CALIBRATION SERUM LEVEL 3 (CAL 3)

CAT. NO.	CAL 2351	**LOT NO.**	1268UE
SIZE:	20 x 5ml	**EXPIRY:**	2024-07-28
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 for1 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,
Dungloe, Donegal,
F94 TV06, Ireland

20 Jun '22 me

RANDOX

CALIBRATION SERUM LEVEL 3 (CAL3)

METHOD Lot. No. 1268UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2024-07-28

Analyte	unit	Target	methods
a-HBDH	U/l	357	Oxobutyrate < 10 mmol/l 37°C
	U/l	270	Oxobutyrate < 10 mmol/l 30°C
	U/l	202	Oxobutyrate < 10 mmol/l 25°C
Albumin	g/l	31.5	Bromocresol Green
	g/dl	3.15	
	g/l	29.7	Bromocresol Purple
	g/dl	2.97	
	g/l	28.6	Turbidimetric Assays
	g/dl	2.86	
Alkaline Phosphatase	U/l	503	Diethanolamine buffer DEA 37°C
	U/l	392	Diethanolamine buffer DEA 30°C
	U/l	321	Diethanolamine buffer DEA 25°C
	U/l	358	AMP optimised to IFCC 37°C
	U/l	279	AMP optimised to IFCC 30°C
	U/l	229	AMP optimised to IFCC 25°C
	U/l	338	AMP non-optimised 37°C
	U/l	263	AMP non-optimised 30°C
	U/l	216	AMP non-optimised 25°C
	U/l	332	Colorimetric 37°C
	U/l	259	Colorimetric 30°C
	U/l	212	Colorimetric 25°C
ALT (GPT)	U/l	136	Colorimetric 37°C
	U/l	101	Colorimetric 30°C
	U/l	77	Colorimetric 25°C
	U/l	149	Tris buffer with P5P 37°C
	U/l	110	Tris buffer with P5P 30°C
	U/l	84	Tris buffer with P5P 25°C
	U/l	139	Tris buffer without P5P 37°C
	U/l	103	Tris buffer without P5P 30°C
	U/l	78	Tris buffer without P5P 25°C
Amylase Pancreatic	U/l	250	Immunoinhibition EPS substrate 37°C
	U/l	246	Roche EPS Liquid 37°C
	U/l	289	Randox Liquid Ethylidene pNPG7 37°C
Amylase Total	U/l	293	pNP Maltotrioside substrates 37°C
	U/l	296	Siemens - blocked pNPG7 37°C
	U/l	233	Randox Lyo. Ethylidene pNPG7 37°C
	U/l	312	Randox Liquid Ethylidene pNPG7 37°C
	U/l	274	BM/Roche Colorimetric pNPG7 37°C
	U/l	276	Roche Integra 2-chloro-pNPG7 37°C

Randox Laboratories Ltd., 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom
Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
Email: applications@randox.com Website: www.randox.com

RANDOX

CALIBRATION SERUM LEVEL 3 (CAL3)

METHOD Lot. No. 1268UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2024-07-28

Analyte	unit	Target	methods
Amylase Total	U/l	272	Other Roche 2-chloro-pNPG7 37°C
	U/l	274	Roche liquid stable pNPG7 37°C
	U/l	332	Siemens 2-chloro-pNPG3 37°C
	U/l	294	Beckman Coulter - blocked pNPG7 37°C
	U/l	289	Beckman Synchron AMY7 37°C
	U/l	309	Abbott Architect Non-IFCC Cal. 37°C
	U/l	342	Abbott Architect IFCC Cal. 37°C
	U/l	275	Beckman CNPG3 (Extinction Coeff) 37°C
AST (GOT)	U/l	183	Tris buffer with P5P 37°C
	U/l	124	Tris buffer with P5P 30°C
	U/l	87	Tris buffer with P5P 25°C
	U/l	137	Tris buffer without P5P 37°C
	U/l	93	Tris buffer without P5P 30°C
	U/l	65	Tris buffer without P5P 25°C
	U/l	177	Tris buffer with P5P NVKC 37°C
	U/l	120	Tris buffer with P5P NVKC 30°C
	U/l	84	Tris buffer with P5P NVKC 25°C
Bicarbonate	mmol/l	14.5	Colorimetric
	mmol/l	15.2	Enzymatic
Bile Acids	µmol/l	44.7	4th Generation Colorimetric
	µmol/l	44.3	5th Generation Colorimetric
Bilirubin Direct	µmol/l	30.7	Diazo with Sulphanilic Acid
	mg/dl	1.80	
	µmol/l	30.8	Diazo with Dichloroaniline (DCA)
	mg/dl	1.80	
	µmol/l	28.8	Oxidation to Biliverdin/Vanadate
	mg/dl	1.68	
	µmol/l	33.2	Modified Jendrassik
	mg/dl	1.94	
Bilirubin Total	µmol/l	85.9	Diazo with Dichloroaniline (DCA)
	mg/dl	5.03	
	µmol/l	85.1	Diazo with Sulphanilic Acid
	mg/dl	4.98	
	µmol/l	76.8	Dichlorophenyl Diazonium (DPD)
	mg/dl	4.50	
	µmol/l	84.7	Nitrobenzenediazonium salt
	mg/dl	4.96	
	µmol/l	80.0	Diazonium ion
	mg/dl	4.68	
	µmol/l	93.1	Oxidation to Biliverdin/Vanadate
	mg/dl	5.44	
	µmol/l	95.3	Modified Jendrassik
	mg/dl	5.58	

Randox Laboratories Ltd., 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom
Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
Email: applications@randox.com Website: www.randox.com

RANDOX

CALIBRATION SERUM LEVEL 3 (CAL3)

METHOD Lot. No. 1268UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2024-07-28

Analyte	unit	Target	methods
Calcium	mmol/l	3.14	Cresolphthalein complexone
	mg/dl	12.6	
	mmol/l	3.09	Ion selective electrode
	mg/dl	12.4	
	mmol/l	3.12	Arsenazo III
	mg/dl	12.5	
	mmol/l	3.13	NM-BAPTA
	mg/dl	12.5	
Chloride	mmol/l	113	ISE indirect
	mmol/l	113	ISE direct
Cholesterol	mmol/l	7.93	Cholesterol Oxidase - Abell Kendall
	mg/dl	306	
	mmol/l	7.99	Cholesterol Oxidase - IDMS
	mg/dl	308	
	mmol/l	7.94	Cholesterol Dehydrogenase
	mg/dl	306	
Cholinesterase	U/l	5278	Colorimetric Butyrylthiocholine 37°C
CK Total	U/l	517	CK-NAC serum start (DGKC) 37°C
	U/l	324	CK-NAC serum start (DGKC) 30°C
	U/l	220	CK-NAC serum start (DGKC) 25°C
	U/l	524	CK-NAC substrate start (DGKC) 37°C
	U/l	328	CK-NAC substrate start (DGKC) 30°C
	U/l	223	CK-NAC substrate start (DGKC) 25°C
	U/l	512	CK-NAC (IFCC) 37°C
	U/l	321	CK-NAC (IFCC) 30°C
	U/l	218	CK-NAC (IFCC) 25°C
Copper	µmol/l	26.1	Atomic absorption
	µg/dl	166	
	µmol/l	25.4	Colorimetric
	µg/dl	162	
Creatinine	µmol/l	369	Alkaline picrate with deproteinization
	mg/dl	4.17	
	µmol/l	372	Alkaline picrate no deproteinization
	mg/dl	4.20	
	µmol/l	395	Enzymatic UV method
	mg/dl	4.46	
	µmol/l	390	Creatinine PAP method
	mg/dl	4.40	
	µmol/l	377	Jaffe rate blanked
	mg/dl	4.26	
	µmol/l	408	Jaffe rate blanked comp. (-26 µmol/l)
	mg/dl	4.61	
	µmol/l	393	Jaffe rate blanked compensated (-18 µmol/l)
	mg/dl	4.44	

Randox Laboratories Ltd., 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom
Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
Email: applications@randox.com Website: www.randox.com

RANDOX

CALIBRATION SERUM LEVEL 3 (CAL3)

METHOD Lot. No. 1268UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2024-07-28

Analyte	unit	Target	methods
Creatinine	µmol/l	386	IDMS traceable
	mg/dl	4.37	
D-3-Hydroxybutyrate	mmol/l	1.17	Tris buffer 100mmol pH 8.5
gamma-GT	U/l	151	Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C
	U/l	119	Gamma glutamyl.-3-carboxy-4-nitroanilide 30°C
	U/l	93	Gamma glutamyl.-3-carboxy-4-nitroanilide 25°C
	U/l	158	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	125	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30°C
	U/l	97	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25°C
	U/l	174	Randox Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C
	U/l	137	Randox Gamma glutamyl.-3-carboxy-4-nitroanilide 30°C
	U/l	107	Randox Gamma glutamyl.-3-carboxy-4-nitroanilide 25°C
GLDH	U/l	30	Triethanolamine buffer 50 mmol 37°C
	U/l	23	Triethanolamine buffer 50 mmol 30°C
	U/l	19	Triethanolamine buffer 50 mmol 25°C
Glucose	mmol/l	15.5	Glucose dehydrogenase
	mg/dl	279	
	mmol/l	15.4	Hexokinase
	mg/dl	278	
	mmol/l	15.5	Glucose oxidase
	mg/dl	279	
Iron	µmol/l	38.8	Colorimetric with ppt.
	µg/dl	217	
	µmol/l	39.1	Colorimetric without ppt.
	µg/dl	219	
Lactate	mmol/l	5.55	Ion selective electrode
	mg/dl	50.0	
	mmol/l	5.72	Colorimetric Lactate Oxidase
	mg/dl	51.5	
	mmol/l	5.48	Enzymatic Electrode
	mg/dl	49.4	
LD (LDH)	U/l	323	L->P 37°C
	U/l	233	L->P 30°C
	U/l	164	L->P 25°C
	U/l	724	P->L Scandinavian & Dutch 37°C
	U/l	523	P->L Scandinavian & Dutch 30°C
	U/l	367	P->L Scandinavian & Dutch 25°C
	U/l	684	P->L German methods 37°C
	U/l	494	P->L German methods 30°C
	U/l	347	P->L German methods 25°C
	U/l	681	P->L SFBC 37°C
	U/l	492	P->L SFBC 30°C
	U/l	345	P->L SFBC 25°C

Randox Laboratories Ltd., 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom
Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
Email: applications@randox.com Website: www.randox.com

RANDOX

CALIBRATION SERUM LEVEL 3 (CAL3)

METHOD Lot. No. 1268UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2024-07-28

Analyte	unit	Target	methods
LD (LDH)	U/l	335	L->P IFCC 37°C
	U/l	242	L->P IFCC 30°C
	U/l	170	L->P IFCC 25°C
Lipase	U/l	60	Other Colorimetric 37°C
	U/l	64	Roche Colorimetric 37°C
	U/l	78	Randox Colorimetric 37°C
Lithium	mmol/l	2.00	Ion selective electrode
	mg/dl	1.39	
	mmol/l	1.96	Spectrophotometric
	mg/dl	1.36	
Magnesium	mmol/l	1.77	Arsenazo III
	mg/dl	4.30	
	mmol/l	1.75	Calmagite
	mg/dl	4.25	
	mmol/l	1.78	Xylidyl Blue
	mg/dl	4.33	
	mmol/l	1.82	Methylthymol blue
	mg/dl	4.42	
	mmol/l	1.77	Chlorphosphonazo III
	mg/dl	4.30	
	mmol/l	1.76	Enzymatic
	mg/dl	4.28	
Osmolality	mOsm/kg	356	Calculated
	mOsm/kg	380	Freezing point depression
Phosphate Inorganic	mmol/l	2.23	Phosphomolybdate enzymatic
	mg/dl	6.91	
	mmol/l	2.23	Phosphomolybdate UV
	mg/dl	6.91	
Potassium	mmol/l	6.02	ISE method - direct
	mmol/l	6.11	ISE method - indirect
	mmol/l	6.21	Enzymatic
Protein Total	g/l	47.3	Biuret reaction end point
	g/dl	4.73	
	g/l	47.3	Biuret reaction kinetic
	g/dl	4.73	
Sodium	mmol/l	158	ISE method - direct
	mmol/l	160	ISE method - indirect
	mmol/l	162	Enzymatic
TIBC	µmol/l	40.6	Removal of excess free iron
	µg/dl	227	
	µmol/l	42.5	FE+UIBC(saturation with iron)
	µg/dl	238	

Randox Laboratories Ltd., 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom
Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
Email: applications@randox.com Website: www.randox.com

RANDOX

CALIBRATION SERUM LEVEL 3 (CAL3)

METHOD Lot. No. 1268UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2024-07-28

Analyte	unit	Target	methods
TIBC	µmol/l	43.2	Direct Colorimetric
	µg/dl	241	
	µmol/l	42.6	Calculated from Transferrin
	µg/dl	238	
	µmol/l	47.0	Randox Direct
	µg/dl	263	
Triglycerides	mmol/l	2.87	Lipase/GPO-PAP no correction
	mg/dl	254	
	mmol/l	2.89	Lipase/GPO-PAP 0.11mmol/l correction
	mg/dl	256	
	mmol/l	2.86	L/G Kinase EP. no correction
	mg/dl	253	
	mmol/l	2.87	L/G kinase EP. 0.11 mmol/l correction
	mg/dl	254	
	mmol/l	2.88	Lipase/Glycerol Dehydrogenase
	mg/dl	255	
Urea	mmol/l	19.1	Urease end point
	mg/dl	115	
	mmol/l	19.5	Urease kinetic
	mg/dl	117	
	mmol/l	19.5	BUN
	mg/dl	54.7	
Uric Acid (Urate)	mmol/l	0.555	Uricase catalase 340nm
	mg/dl	9.32	
	mmol/l	0.551	Uricase peroxidase with ascorbate oxidase
	mg/dl	9.26	
	mmol/l	0.549	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.22	
	mmol/l	0.545	Spectrophotometric at 280-290
	mg/dl	9.16	
	mmol/l	0.543	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	9.12	
Zinc	µmol/l	35.4	Colorimetric with deproteinisation
	µg/dl	231	
	µmol/l	34.6	Colorimetric without deprot.
	µg/dl	226	

Randox Laboratories Ltd., 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom
Tel: H44 (0) 28 9442 2413 Fax: H44 (0) 28 9445 2912
Email: applications@randox.com Website: www.randox.com

RANDOX

CALIBRATION SERUM LEVEL 3 (CAL3)

Abbott Alinity/ Architect c/ci Systems® Lot. No. 1268UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2024-07-28

Analyte	unit	Target	methods
Albumin	g/l	30.5	Bromocresol Green
	g/dl	3.05	
	g/l	30.3	Bromocresol Purple
	g/dl	3.03	
Alkaline Phosphatase	U/l	336	AMP optimised to IFCC 37°C
	U/l	337	AMP non-optimised 37°C
ALT (GPT)	U/l	143	Tris buffer without P5P 37°C
Amylase Pancreatic	U/l	249	Immunoinhibition EPS substrate 37°C
Amylase Total	U/l	307	Abbott Architect Non-IFCC Cal. 37°C
	U/l	341	Abbott Architect IFCC Cal. 37°C
AST (GOT)	U/l	134	Tris buffer without P5P 37°C
Bicarbonate	mmol/l	14.2	Enzymatic
Bile Acids	µmol/l	44.5	Enzymatic Colorimetric
Bilirubin Direct	µmol/l	30.8	Diazo with Sulphanilic Acid
	mg/dl	1.80	
	µmol/l	31.0	Diazo with Dichloroaniline (DCA)
	mg/dl	1.81	
Bilirubin Total	µmol/l	85.7	Diazo with Dichloroaniline (DCA)
	mg/dl	5.01	
	µmol/l	86.2	Diazo with Sulphanilic Acid
	mg/dl	5.04	
	µmol/l	84.7	Diazonium ion
	mg/dl	4.96	
Calcium	mmol/l	3.06	Arsenazo III
	mg/dl	12.3	
Chloride	mmol/l	114	ISE indirect
Cholesterol	mmol/l	7.93	Cholesterol Oxidase - Abell Kendall
	mg/dl	306	
Cholinesterase	U/l	6105	Colorimetric Butyrylthiocholine 37°C
CK Total	U/l	521	CK-NAC (IFCC) 37°C
	U/l	537	Abbott CK-NAC (IFCC) 37°C
Copper	µmol/l	19.0	Colorimetric
	µg/dl	121	
Creatinine	µmol/l	396	Alkaline picrate no deproteinization
	mg/dl	4.47	
	µmol/l	397	Enzymatic UV method
	mg/dl	4.49	
gamma-GT	U/l	152	Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C
	U/l	152	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C

Randox Laboratories Ltd., 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom
Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
Email: applications@randox.com Website: www.randox.com

RANDOX

CALIBRATION SERUM LEVEL 3 (CAL3)

Abbott Alinity/ Architect c/ci Systems® Lot. No. 1268UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2024-07-28

Analyte	unit	Target	methods
Glucose	mmol/l	15.4	Hexokinase
	mg/dl	277	
	mmol/l	15.5	Glucose oxidase
	mg/dl	279	
Iron	µmol/l	40.9	Colorimetric with ppt.
	µg/dl	229	
	µmol/l	40.5	Colorimetric without ppt.
	µg/dl	226	
Lactate	mmol/l	6.03	Colorimetric Lactate Oxidase
	mg/dl	54.3	
LD (LDH)	U/l	322	L->P 37°C
	U/l	321	L->P IFCC 37°C
Lipase	U/l	55	Other Colorimetric 37°C
Lithium	mmol/l	1.97	Spectrophotometric
	mg/dl	1.37	
Magnesium	mmol/l	1.75	Arsenazo III
	mg/dl	4.25	
	mmol/l	1.76	Enzymatic
	mg/dl	4.28	
Phosphate Inorganic	mmol/l	2.20	Phosphomolybdate enzymatic
	mg/dl	6.82	
	mmol/l	2.22	Phosphomolybdate UV
	mg/dl	6.88	
Potassium	mmol/l	6.11	ISE method - indirect
Protein Total	g/l	49.0	Biuret reaction end point
	g/dl	4.90	
	g/l	48.8	Biuret reaction kinetic
	g/dl	4.88	
Sodium	mmol/l	161	ISE method - indirect
TIBC	µmol/l	45.4	FE+UIBC(saturation with iron)
	µg/dl	254	
	µmol/l	42.9	Calculated from Transferrin
	µg/dl	240	
Triglycerides	mmol/l	2.87	Lipase/GPO-PAP no correction
	mg/dl	254	
	mmol/l	2.89	L/G Kinase EP. no correction
	mg/dl	256	
	mmol/l	2.87	Lipase/Glycerol Dehydrogenase
	mg/dl	254	
UIBC	µmol/l	4.41	Direct Colorimetric
	µg/dl	24.7	
Urea	mmol/l	19.7	Urease kinetic
	mg/dl	118	

Randox Laboratories Ltd., 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom
Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
Email: applications@randox.com Website: www.randox.com

RANDOX

CALIBRATION SERUM LEVEL 3 (CAL3)

Abbott Alinity/ Architect c/ci Systems® Lot. No. 1268UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2024-07-28

Analyte	unit	Target	methods
Urea	mmol/l	19.7	BUN
	mg/dl	55.3	
Uric Acid (Urate)	mmol/l	0.550	Uricase peroxidase with ascorbate oxidase
	mg/dl	9.24	
	mmol/l	0.546	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.17	
	mmol/l	0.539	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	9.06	

Randox Laboratories Ltd., 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom
Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
Email: applications@randox.com Website: www.randox.com

RANDOX

CALIBRATION SERUM LEVEL 3 (CAL3)

Beckman Coulter AU Series® Lot. No. 1268UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2024-07-28

Analyte	unit	Target	methods
Albumin	g/l	29.9	Bromocresol Green
	g/dl	2.99	
	g/l	30.5	Bromocresol Purple
	g/dl	3.05	
Alkaline Phosphatase	U/l	398	AMP optimised to IFCC 37°C
ALT (GPT)	U/l	150	Tris buffer without P5P 37°C
	U/l	148	Beckman Mod. IFCC Ref. without P5P 37°C
	U/l	143	Beckman (Extinction Coefficient) 37°C
Amylase Total	U/l	292	Beckman Synchron CX4/CX5/CX7 37°C
	U/l	294	Beckman Coulter - blocked pNPG7 37°C
	U/l	275	Beckman CNPG3 (Extinction Coeff) 37°C
AST (GOT)	U/l	147	Beckman Mod. IFCC Ref. without P5P 37°C
	U/l	143	Beckman (Extinction Coefficient) 37°C
Bile Acids	µmol/l	42.1	Enzymatic Colorimetric
Bilirubin Direct	µmol/l	23.0	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.35	
Bilirubin Total	µmol/l	88.6	Dichlorophenyl Diazonium (DPD)
	mg/dl	5.18	
	µmol/l	86.2	DPD (Beckman AU)
	mg/dl	5.04	
Calcium	mmol/l	3.17	Cresolphthalein complexone
	mg/dl	12.7	
	mmol/l	3.13	Arsenazo III
	mg/dl	12.5	
Chloride	mmol/l	113	ISE indirect
Cholesterol	mmol/l	7.98	Cholesterol Oxidase - Abell Kendall
	mg/dl	308	
	mmol/l	8.23	Cholesterol Oxidase - IDMS
	mg/dl	318	
	mmol/l	7.90	Cholesterol Dehydrogenase
	mg/dl	305	
Cholinesterase	U/l	4873	Colorimetric Butyrylthiocholine 37°C
CK Total	U/l	547	CK-NAC substrate start (DGKC) 37°C
	U/l	561	CK-NAC (IFCC) 37°C
	U/l	533	Beckman CK-NAC (Extinction Coeff) 37°C
Copper	µmol/l	24.0	Colorimetric
	µg/dl	152	
Creatinine	µmol/l	368	Alkaline picrate no deproteinization
	mg/dl	4.15	

Randox Laboratories Ltd., 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom
Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
Email: applications@randox.com Website: www.randox.com

RANDOX

CALIBRATION SERUM LEVEL 3 (CAL3)

Beckman Coulter AU Series® Lot. No. 1268UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2024-07-28

Analyte	unit	Target	methods
Creatinine	µmol/l	403	Enzymatic UV method
	mg/dl	4.56	
	µmol/l	370	Jaffe rate blanked
	mg/dl	4.18	
	µmol/l	395	Jaffe rate blanked compensated (-18 µmol/l)
	mg/dl	4.46	
	µmol/l	385	IDMS traceable
	mg/dl	4.34	
D-3-Hydroxybutyrate	mmol/l	1.13	Tris buffer 100mmol pH 8.5
gamma-GT	U/l	160	Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C
	U/l	161	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	159	Beckman Szasz (Extinction Coeff) 37°C
GLDH	U/l	31	Triethanolamine buffer 50 mmol 37°C
Glucose	mmol/l	15.5	Hexokinase
	mg/dl	279	
	mmol/l	15.3	Glucose oxidase
	mg/dl	276	
Iron	µmol/l	40.8	Colorimetric with ppt.
	µg/dl	228	
	µmol/l	39.7	Colorimetric without ppt.
	µg/dl	222	
Lactate	mmol/l	5.56	Colorimetric Lactate Oxidase
	mg/dl	50.1	
LD (LDH)	U/l	314	L->P 37°C
	U/l	720	P->L Scandinavian & Dutch 37°C
	U/l	331	L->P IFCC 37°C
	U/l	304	L to P Beckman (Extinction Coeff) 37°C
Lipase	U/l	61	Other Colorimetric 37°C
	U/l	77	Randox Colorimetric 37°C
Lithium	mmol/l	1.96	Spectrophotometric
	mg/dl	1.36	
Magnesium	mmol/l	1.78	Xylidyl Blue
	mg/dl	4.33	
Phosphate Inorganic	mmol/l	2.25	Phosphomolybdate UV
	mg/dl	6.98	
Potassium	mmol/l	6.06	ISE method - indirect
Protein Total	g/l	46.9	Biuret reaction end point
	g/dl	4.69	
Sodium	mmol/l	160	ISE method - indirect
TIBC	µmol/l	44.1	FE+UIBC(saturation with iron)
	µg/dl	246	
	µmol/l	42.0	Direct Colorimetric
	µg/dl	235	

Randox Laboratories Ltd., 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom
Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
Email: applications@randox.com Website: www.randox.com

RANDOX

CALIBRATION SERUM LEVEL 3 (CAL3)

Beckman Coulter AU Series® Lot. No. 1268UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2024-07-28

Analyte	unit	Target	methods
Triglycerides	mmol/l	2.87	Lipase/GPO-PAP no correction
	mg/dl	254	
	mmol/l	2.87	L/G Kinase EP. no correction
	mg/dl	254	
Urea	mmol/l	19.3	Urease end point
	mg/dl	116	
	mmol/l	19.7	Urease kinetic
	mg/dl	118	
	mmol/l	19.7	BUN
	mg/dl	55.3	
Uric Acid (Urate)	mmol/l	0.563	Uricase peroxidase with ascorbate oxidase
	mg/dl	9.46	
	mmol/l	0.560	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.41	
	mmol/l	0.551	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	9.26	
Zinc	µmol/l	33.5	Colorimetric without deprot.
	µg/dl	219	

Randox Laboratories Ltd., 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom
Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
Email: applications@randox.com Website: www.randox.com

RANDOX

CALIBRATION SERUM LEVEL 3 (CAL3)

Biotecnica/Wiener BT and CB Series Lot. No. 1268UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2024-07-28

Analyte	unit	Target	methods
Albumin	g/l	31.8	Bromocresol Green
	g/dl	3.18	
Bilirubin Total	µmol/l	83.4	Dichlorophenyl Diazonium (DPD)
	mg/dl	4.88	
Calcium	mmol/l	3.09	Arsenazo III
	mg/dl	12.4	
Cholesterol	mmol/l	7.41	Cholesterol Oxidase - Abell Kendall
	mg/dl	286	
Glucose	mmol/l	14.9	Glucose oxidase
	mg/dl	268	
Magnesium	mmol/l	1.67	Xylidyl Blue
	mg/dl	4.06	
Phosphate Inorganic	mmol/l	2.35	Phosphomolybdate UV
	mg/dl	7.29	
Protein Total	g/l	50.0	Biuret reaction end point
	g/dl	5.00	
Triglycerides	mmol/l	2.79	Lipase/GPO-PAP no correction
	mg/dl	247	
Urea	mmol/l	18.9	Urease kinetic
	mg/dl	114	
	mmol/l	18.9	BUN
	mg/dl	53.0	
Uric Acid (Urate)	mmol/l	0.544	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.14	

Randox Laboratories Ltd., 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom
Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
Email: applications@randox.com Website: www.randox.com

RANDOX

CALIBRATION SERUM LEVEL 3 (CAL3)

COBAS INTEGRA® Lot. No. 1268UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2024-07-28

Analyte	unit	Target	methods
Albumin	g/l	32.7	Bromocresol Green
	g/dl	3.27	
	g/l	27.5	Turbidimetric Assays
	g/dl	2.75	
Alkaline Phosphatase	U/l	334	Roche Integra AMP buffer 37°C
	U/l	260	Roche Integra AMP buffer 30°C
	U/l	213	Roche Integra AMP buffer 25°C
ALT (GPT)	U/l	134	Tris buffer without P5P 37°C
	U/l	99	Tris buffer without P5P 30°C
	U/l	75	Tris buffer without P5P 25°C
Amylase Total	U/l	280	BM/Roche Colorimetric pNPG7 37°C
	U/l	279	Roche Integra 2-chloro-pNPG7 37°C
	U/l	280	Roche liquid stable pNPG7 37°C
AST (GOT)	U/l	136	Tris buffer without P5P 37°C
	U/l	92	Tris buffer without P5P 30°C
	U/l	65	Tris buffer without P5P 25°C
Bicarbonate	mmol/l	15.1	Enzymatic
Bilirubin Direct	µmol/l	30.6	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.79	
	µmol/l	30.1	Diazo with Sulphanilic Acid
	mg/dl	1.76	
	µmol/l	30.7	Roche DPD JG standardised
	mg/dl	1.79	
	µmol/l	25.9	Roche DPD Doumas standardised
	mg/dl	1.52	
Bilirubin Total	µmol/l	79.6	Diazo with Sulphanilic Acid
	mg/dl	4.65	
	µmol/l	78.7	Dichlorophenyl Diazonium (DPD)
	mg/dl	4.60	
	µmol/l	78.8	Diazonium ion
	mg/dl	4.61	
Calcium	mmol/l	3.14	Cresolphthalein complexone
	mg/dl	12.6	
	mmol/l	3.13	NM-BAPTA
	mg/dl	12.5	
Chloride	mmol/l	114	ISE indirect
Cholesterol	mmol/l	7.89	Cholesterol Oxidase - Abell Kendall
	mg/dl	305	
	mmol/l	7.87	Cholesterol Oxidase - IDMS
	mg/dl	304	

Randox Laboratories Ltd., 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom
Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
Email: applications@randox.com Website: www.randox.com

RANDOX

CALIBRATION SERUM LEVEL 3 (CAL3)

COBAS INTEGRA® Lot. No. 1268UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2024-07-28

Analyte	unit	Target	methods
CK Total	U/l	503	CK-NAC (IFCC) 37°C
	U/l	315	CK-NAC (IFCC) 30°C
	U/l	214	CK-NAC (IFCC) 25°C
Creatinine	µmol/l	372	Alkaline picrate with deproteinization
	mg/dl	4.20	
	µmol/l	374	Alkaline picrate no deproteinization
	mg/dl	4.23	
	µmol/l	397	Roche Creatinine Plus
	mg/dl	4.48	
	µmol/l	396	Jaffe rate blanked comp. (-26 µmol/l)
	mg/dl	4.47	
	µmol/l	387	Jaffe rate blanked compensated (-18 µmol/l)
	mg/dl	4.37	
gamma-GT	U/l	147	Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C
	U/l	116	Gamma glutamyl.-3-carboxy-4-nitroanilide 30°C
	U/l	91	Gamma glutamyl.-3-carboxy-4-nitroanilide 25°C
	U/l	162	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	128	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30°C
	U/l	100	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25°C
Glucose	mmol/l	15.7	Hexokinase
	mg/dl	283	
Iron	µmol/l	39.2	Colorimetric with ppt.
	µg/dl	219	
	µmol/l	39.2	Colorimetric without ppt.
	µg/dl	219	
Lactate	mmol/l	5.72	Colorimetric Lactate Oxidase
	mg/dl	51.5	
LD (LDH)	U/l	344	L->P IFCC 37°C
	U/l	248	L->P IFCC 30°C
	U/l	174	L->P IFCC 25°C
Lipase	U/l	61	Roche Colorimetric 37°C
Lithium	mmol/l	1.96	Ion selective electrode
	mg/dl	1.36	
Magnesium	mmol/l	1.76	Xylidyl Blue
	mg/dl	4.28	
	mmol/l	1.75	Chlorphosphonazo III
	mg/dl	4.25	
Phosphate Inorganic	mmol/l	2.31	Phosphomolybdate enzymatic
	mg/dl	7.16	
	mmol/l	2.29	Phosphomolybdate UV
	mg/dl	7.10	
Potassium	mmol/l	6.10	ISE method - indirect

Randox Laboratories Ltd., 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom
Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
Email: applications@randox.com Website: www.randox.com

RANDOX

CALIBRATION SERUM LEVEL 3 (CAL3)

COBAS INTEGRA® Lot. No. 1268UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2024-07-28

Analyte	unit	Target	methods
Protein Total	g/l	45.0	Biuret reaction end point
	g/dl	4.50	
	g/l	45.6	Biuret reaction kinetic
	g/dl	4.56	
Sodium	mmol/l	159	ISE method - indirect
TIBC	µmol/l	40.8	FE+UIBC(saturation with iron)
	µg/dl	228	
Triglycerides	mmol/l	2.88	Lipase/GPO-PAP no correction
	mg/dl	255	
Urea	mmol/l	19.1	Urease kinetic
	mg/dl	115	
	mmol/l	19.1	BUN
	mg/dl	53.6	
Uric Acid (Urate)	mmol/l	0.558	Uricase peroxidase with ascorbate oxidase
	mg/dl	9.37	
	mmol/l	0.556	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.34	
	mmol/l	0.562	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	9.44	

Randox Laboratories Ltd., 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom
Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
Email: applications@randox.com Website: www.randox.com

RANDOX

CALIBRATION SERUM LEVEL 3 (CAL3)

Konelab 20/30/60®/Thermo Scientific Indiko Plus® Lot. No. 1268UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2024-07-28

Analyte	unit	Target	methods
Albumin	g/l	30.3	Bromocresol Green
	g/dl	3.03	
ALT (GPT)	U/l	158	Tris buffer without P5P 37°C
	U/l	117	Tris buffer without P5P 30°C
	U/l	89	Tris buffer without P5P 25°C
AST (GOT)	U/l	159	Tris buffer without P5P 37°C
	U/l	107	Tris buffer without P5P 30°C
	U/l	76	Tris buffer without P5P 25°C
Bilirubin Total	µmol/l	84.9	Diazo with Sulphanilic Acid
	mg/dl	4.96	
	µmol/l	84.7	Nitrobenzenediazonium salt
	mg/dl	4.96	
Calcium	mmol/l	3.21	Arsenazo III
	mg/dl	12.9	
Cholesterol	mmol/l	7.99	Cholesterol Oxidase - Abell Kendall
	mg/dl	308	
CK Total	U/l	518	CK-NAC (IFCC) 37°C
	U/l	324	CK-NAC (IFCC) 30°C
	U/l	220	CK-NAC (IFCC) 25°C
Creatinine	µmol/l	382	Alkaline picrate no deproteinization
	mg/dl	4.32	
gamma-GT	U/l	155	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	122	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30°C
	U/l	96	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25°C
Glucose	mmol/l	15.0	Glucose oxidase
	mg/dl	270	
Iron	µmol/l	39.4	Colorimetric without ppt.
	µg/dl	220	
Magnesium	mmol/l	1.76	Xylidyl Blue
	mg/dl	4.28	
Phosphate Inorganic	mmol/l	2.25	Phosphomolybdate UV
	mg/dl	6.98	
Potassium	mmol/l	5.98	ISE method - direct
Protein Total	g/l	47.6	Biuret reaction end point
	g/dl	4.76	
Sodium	mmol/l	158	ISE method - direct
Triglycerides	mmol/l	3.02	Lipase/GPO-PAP no correction
	mg/dl	267	
Urea	mmol/l	18.5	Urease kinetic
	mg/dl	111	

Randox Laboratories Ltd., 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom
Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
Email: applications@randox.com Website: www.randox.com

RANDOX

CALIBRATION SERUM LEVEL 3 (CAL3)

Konelab 20/30/60®/Thermo Scientific Indiko Plus® Lot. No. 1268UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2024-07-28

Analyte	unit	Target	methods
Urea	mmol/l	18.5	BUN
	mg/dl	51.9	

Randox Laboratories Ltd., 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom
Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
Email: applications@randox.com Website: www.randox.com

RANDOX

CALIBRATION SERUM LEVEL 3 (CAL3)

MINDRAY BS-200/300/400 Lot. No. 1268UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2024-07-28

Analyte	unit	Target	methods
Albumin	g/l	32.2	Bromocresol Green
	g/dl	3.22	
Alkaline Phosphatase	U/l	471	Diethanolamine buffer DEA 37°C
	U/l	367	Diethanolamine buffer DEA 30°C
	U/l	301	Diethanolamine buffer DEA 25°C
ALT (GPT)	U/l	150	Tris buffer without P5P 37°C
	U/l	111	Tris buffer without P5P 30°C
	U/l	84	Tris buffer without P5P 25°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
Bilirubin Direct	µmol/l	29.5	Diazo with Sulphanilic Acid
	mg/dl	1.72	
	µmol/l	29.4	Oxidation to Biliverdin/Vanadate
	mg/dl	1.72	
Bilirubin Total	µmol/l	86.1	Diazo with Sulphanilic Acid
	mg/dl	5.04	
	µmol/l	88.5	Dichlorophenyl Diazonium (DPD)
	mg/dl	5.18	
	µmol/l	85.3	Oxidation to Biliverdin/Vanadate
	mg/dl	4.99	
Calcium	mmol/l	3.20	Arsenazo III
	mg/dl	12.8	
Cholesterol	mmol/l	7.75	Cholesterol Oxidase - Abell Kendall
	mg/dl	299	
	mmol/l	7.64	Cholesterol Oxidase - IDMS
	mg/dl	295	
CK Total	U/l	521	CK-NAC (IFCC) 37°C
	U/l	326	CK-NAC (IFCC) 30°C
	U/l	221	CK-NAC (IFCC) 25°C
Creatinine	µmol/l	365	Alkaline picrate no deproteinization
	mg/dl	4.12	
	µmol/l	379	Creatinine PAP method
	mg/dl	4.28	
gamma-GT	U/l	155	Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C
	U/l	122	Gamma glutamyl.-3-carboxy-4-nitroanilide 30°C
	U/l	96	Gamma glutamyl.-3-carboxy-4-nitroanilide 25°C
	U/l	155	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	122	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30°C
	U/l	96	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25°C

Randox Laboratories Ltd., 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom
Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
Email: applications@randox.com Website: www.randox.com

RANDOX

CALIBRATION SERUM LEVEL 3 (CAL3)

MINDRAY BS-200/300/400 Lot. No. 1268UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2024-07-28

Analyte	unit	Target	methods
Glucose	mmol/l	15.8	Glucose oxidase
	mg/dl	285	
Iron	µmol/l	37.3	Colorimetric without ppt.
	µg/dl	209	
LD (LDH)	U/l	696	P->L German methods 37°C
	U/l	503	P->L German methods 30°C
	U/l	353	P->L German methods 25°C
	U/l	710	P->L SFBC 37°C
	U/l	513	P->L SFBC 30°C
	U/l	360	P->L SFBC 25°C
	U/l	319	L->P IFCC 37°C
	U/l	230	L->P IFCC 30°C
	U/l	162	L->P IFCC 25°C
Lipase	U/l	61	Other Colorimetric 37°C
Magnesium	mmol/l	1.67	Xylidyl Blue
	mg/dl	4.06	
Phosphate Inorganic	mmol/l	2.31	Phosphomolybdate UV
	mg/dl	7.16	
Protein Total	g/l	50.0	Biuret reaction end point
	g/dl	5.00	
Triglycerides	mmol/l	2.86	Lipase/GPO-PAP no correction
	mg/dl	253	
Urea	mmol/l	19.8	Urease kinetic
	mg/dl	119	
	mmol/l	19.8	BUN
	mg/dl	55.6	
Uric Acid (Urate)	mmol/l	0.535	Uricase peroxidase with ascorbate oxidase
	mg/dl	8.99	
	mmol/l	0.541	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.09	
	mmol/l	0.559	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	9.39	

Randox Laboratories Ltd., 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom
Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
Email: applications@randox.com Website: www.randox.com

RANDOX

CALIBRATION SERUM LEVEL 3 (CAL3)

Roche Cobas 6000 c501 e601 Lot. No. 1268UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2024-07-28

Analyte	unit	Target	methods
Albumin	g/l	32.7	Bromocresol Green
	g/dl	3.27	
	g/l	28.4	Turbidimetric Assays
	g/dl	2.84	
Alkaline Phosphatase	U/l	330	Roche Integra AMP buffer 37°C
	U/l	257	Roche Integra AMP buffer 30°C
	U/l	211	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 Pancreatic	U/l	240	Roche EPS Liquid 37°C
Amylase Total	U/l	270	Roche Integra 2-chloro-pNPG7 37°C
	U/l	272	Roche liquid stable pNPG7 37°C
AST (GOT)	U/l	136	Tris buffer without P5P 37°C
	U/l	92	Tris buffer without P5P 30°C
	U/l	65	Tris buffer without P5P 25°C
Bicarbonate	mmol/l	15.0	Colorimetric
	mmol/l	14.9	Enzymatic
Bile Acids	µmol/l	42.0	Enzymatic Colorimetric
Bilirubin Direct	µmol/l	30.0	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.76	
	µmol/l	28.6	Diazo with Sulphanilic Acid
	mg/dl	1.67	
	µmol/l	29.8	Roche DPD JG standardised
	mg/dl	1.74	
	µmol/l	26.4	Roche DPD Doumas standardised
	mg/dl	1.54	
Bilirubin Total	µmol/l	75.6	Diazo with Sulphanilic Acid
	mg/dl	4.42	
	µmol/l	76.3	Dichlorophenyl Diazonium (DPD)
	mg/dl	4.46	
	µmol/l	76.1	Diazonium ion
	mg/dl	4.45	
Calcium	mmol/l	3.13	Cresolphthalein complexone
	mg/dl	12.5	
	mmol/l	3.13	NM-BAPTA
	mg/dl	12.5	
Chloride	mmol/l	111	ISE indirect
Cholesterol	mmol/l	7.92	Cholesterol Oxidase - Abell Kendall
	mg/dl	306	

Randox Laboratories Ltd., 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom
Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
Email: applications@randox.com Website: www.randox.com

RANDOX

CALIBRATION SERUM LEVEL 3 (CAL3)

Roche Cobas 6000 c501 e601 Lot. No. 1268UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2024-07-28

Analyte	unit	Target	methods
Cholesterol	mmol/l	7.95	Cholesterol Oxidase - IDMS
	mg/dl	307	
Cholinesterase	U/l	5241	Colorimetric Butyrylthiocholine 37°C
CK Total	U/l	522	CK-NAC substrate start (DGKC) 37°C
	U/l	327	CK-NAC substrate start (DGKC) 30°C
	U/l	222	CK-NAC substrate start (DGKC) 25°C
	U/l	509	CK-NAC (IFCC) 37°C
	U/l	319	CK-NAC (IFCC) 30°C
	U/l	216	CK-NAC (IFCC) 25°C
Creatinine	µmol/l	390	Alkaline picrate no deproteinization
	mg/dl	4.41	
	µmol/l	400	Roche Creatinine Plus
	mg/dl	4.52	
	µmol/l	410	Jaffe rate blanked comp. (-26 µmol/l)
	mg/dl	4.63	
	µmol/l	401	Jaffe rate blanked compensated (-18 µmol/l)
	mg/dl	4.53	
D-3-Hydroxybutyrate	mmol/l	1.10	Tris buffer 100mmol pH 8.5
gamma-GT	U/l	142	Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C
	U/l	112	Gamma glutamyl.-3-carboxy-4-nitroanilide 30°C
	U/l	88	Gamma glutamyl.-3-carboxy-4-nitroanilide 25°C
	U/l	161	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	127	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30°C
	U/l	99	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25°C
GLDH	U/l	28	Triethanolamine buffer 50 mmol 37°C
	U/l	22	Triethanolamine buffer 50 mmol 30°C
	U/l	17	Triethanolamine buffer 50 mmol 25°C
Glucose	mmol/l	15.3	Hexokinase
	mg/dl	276	
Iron	µmol/l	38.6	Colorimetric with ppt.
	µg/dl	216	
	µmol/l	38.5	Colorimetric without ppt.
	µg/dl	215	
Lactate	mmol/l	5.65	Colorimetric Lactate Oxidase
	mg/dl	50.9	
LD (LDH)	U/l	333	L->P 37°C
	U/l	240	L->P 30°C
	U/l	169	L->P 25°C
	U/l	550	P->L German methods 37°C
	U/l	397	P->L German methods 30°C
	U/l	279	P->L German methods 25°C
	U/l	339	L->P IFCC 37°C
	U/l	245	L->P IFCC 30°C
	U/l	172	L->P IFCC 25°C

Randox Laboratories Ltd., 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom
Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
Email: applications@randox.com Website: www.randox.com

RANDOX

CALIBRATION SERUM LEVEL 3 (CAL3)

Roche Cobas 6000 c501 e601 Lot. No. 1268UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2024-07-28

Analyte	unit	Target	methods
Lipase	U/l	65	Roche Colorimetric 37°C
Lithium	mmol/l	1.94	Spectrophotometric
	mg/dl	1.35	
Magnesium	mmol/l	1.78	Xylidyl Blue
	mg/dl	4.33	
	mmol/l	1.78	Chlorphosphonazo III
	mg/dl	4.33	
Phosphate Inorganic	mmol/l	2.23	Phosphomolybdate enzymatic
	mg/dl	6.91	
	mmol/l	2.22	Phosphomolybdate UV
	mg/dl	6.88	
Potassium	mmol/l	6.13	ISE method - indirect
Protein Total	g/l	46.5	Biuret reaction end point
	g/dl	4.65	
Sodium	mmol/l	160	ISE method - indirect
TIBC	µmol/l	41.0	FE+UIBC(saturation with iron)
	µg/dl	229	
	µmol/l	44.8	Calculated from Transferrin
	µg/dl	250	
Triglycerides	mmol/l	2.86	Lipase/GPO-PAP no correction
	mg/dl	253	
	mmol/l	2.86	L/G Kinase EP. no correction
	mg/dl	253	
Urea	mmol/l	19.6	Urease kinetic
	mg/dl	118	
	mmol/l	19.6	BUN
	mg/dl	55.0	
Uric Acid (Urate)	mmol/l	0.534	Uricase peroxidase with ascorbate oxidase
	mg/dl	8.97	
	mmol/l	0.531	Uricase peroxidase no ascorbate oxidase
	mg/dl	8.92	
	mmol/l	0.533	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	8.95	

Randox Laboratories Ltd., 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom
Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
Email: applications@randox.com Website: www.randox.com

RANDOX

CALIBRATION SERUM LEVEL 3 (CAL3)

Roche Cobas C111® Lot. No. 1268UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2024-07-28

Analyte	unit	Target	methods
Albumin	g/l	33.3	Bromocresol Green
	g/dl	3.33	
Alkaline Phosphatase	U/l	319	Roche Integra AMP buffer 37°C
	U/l	249	Roche Integra AMP buffer 30°C
	U/l	204	Roche Integra AMP buffer 25°C
ALT (GPT)	U/l	131	Tris buffer without P5P 37°C
	U/l	97	Tris buffer without P5P 30°C
	U/l	74	Tris buffer without P5P 25°C
Amylase Total	U/l	279	Roche liquid stable pNPG7 37°C
AST (GOT)	U/l	135	Tris buffer without P5P 37°C
	U/l	91	Tris buffer without P5P 30°C
	U/l	64	Tris buffer without P5P 25°C
Bilirubin Direct	µmol/l	31.6	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.85	
	µmol/l	31.0	Roche DPD JG standardised
	mg/dl	1.82	
Bilirubin Total	µmol/l	76.9	Diazo with Sulphanilic Acid
	mg/dl	4.50	
	µmol/l	77.0	Dichlorophenyl Diazonium (DPD)
	mg/dl	4.50	
	µmol/l	79.4	Diazonium ion
	mg/dl	4.64	
Calcium	mmol/l	3.14	NM-BAPTA
	mg/dl	12.6	
Cholesterol	mmol/l	7.88	Cholesterol Oxidase - Abell Kendall
	mg/dl	304	
	mmol/l	7.84	Cholesterol Oxidase - IDMS
	mg/dl	303	
CK Total	U/l	508	CK-NAC (IFCC) 37°C
	U/l	318	CK-NAC (IFCC) 30°C
	U/l	216	CK-NAC (IFCC) 25°C
Creatinine	µmol/l	391	Roche Creatinine Plus
	mg/dl	4.41	
Glucose	mmol/l	15.7	Hexokinase
	mg/dl	283	
LD (LDH)	U/l	332	L->P IFCC 37°C
	U/l	240	L->P IFCC 30°C
	U/l	168	L->P IFCC 25°C
Phosphate Inorganic	mmol/l	2.31	Phosphomolybdate UV
	mg/dl	7.16	

Randox Laboratories Ltd., 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom
Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
Email: applications@randox.com Website: www.randox.com

RANDOX

CALIBRATION SERUM LEVEL 3 (CAL3)

Roche Cobas C111® Lot. No. 1268UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2024-07-28

Analyte	unit	Target	methods
Triglycerides	mmol/l	2.92	Lipase/GPO-PAP no correction
	mg/dl	258	
Urea	mmol/l	18.9	Urease kinetic
	mg/dl	114	
	mmol/l	18.9	BUN
	mg/dl	53.0	
Uric Acid (Urate)	mmol/l	0.554	Uricase peroxidase with ascorbate oxidase
	mg/dl	9.31	
	mmol/l	0.547	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.19	
	mmol/l	0.546	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	9.17	

Randox Laboratories Ltd., 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom
Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
Email: applications@randox.com Website: www.randox.com

RANDOX

CALIBRATION SERUM LEVEL 3 (CAL3)

Roche Cobas C311® Lot. No. 1268UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2024-07-28

Analyte	unit	Target	methods
Albumin	g/l	32.8	Bromocresol Green
	g/dl	3.28	
Alkaline Phosphatase	U/l	324	Roche Integra AMP buffer 37°C
	U/l	252	Roche Integra AMP buffer 30°C
	U/l	207	Roche Integra AMP buffer 25°C
ALT (GPT)	U/l	137	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	280	BM/Roche Colorimetric pNPG7 37°C
	U/l	277	Roche liquid stable pNPG7 37°C
AST (GOT)	U/l	137	Tris buffer without P5P 37°C
	U/l	93	Tris buffer without P5P 30°C
	U/l	65	Tris buffer without P5P 25°C
Bicarbonate	mmol/l	14.7	Enzymatic
Bilirubin Direct	µmol/l	28.8	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.68	
	µmol/l	30.1	Diazo with Sulphanilic Acid
	mg/dl	1.76	
	µmol/l	29.1	Roche DPD JG standardised
	mg/dl	1.70	
Bilirubin Total	µmol/l	75.6	Diazo with Sulphanilic Acid
	mg/dl	4.42	
	µmol/l	76.1	Dichlorophenyl Diazonium (DPD)
	mg/dl	4.45	
	µmol/l	77.4	Diazonium ion
	mg/dl	4.53	
Calcium	mmol/l	3.17	Cresolphthalein complexone
	mg/dl	12.7	
	mmol/l	3.15	NM-BAPTA
	mg/dl	12.6	
Chloride	mmol/l	111	ISE indirect
Cholesterol	mmol/l	8.03	Cholesterol Oxidase - Abell Kendall
	mg/dl	310	
	mmol/l	8.01	Cholesterol Oxidase - IDMS
	mg/dl	309	
CK Total	U/l	517	CK-NAC (IFCC) 37°C
	U/l	324	CK-NAC (IFCC) 30°C
	U/l	220	CK-NAC (IFCC) 25°C
Creatinine	µmol/l	405	Roche Creatinine Plus
	mg/dl	4.57	

Randox Laboratories Ltd., 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom
Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
Email: applications@randox.com Website: www.randox.com

RANDOX

CALIBRATION SERUM LEVEL 3 (CAL3)

Roche Cobas C311® Lot. No. 1268UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2024-07-28

Analyte	unit	Target	methods
Creatinine	µmol/l	410	Jaffe rate blanked comp. (-26 µmol/l)
	mg/dl	4.63	
gamma-GT	U/l	144	Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C
	U/l	113	Gamma glutamyl.-3-carboxy-4-nitroanilide 30°C
	U/l	89	Gamma glutamyl.-3-carboxy-4-nitroanilide 25°C
	U/l	164	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	129	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30°C
	U/l	101	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25°C
Glucose	mmol/l	15.4	Hexokinase
	mg/dl	278	
	mmol/l	15.5	Glucose oxidase
	mg/dl	279	
Iron	µmol/l	38.4	Colorimetric with ppt.
	µg/dl	215	
	µmol/l	38.1	Colorimetric without ppt.
	µg/dl	213	
Lactate	mmol/l	5.79	Colorimetric Lactate Oxidase
	mg/dl	52.2	
LD (LDH)	U/l	341	L->P IFCC 37°C
	U/l	246	L->P IFCC 30°C
	U/l	173	L->P IFCC 25°C
Lipase	U/l	64	Roche Colorimetric 37°C
Magnesium	mmol/l	1.78	Xylidyl Blue
	mg/dl	4.33	
	mmol/l	1.79	Chlorphosphonazo III
	mg/dl	4.35	
Phosphate Inorganic	mmol/l	2.24	Phosphomolybdate UV
	mg/dl	6.94	
Potassium	mmol/l	6.13	ISE method - indirect
Protein Total	g/l	46.8	Biuret reaction end point
	g/dl	4.68	
Sodium	mmol/l	160	ISE method - indirect
Triglycerides	mmol/l	2.88	Lipase/GPO-PAP no correction
	mg/dl	255	
	mmol/l	2.86	Lipase/Glycerol Dehydrogenase
	mg/dl	253	
Urea	mmol/l	19.7	Urease kinetic
	mg/dl	118	
	mmol/l	19.7	BUN
	mg/dl	55.3	
Uric Acid (Urate)	mmol/l	0.548	Uricase peroxidase with ascorbate oxidase
	mg/dl	9.21	

Randox Laboratories Ltd., 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom
Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
Email: applications@randox.com Website: www.randox.com

RANDOX

CALIBRATION SERUM LEVEL 3 (CAL3)

Roche Cobas C311® Lot. No. 1268UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2024-07-28

Analyte	unit	Target	methods
Uric Acid (Urate)	mmol/l	0.546	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.17	
	mmol/l	0.543	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	9.12	

Randox Laboratories Ltd., 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom
Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
Email: applications@randox.com Website: www.randox.com

RANDOX

CALIBRATION SERUM LEVEL 3 (CAL3)

Roche Cobas c701 / c702 / c711 Lot. No. 1268UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2024-07-28

Analyte	unit	Target	methods
Albumin	g/l	32.5	Bromocresol Green
	g/dl	3.25	
	g/l	29.3	Bromocresol Purple
	g/dl	2.93	
	g/l	29.7	Turbidimetric Assays
	g/dl	2.97	
Alkaline Phosphatase	U/l	317	Roche Integra AMP buffer 37°C
	U/l	247	Roche Integra AMP buffer 30°C
	U/l	203	Roche Integra AMP buffer 25°C
	U/l	327	Colorimetric 37°C
	U/l	255	Colorimetric 30°C
	U/l	209	Colorimetric 25°C
ALT (GPT)	U/l	135	Colorimetric 37°C
	U/l	100	Colorimetric 30°C
	U/l	76	Colorimetric 25°C
	U/l	138	Tris buffer without P5P 37°C
	U/l	102	Tris buffer without P5P 30°C
	U/l	78	Tris buffer without P5P 25°C
Amylase Pancreatic	U/l	249	Roche EPS Liquid 37°C
Amylase Total	U/l	274	Roche liquid stable pNPG7 37°C
AST (GOT)	U/l	136	Tris buffer without P5P 37°C
	U/l	92	Tris buffer without P5P 30°C
	U/l	65	Tris buffer without P5P 25°C
Bicarbonate	mmol/l	14.9	Enzymatic
Bile Acids	µmol/l	44.0	Enzymatic Colorimetric
Bilirubin Direct	µmol/l	30.1	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.76	
	µmol/l	28.7	Diazo with Sulphanilic Acid
	mg/dl	1.68	
	µmol/l	29.5	Roche DPD JG standardised
	mg/dl	1.72	
	µmol/l	25.0	Oxidation to Biliverdin/Vanadate
	mg/dl	1.46	
Bilirubin Total	µmol/l	76.7	Dichlorophenyl Diazonium (DPD)
	mg/dl	4.49	
	µmol/l	77.6	Diazonium ion
	mg/dl	4.54	
Calcium	mmol/l	3.10	Cresolphthalein complexone
	mg/dl	12.4	

Randox Laboratories Ltd., 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom
Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
Email: applications@randox.com Website: www.randox.com

RANDOX

CALIBRATION SERUM LEVEL 3 (CAL3)

Roche Cobas c701 / c702 / c711 Lot. No. 1268UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2024-07-28

Analyte	unit	Target	methods
Calcium	mmol/l	3.11	NM-BAPTA
	mg/dl	12.5	
Chloride	mmol/l	111	ISE indirect
Cholesterol	mmol/l	7.90	Cholesterol Oxidase - Abell Kendall
	mg/dl	305	
	mmol/l	7.93	Cholesterol Oxidase - IDMS
	mg/dl	306	
CK Total	U/l	509	CK-NAC (IFCC) 37°C
	U/l	319	CK-NAC (IFCC) 30°C
	U/l	216	CK-NAC (IFCC) 25°C
Creatinine	µmol/l	399	Roche Creatinine Plus
	mg/dl	4.51	
	µmol/l	418	Jaffe rate blanked comp. (-26 µmol/l)
	mg/dl	4.72	
gamma-GT	U/l	139	Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C
	U/l	110	Gamma glutamyl.-3-carboxy-4-nitroanilide 30°C
	U/l	86	Gamma glutamyl.-3-carboxy-4-nitroanilide 25°C
	U/l	158	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	125	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30°C
	U/l	97	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25°C
Glucose	mmol/l	15.2	Hexokinase
	mg/dl	273	
Iron	µmol/l	37.4	Colorimetric with ppt.
	µg/dl	209	
	µmol/l	37.5	Colorimetric without ppt.
	µg/dl	210	
Lactate	mmol/l	5.64	Colorimetric Lactate Oxidase
	mg/dl	50.8	
LD (LDH)	U/l	336	L->P IFCC 37°C
	U/l	243	L->P IFCC 30°C
	U/l	170	L->P IFCC 25°C
Lipase	U/l	66	Roche Colorimetric 37°C
Lithium	mmol/l	1.98	Spectrophotometric
	mg/dl	1.37	
Magnesium	mmol/l	1.80	Xylidyl Blue
	mg/dl	4.37	
Phosphate Inorganic	mmol/l	2.20	Phosphomolybdate UV
	mg/dl	6.82	
Potassium	mmol/l	6.12	ISE method - indirect
Protein Total	g/l	46.5	Biuret reaction end point
	g/dl	4.65	
Sodium	mmol/l	160	ISE method - indirect
TIBC	µmol/l	41.0	FE+UIBC(saturation with iron)
	µg/dl	229	

Randox Laboratories Ltd., 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom
Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
Email: applications@randox.com Website: www.randox.com

RANDOX

CALIBRATION SERUM LEVEL 3 (CAL3)

Roche Cobas c701 / c702 / c711 Lot. No. 1268UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2024-07-28

Analyte	unit	Target	methods
Triglycerides	mmol/l	2.85	Lipase/GPO-PAP no correction
	mg/dl	252	
	mmol/l	2.81	L/G Kinase EP. no correction
	mg/dl	249	
Urea	mmol/l	19.3	Urease kinetic
	mg/dl	116	
	mmol/l	19.3	BUN
	mg/dl	54.2	
Uric Acid (Urate)	mmol/l	0.530	Uricase peroxidase with ascorbate oxidase
	mg/dl	8.90	
	mmol/l	0.530	Uricase peroxidase no ascorbate oxidase
	mg/dl	8.90	
	mmol/l	0.530	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	8.90	

Randox Laboratories Ltd., 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom
Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
Email: applications@randox.com Website: www.randox.com

RANDOX

CALIBRATION SERUM LEVEL 3 (CAL3)

RX SERIES® Lot. No. 1268UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2024-07-28

Analyte	unit	Target	methods
Albumin	g/l	31.4	Bromocresol Green
	g/dl	3.14	
Alkaline Phosphatase	U/l	529	Diethanolamine buffer DEA 37°C
	U/l	368	AMP optimised to IFCC 37°C
ALT (GPT)	U/l	152	Tris buffer without P5P 37°C
Amylase Pancreatic	U/l	289	Randox Liquid Ethylidene pNPG7 37°C
Amylase Total	U/l	312	Randox Liquid Ethylidene pNPG7 37°C
AST (GOT)	U/l	156	Tris buffer without P5P 37°C
Bile Acids	µmol/l	44.3	5th Generation Colorimetric
Bilirubin Direct	µmol/l	29.9	Diazo with Sulphanilic Acid
	mg/dl	1.75	
	µmol/l	28.5	Oxidation to Biliverdin/Vanadate
	mg/dl	1.67	
Bilirubin Total	µmol/l	85.3	Diazo with Sulphanilic Acid
	mg/dl	4.99	
	µmol/l	90.6	Oxidation to Biliverdin/Vanadate
	mg/dl	5.30	
Calcium	mmol/l	3.09	Arsenazo III
	mg/dl	12.4	
Cholesterol	mmol/l	8.51	Cholesterol Oxidase - Abell Kendall
	mg/dl	328	
CK Total	U/l	600	CK-NAC substrate start (DGKC) 37°C
	U/l	594	CK-NAC (IFCC) 37°C
Creatinine	µmol/l	341	Alkaline picrate no deproteinization
	mg/dl	3.85	
	µmol/l	398	Enzymatic UV method
	mg/dl	4.50	
gamma-GT	U/l	174	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
Glucose	mmol/l	15.0	Hexokinase
	mg/dl	270	
	mmol/l	16.0	Glucose oxidase
	mg/dl	288	
Iron	µmol/l	41.9	Colorimetric without ppt.
	µg/dl	234	
Lactate	mmol/l	5.66	Colorimetric Lactate Oxidase
	mg/dl	51.0	
LD (LDH)	U/l	712	P->L German methods 37°C
	U/l	336	L->P IFCC 37°C
Lipase	U/l	78	Randox Colorimetric 37°C

Randox Laboratories Ltd., 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom
Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
Email: applications@randox.com Website: www.randox.com

RANDOX

CALIBRATION SERUM LEVEL 3 (CAL3)

RX SERIES® Lot. No. 1268UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2024-07-28

Analyte	unit	Target	methods
Magnesium	mmol/l	1.80	Xylidyl Blue
	mg/dl	4.37	
Phosphate Inorganic	mmol/l	2.27	Phosphomolybdate UV
	mg/dl	7.04	
Potassium	mmol/l	6.21	Enzymatic
Protein Total	g/l	49.9	Biuret reaction end point
	g/dl	4.99	
Sodium	mmol/l	162	Enzymatic
TIBC	µmol/l	47.0	Direct Colorimetric
	µg/dl	263	
Triglycerides	mmol/l	2.89	Lipase/GPO-PAP no correction
	mg/dl	256	
Urea	mmol/l	18.9	Urease kinetic
	mg/dl	114	
	mmol/l	18.9	BUN
	mg/dl	52.9	
Uric Acid (Urate)	mmol/l	0.583	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.79	
	mmol/l	0.546	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	9.17	

Randox Laboratories Ltd., 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom
Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
Email: applications@randox.com Website: www.randox.com

RANDOX

CALIBRATION SERUM LEVEL 3 (CAL3)

SIEMENS ADVIA 1200/1650/1800/2400® Lot. No. 1268UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2024-07-28

Analyte	unit	Target	methods
Albumin	g/l	30.6	Bromocresol Green
	g/dl	3.06	
	g/l	29.0	Bromocresol Purple
	g/dl	2.90	
Alkaline Phosphatase	U/l	321	AMP optimised to IFCC 37°C
ALT (GPT)	U/l	162	Tris buffer without P5P 37°C
Amylase Total	U/l	284	Siemens - blocked pNPG7 37°C
AST (GOT)	U/l	154	Tris buffer without P5P 37°C
Bicarbonate	mmol/l	17.1	Enzymatic
Bile Acids	µmol/l	46.1	Enzymatic Colorimetric
Bilirubin Direct	µmol/l	28.0	Oxidation to Biliverdin/Vanadate
	mg/dl	1.64	
Bilirubin Total	µmol/l	93.9	Oxidation to Biliverdin/Vanadate
	mg/dl	5.50	
Calcium	mmol/l	3.15	Cresolphthalein complexone
	mg/dl	12.6	
	mmol/l	3.08	Arsenazo III
	mg/dl	12.3	
Chloride	mmol/l	114	ISE indirect
Cholesterol	mmol/l	7.97	Cholesterol Oxidase - Abell Kendall
	mg/dl	308	
CK Total	U/l	542	CK-NAC (IFCC) 37°C
Creatinine	µmol/l	391	Enzymatic UV method
	mg/dl	4.42	
	µmol/l	398	Jaffe rate blanked comp. (-26 µmol/l)
	mg/dl	4.50	
gamma-GT	U/l	141	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
Glucose	mmol/l	14.9	Hexokinase
	mg/dl	268	
	mmol/l	15.1	Glucose oxidase
	mg/dl	272	
Iron	µmol/l	39.0	Colorimetric without ppt.
	µg/dl	218	
Lactate	mmol/l	5.64	Colorimetric Lactate Oxidase
	mg/dl	50.8	
LD (LDH)	U/l	672	P->L German methods 37°C
	U/l	337	L->P IFCC 37°C
Lipase	U/l	71	Other Colorimetric 37°C
Magnesium	mmol/l	1.70	Xylidyl Blue
	mg/dl	4.13	

Randox Laboratories Ltd., 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom
Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
Email: applications@randox.com Website: www.randox.com

RANDOX

CALIBRATION SERUM LEVEL 3 (CAL3)

SIEMENS ADVIA 1200/1650/1800/2400® Lot. No. 1268UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2024-07-28

Analyte	unit	Target	methods
Phosphate Inorganic	mmol/l	2.26	Phosphomolybdate UV
	mg/dl	7.01	
Potassium	mmol/l	6.14	ISE method - indirect
Protein Total	g/l	46.7	Biuret reaction end point
	g/dl	4.67	
Sodium	mmol/l	161	ISE method - indirect
TIBC	µmol/l	40.4	Calculated from Transferrin
	µg/dl	226	
Triglycerides	mmol/l	2.94	Lipase/GPO-PAP no correction
	mg/dl	260	
Urea	mmol/l	19.5	Urease kinetic
	mg/dl	117	
	mmol/l	19.5	BUN
	mg/dl	54.7	
Uric Acid (Urate)	mmol/l	0.555	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.32	

Randox Laboratories Ltd., 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom
Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
Email: applications@randox.com Website: www.randox.com

RANDOX

CALIBRATION SERUM LEVEL 3 (CAL3)

Siemens Atellica Solution Lot. No. 1268UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2024-07-28

Analyte	unit	Target	methods
Albumin	g/l	30.8	Bromocresol Green
	g/dl	3.08	
	g/l	29.1	Bromocresol Purple
	g/dl	2.91	
Alkaline Phosphatase	U/l	323	AMP optimised to IFCC 37°C
ALT (GPT)	U/l	161	Tris buffer without P5P 37°C
Amylase Pancreatic	U/l	262	Immunoinhibition EPS substrate 37°C
Amylase Total	U/l	313	Siemens - blocked pNPG7 37°C
AST (GOT)	U/l	155	Tris buffer without P5P 37°C
Bicarbonate	mmol/l	17.0	Enzymatic
Bilirubin Direct	µmol/l	29.7	Oxidation to Biliverdin/Vanadate
	mg/dl	1.74	
Bilirubin Total	µmol/l	94.2	Oxidation to Biliverdin/Vanadate
	mg/dl	5.51	
Calcium	mmol/l	3.24	Cresolphthalein complexone
	mg/dl	13.0	
	mmol/l	3.10	Arsenazo III
	mg/dl	12.4	
Chloride	mmol/l	116	ISE indirect
Cholesterol	mmol/l	8.04	Cholesterol Oxidase - Abell Kendall
	mg/dl	310	
	mmol/l	7.97	Cholesterol Oxidase - IDMS
	mg/dl	308	
CK Total	U/l	512	CK-NAC (IFCC) 37°C
Creatinine	µmol/l	371	Alkaline picrate no deproteinization
	mg/dl	4.19	
	µmol/l	402	Jaffe rate blanked comp. (-26 µmol/l)
	mg/dl	4.54	
gamma-GT	U/l	145	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
Glucose	mmol/l	15.0	Hexokinase
	mg/dl	270	
	mmol/l	15.2	Glucose oxidase
	mg/dl	274	
Iron	µmol/l	39.1	Colorimetric without ppt.
	µg/dl	219	
Lactate	mmol/l	5.60	Colorimetric Lactate Oxidase
	mg/dl	50.5	
LD (LDH)	U/l	330	L->P IFCC 37°C
Lipase	U/l	67	Other Colorimetric 37°C

Randox Laboratories Ltd., 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom
Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
Email: applications@randox.com Website: www.randox.com

RANDOX

CALIBRATION SERUM LEVEL 3 (CAL3)

Siemens Atellica Solution Lot. No. 1268UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2024-07-28

Analyte	unit	Target	methods
Lithium	mmol/l	1.93	Spectrophotometric
	mg/dl	1.34	
Magnesium	mmol/l	1.75	Xylidyl Blue
	mg/dl	4.25	
Phosphate Inorganic	mmol/l	2.30	Phosphomolybdate UV
	mg/dl	7.13	
Potassium	mmol/l	5.98	ISE method - indirect
Protein Total	g/l	47.1	Biuret reaction end point
	g/dl	4.71	
Sodium	mmol/l	159	ISE method - indirect
TIBC	µmol/l	46.1	Direct Colorimetric
	µg/dl	258	
Triglycerides	mmol/l	3.04	Lipase/GPO-PAP no correction
	mg/dl	269	
Urea	mmol/l	19.6	Urease kinetic
	mg/dl	118	
	mmol/l	19.6	BUN
	mg/dl	55.0	
Uric Acid (Urate)	mmol/l	0.556	Uricase peroxidase with ascorbate oxidase
	mg/dl	9.34	
	mmol/l	0.555	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.32	

Randox Laboratories Ltd., 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom
Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
Email: applications@randox.com Website: www.randox.com

RANDOX

CALIBRATION SERUM LEVEL 3 (CAL3)

SIEMENS DIMENSION EXL® Lot. No. 1268UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2024-07-28

Analyte	unit	Target	methods
Albumin	g/l	29.3	Bromocresol Purple
	g/dl	2.93	
Alkaline Phosphatase	U/l	322	Siemens Dimension AMP buffer 37°C
ALT (GPT)	U/l	157	Tris buffer with P5P 37°C
	U/l	154	Tris buffer with P5P NVKC 37°C
	U/l	152	Siemens Dade Standard Non IFCC Correlated 37°C
Amylase Total	U/l	330	Siemens 2-chloro-pNPG3 37°C
AST (GOT)	U/l	174	Tris buffer with P5P 37°C
	U/l	177	Tris buffer with P5P NVKC 37°C
	U/l	177	Siemens Dade Standard Non IFCC Correlated 37°C
Bilirubin Direct	µmol/l	18.7	Diazo/Sulphanilic Siemens Dimension
	mg/dl	1.09	
Bilirubin Total	µmol/l	83.8	Diazo with Sulphanilic Acid
	mg/dl	4.90	
Calcium	mmol/l	3.08	Cresolphthalein complexone
	mg/dl	12.3	
Chloride	mmol/l	114	ISE indirect
Cholesterol	mmol/l	7.56	Dimension-Siemens reagents
	mg/dl	292	
CK Total	U/l	495	CK-NAC (IFCC) 37°C
Creatinine	µmol/l	391	Alkaline picrate no deproteinization
	mg/dl	4.42	
	µmol/l	390	Jaffe rate blanked
	mg/dl	4.41	
gamma-GT	U/l	166	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	185	Siemens Dimension (non IFCC) 37°C
Glucose	mmol/l	15.5	Hexokinase
	mg/dl	280	
Iron	µmol/l	36.3	Colorimetric with ppt.
	µg/dl	203	
	µmol/l	37.3	Colorimetric without ppt.
	µg/dl	209	
LD (LDH)	U/l	328	L->P IFCC 37°C
Lipase	U/l	195	Colorimetric Siemens Dimension (LIPL Kit) 37°C
Magnesium	mmol/l	1.81	Methylthymol blue
	mg/dl	4.40	
Phosphate Inorganic	mmol/l	2.29	Phosphomolybdate enzymatic
	mg/dl	7.10	
	mmol/l	2.30	Phosphomolybdate UV
	mg/dl	7.13	

Randox Laboratories Ltd., 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom
Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
Email: applications@randox.com Website: www.randox.com

RANDOX

CALIBRATION SERUM LEVEL 3 (CAL3)

SIEMENS DIMENSION EXL® Lot. No. 1268UE Cat. No. CAL2351

Size 20 x 5ml Expiry 2024-07-28

Analyte	unit	Target	methods
Potassium	mmol/l	6.10	ISE method - indirect
Protein Total	g/l	48.5	Biuret reaction end point
	g/dl	4.85	
Sodium	mmol/l	160	ISE method - indirect
Triglycerides	mmol/l	2.86	Lipase/GPO-PAP no correction
	mg/dl	253	
Urea	mmol/l	20.0	Urease kinetic
	mg/dl	120	
	mmol/l	20.0	BUN
	mg/dl	56.1	
Uric Acid (Urate)	mmol/l	0.544	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.14	
	mmol/l	0.533	Spectrophotometric at 280-290
	mg/dl	8.95	

Randox Laboratories Ltd., 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom
Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
Email: applications@randox.com Website: www.randox.com