l	3.14	Arsenazo III
	mg/dl	12.6	
Chloride	mmol/l	114	ISE indirect
Cholesterol	mmol/l	7.53	Cholesterol Oxidase - Abell Kendall
	mg/dl	291	
CK Total	U/l	587	CK-NAC (IFCC) 37°C
Creatinine	µmol/l	376	Enzymatic UV method
	mg/dl	4.25	
	µmol/l	380	Jaffe rate blanked comp. (-26 µmol/l)
	mg/dl	4.29	
gamma-GT	U/l	169	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
Glucose	mmol/l	15.5	Hexokinase
	mg/dl	279	
	mmol/l	15.6	Glucose oxidase
	mg/dl	281	
Iron	µmol/l	39.0	Colorimetric without ppt.
	µg/dl	218	
Lactate	mmol/l	5.48	Colorimetric Lactate Oxidase
	mg/dl	49.4	
LD (LDH)	U/l	738	P->L German methods 37°C
	U/l	364	L->P IFCC 37°C
Lipase	U/l	72	Other Colorimetric 37°C
Magnesium	mmol/l	1.68	Xylidyl Blue
	mg/dl	4.08	

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CALIBRATION SERUM LEVEL 3 (CAL3)

SIEMENS ADVIA 1200/1650/1800/2400® Lot. No. 1214UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2023-11-28

Analyte	unit	Target	methods
Phosphate Inorganic	mmol/l	2.21	Phosphomolybdate UV
	mg/dl	6.85	
Potassium	mmol/l	6.10	ISE method - indirect
Protein Total	g/l	47.1	Biuret reaction end point
	g/dl	4.71	
Sodium	mmol/l	158	ISE method - indirect
TIBC	µmol/l	39.6	Calculated from Transferrin
	µg/dl	221	
Triglycerides	mmol/l	2.97	Lipase/GPO-PAP no correction
	mg/dl	263	
Urea	mmol/l	20.0	Urease kinetic
	mg/dl	120	
	mmol/l	20.0	BUN
	mg/dl	56.1	
Uric Acid (Urate)	mmol/l	0.562	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.44	

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CALIBRATION SERUM LEVEL 3 (CAL3)

Siemens Atellica Solution Lot. No. 1214UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2023-11-28

Analyte	unit	Target	methods
Albumin	g/l	30.4	Bromocresol Green
	g/dl	3.04	
	g/l	29.5	Bromocresol Purple
	g/dl	2.95	
Alkaline Phosphatase	U/l	298	AMP optimised to IFCC 37°C
ALT (GPT)	U/l	159	Tris buffer without P5P 37°C
Amylase Total	U/l	306	Siemens - blocked pNPG7 37°C
AST (GOT)	U/l	164	Tris buffer without P5P 37°C
Bicarbonate	mmol/l	17.7	Enzymatic
Bilirubin Direct	µmol/l	34.4	Oxidation to Biliverdin/Vanadate
	mg/dl	2.01	
Bilirubin Total	µmol/l	99.7	Oxidation to Biliverdin/Vanadate
	mg/dl	5.83	
Calcium	mmol/l	3.26	Cresolphthalein complexone
	mg/dl	13.1	
	mmol/l	3.14	Arsenazo III
	mg/dl	12.6	
Chloride	mmol/l	117	ISE indirect
Cholesterol	mmol/l	7.52	Cholesterol Oxidase - Abell Kendall
	mg/dl	290	
	mmol/l	7.48	Cholesterol Oxidase - IDMS
	mg/dl	289	
CK Total	U/l	550	CK-NAC (IFCC) 37°C
Creatinine	µmol/l	376	Enzymatic UV method
	mg/dl	4.25	
	µmol/l	388	Jaffe rate blanked comp. (-26 µmol/l)
	mg/dl	4.38	
gamma-GT	U/l	168	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
Glucose	mmol/l	15.2	Hexokinase
	mg/dl	274	
	mmol/l	15.2	Glucose oxidase
	mg/dl	274	
Iron	µmol/l	39.4	Colorimetric without ppt.
	µg/dl	220	
Lactate	mmol/l	5.68	Colorimetric Lactate Oxidase
	mg/dl	51.2	
LD (LDH)	U/l	365	L->P IFCC 37°C
Lipase	U/l	70	Other Colorimetric 37°C
Lithium	mmol/l	2.12	Spectrophotometric
	mg/dl	1.47	

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CALIBRATION SERUM LEVEL 3 (CAL3)

Siemens Atellica Solution Lot. No. 1214UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2023-11-28

Analyte	unit	Target	methods
Magnesium	mmol/l	1.71	Xylidyl Blue
	mg/dl	4.16	
Phosphate Inorganic	mmol/l	2.21	Phosphomolybdate UV
	mg/dl	6.85	
Potassium	mmol/l	5.90	ISE method - indirect
Protein Total	g/l	46.1	Biuret reaction end point
	g/dl	4.61	
Sodium	mmol/l	157	ISE method - indirect
TIBC	µmol/l	45.7	Direct Colorimetric
	µg/dl	256	
Triglycerides	mmol/l	3.07	Lipase/GPO-PAP no correction
	mg/dl	272	
Urea	mmol/l	20.0	Urease kinetic
	mg/dl	120	
	mmol/l	20.0	BUN
	mg/dl	56.1	
Uric Acid (Urate)	mmol/l	0.566	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.51	

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RANDOX

CALIBRATION SERUM LEVEL 3 (CAL3)

SIEMENS DIMENSION EXL® Lot. No. 1214UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2023-11-28

Analyte	unit	Target	methods
Albumin	g/l	30.2	Bromocresol Purple
	g/dl	3.02	
Alkaline Phosphatase	U/l	295	Siemens Dimension AMP buffer 37°C
ALT (GPT)	U/l	156	Tris buffer with P5P 37°C
	U/l	157	Tris buffer with P5P NVKC 37°C
	U/l	157	Siemens Dade Standard Non IFCC Correlated 37°C
Amylase Total	U/l	333	Siemens 2-chloro-pNPG3 37°C
AST (GOT)	U/l	180	Tris buffer with P5P 37°C
	U/l	184	Tris buffer with P5P NVKC 37°C
	U/l	185	Siemens Dade Standard Non IFCC Correlated 37°C
Bilirubin Direct	µmol/l	20.0	Diazo/Sulphanilic Siemens Dimension
	mg/dl	1.17	
Bilirubin Total	µmol/l	89.6	Diazo with Sulphanilic Acid
	mg/dl	5.24	
Calcium	mmol/l	3.16	Cresolphthalein complexone
	mg/dl	12.7	
Chloride	mmol/l	114	ISE indirect
Cholesterol	mmol/l	7.12	Dimension-Siemens reagents
	mg/dl	275	
CK Total	U/l	545	CK-NAC (IFCC) 37°C
Creatinine	µmol/l	373	Alkaline picrate no deproteinization
	mg/dl	4.21	
	µmol/l	380	Creatinine PAP method
	mg/dl	4.29	
	µmol/l	376	Jaffe rate blanked
	mg/dl	4.25	
gamma-GT	U/l	199	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	224	Siemens Dimension (non IFCC) 37°C
Glucose	mmol/l	15.8	Hexokinase
	mg/dl	285	
Iron	µmol/l	37.8	Colorimetric without ppt.
	µg/dl	211	
LD (LDH)	U/l	367	L->P IFCC 37°C
Magnesium	mmol/l	1.79	Methylthymol blue
	mg/dl	4.35	
Phosphate Inorganic	mmol/l	2.21	Phosphomolybdate enzymatic
	mg/dl	6.85	
	mmol/l	2.16	Phosphomolybdate UV
	mg/dl	6.70	

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RANDOX

CALIBRATION SERUM LEVEL 3 (CAL3)

SIEMENS DIMENSION EXL® Lot. No. 1214UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2023-11-28

Analyte	unit	Target	methods
Potassium	mmol/l	6.05	ISE method - indirect
Protein Total	g/l	49.0	Biuret reaction end point
	g/dl	4.90	
Sodium	mmol/l	157	ISE method - indirect
Triglycerides	mmol/l	2.86	Lipase/GPO-PAP no correction
	mg/dl	253	
	mmol/l	2.93	L/G Kinase EP. no correction
	mg/dl	259	
Urea	mmol/l	20.5	Urease kinetic
	mg/dl	123	
	mmol/l	20.5	BUN
	mg/dl	57.5	
Uric Acid (Urate)	mmol/l	0.551	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.26	
	mmol/l	0.539	Spectrophotometric at 280-290
	mg/dl	9.06	

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RANDOX

CALIBRATION SERUM LEVEL 3 (CAL3)

SIEMENS DIMENSION RxL/Max/Xpand® Lot. No. 1214UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2023-11-28

Analyte	unit	Target	methods
Albumin	g/l	29.5	Bromocresol Purple
	g/dl	2.95	
Alkaline Phosphatase	U/l	294	Siemens Dimension AMP buffer 37°C
ALT (GPT)	U/l	148	Tris buffer with P5P 37°C
AST (GOT)	U/l	176	Tris buffer with P5P 37°C
Bilirubin Total	µmol/l	89.4	Diazo with Sulphanilic Acid
	mg/dl	5.23	
Calcium	mmol/l	3.26	Cresolphthalein complexone
	mg/dl	13.1	
Chloride	mmol/l	114	ISE indirect
Cholesterol	mmol/l	6.97	Dimension-Siemens reagents
	mg/dl	269	
CK Total	U/l	539	CK-NAC (IFCC) 37°C
Creatinine	µmol/l	375	Alkaline picrate no deproteinization
	mg/dl	4.24	
gamma-GT	U/l	207	Siemens Dimension (non IFCC) 37°C
Glucose	mmol/l	15.8	Hexokinase
	mg/dl	285	
Iron	µmol/l	36.3	Colorimetric without ppt.
	µg/dl	203	
Potassium	mmol/l	5.96	ISE method - indirect
Sodium	mmol/l	157	ISE method - indirect
Triglycerides	mmol/l	2.88	Lipase/GPO-PAP no correction
	mg/dl	255	
Urea	mmol/l	19.9	Urease kinetic
	mg/dl	120	
	mmol/l	19.9	BUN
	mg/dl	55.9	
Uric Acid (Urate)	mmol/l	0.553	Spectrophotometric at 280-290
	mg/dl	9.29	

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