

PRODUCT INFORMATION

CAL2351

1450UE

Please note: AST in reconstituted serum is stable for 3 days at +2°C to +8°C if kept capped in original container and free from contamination.

Should you require any further information, please contact Technical.Services@Randox.com.

CCS INC 2157

CALIBRATION SERUM LEVEL 3 (CAL 3)

CAT. NO.	CAL 235I	LOT NO.	I450UE
SIZE:	20 x 5ml	EXPIRY:	2028-02-28
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 235I 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 °C to +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°C to +8°C

AST in reconstituted serum is stable for 3 days at +2°C to +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

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- (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.



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Abbott Alinity c		Calibration Serum Level 3 (CAL 3)	
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
Albumin	g/dl	3.06	Abbott Alinity Albumin BCG 2
	g/l	30.6	
	g/dl	2.91	Abbott Alinity Albumin BCP 2
	g/l	29.1	
	g/dl	3.07	Bromocresol Green
	g/l	30.7	
	g/dl	2.95	Bromocresol Purple
	g/l	29.5	
Alkaline Phosphatase	U/l	318	Abbott Alinity Alkaline Phosphatase 2
	U/l	319	AMP non-optimised
	U/l	317	AMP optimised to IFCC
	U/l	333	Colorimetric
ALT (GPT)	U/l	122	Abbott Alinity ALT 2
	U/l	140	Tris Buffer With P5P
	U/l	125	Tris Buffer Without P5P
Amylase Pancreatic	U/l	228	Immunoinhibition, EPS substrate
Amylase Total	U/l	274	Abbott Alinity Amylase 2
AST (GOT)	U/l	137	Abbott Alinity AST 2
	U/l	179	Tris Buffer With P5P
	U/l	140	Tris Buffer Without P5P
Bicarbonate	mmol/l	13.5	Enzymatic
	mmol/l	13.0	PEP Carboxylase
Bile Acids	µmol/l	42.8	Enzymatic Colorimetric
	µmol/l	44.5	Enzymatic Colorimetric - Sentinel
Bilirubin Direct	mg/dl	1.73	Diazo with Dichloroaniline
	µmol/l	29.5	
	mg/dl	1.71	Diazo With Sulphanilic Acid
	µmol/l	29.3	
	mg/dl	1.75	Dichlorophenyl Diazonium
	µmol/l	29.9	
Bilirubin Total	mg/dl	5.31	Abbott Alinity Total Bilirubin 2
	µmol/l	90.8	
	mg/dl	5.32	Diazo With Dichloroaniline
	µmol/l	91.0	
	mg/dl	5.29	Diazo With Sulphanilic Acid
	µmol/l	90.5	
	mg/dl	5.32	Diazonium Ion
µmol/l	90.9		

Abbott Alinity c		Calibration Serum Level 3 (CAL 3)	
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
Calcium	mg/dl	11.7	Arsenazo III
	mmol/l	2.93	
Chloride	mmol/l	113	ISE Indirect
Cholesterol	mg/dl	275	Abbott Alinity Cholesterol 2
	mmol/l	7.13	
	mg/dl	274	Cholesterol Oxidase - Abell Kendall
	mmol/l	7.09	
Cholinesterase	U/l	6823	Colorimetric - Butyrylthiocholine
CK Total	U/l	548	Abbott CK-NAC (IFCC)
	IU/l	548	
	U/l	553	CK-NAC (IFCC)
	IU/l	553	
	U/l	539	CK-NAC serum start (DGKC)
	IU/l	539	
Copper	µg/dl	159	Colorimetric
	µmol/l	25.0	
Creatinine	mg/dl	4.03	Abbott Alinity Creatinine 2
	µmol/l	357	
	mg/dl	4.05	Alkaline picrate no deproteinisation
	µmol/l	358	
	mg/dl	4.09	Enzymatic
	µmol/l	362	
	mg/dl	4.08	IDMS Traceable
	µmol/l	361	
gamma-GT	U/l	199	Abbott Alinity GGT 2
	U/l	200	Gamma glut.-3-carb.-4-nitro.
	U/l	197	Gamma glut'3-carb'4-nitro(IFCC)
Glucose	mg/dl	265	Glucose Oxidase
	mmol/l	14.7	
	mg/dl	270	Hexokinase
	mmol/l	15.0	
Iron	µg/dl	227	Abbott Alinity Iron 2
	µmol/l	40.6	
	µg/dl	227	Colorimetric with ppt.
	µmol/l	40.6	
	µg/dl	227	Colorimetric without ppt.
	µmol/l	40.6	
Lactate	mg/dl	52.0	Colorimetric - Lactate oxidase
	mmol/l	5.77	

Abbott Alinity c		Calibration Serum Level 3 (CAL 3)	
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
LD (LDH)	U/l	323	Abbott Alinity LD 2
	U/l	325	L to P, IFCC
	U/l	321	Lactate to Pyruvate methods
Lipase	U/l	63	Other Colorimetric
Lithium	mg/dl	1.30	Spectrophotometric
	mmol/l	1.87	
Magnesium	mg/dl	4.33	Arsenazo III
	mmol/l	1.78	
	mg/dl	4.33	Enzymatic
	mmol/l	1.78	
	mg/dl	4.20	Xylidyl Blue
	mmol/l	1.73	
Phosphate Inorganic	mg/dl	7.41	Phosphomolybdate Enzymatic
	mmol/l	2.39	
	mg/dl	7.38	Phosphomolybdate UV
	mmol/l	2.38	
Potassium	mmol/l	6.20	Ion Selective Electrode Method
Protein Total	g/dl	4.95	Abbott Alinity Total Protein 2
	g/l	49.5	
	g/dl	4.93	Biuret reaction, end point
	g/l	49.3	
Sodium	mmol/l	159	Ion Selective Electrode Method
TIBC	µg/dl	234	Calculated from Transferrin
	µmol/l	41.8	
	µg/dl	249	FE+UIBC(saturation with iron)
	µmol/l	44.6	
Triglycerides	mg/dl	235	Abbott Alinity i
	mmol/l	2.66	
	mg/dl	235	Lipase/GPO-PAP No Correction
	mmol/l	2.65	
Urea	mg/dl	121	Abbott Architect Urea Nitrogen 2
	mg/dl (BUN)	56.3	
	mmol/l	20.1	
	mg/dl	119	Urease, end point
	mg/dl (BUN)	55.4	
	mmol/l	19.8	

Abbott Alinity c		Calibration Serum Level 3 (CAL 3)	
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
Urea	mg/dl	122	Urease, kinetic
	mg/dl (BUN)	56.8	
	mmol/l	20.3	
Uric Acid (Urate)	mg/dl	8.89	Abbott Alinity Uric Acid 2
	mmol/l	0.529	
	μmol/l	529	
	mg/dl	8.97	Uricase perox. no ascorb. ox.
	mmol/l	0.534	
	μmol/l	534	
	mg/dl	8.89	Uricase Perox. with ascorb. ox
	mmol/l	0.529	
	μmol/l	529	

Abbott Architect c Systems			Calibration Serum Level 3 (CAL 3)
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
Albumin	g/dl	3.02	Abbott Alinity Albumin BCG 2
	g/l	30.2	
	g/dl	3.08	Abbott Architect Albumin BCG 2
	g/l	30.8	
	g/dl	2.92	Abbott Architect Albumin BCP 2
	g/l	29.2	
	g/dl	3.07	Bromocresol Green
	g/l	30.7	
Albumin	g/dl	2.97	Bromocresol Purple
	g/l	29.7	
Alkaline Phosphatase	U/l	320	Abbott Architect Alkaline Phosphatase 2
	U/l	321	AMP non-optimised
	U/l	319	AMP optimised to IFCC
	U/l	321	Other AMP kits
ALT (GPT)	U/l	125	Abbott Architect ALT 2
	U/l	135	Tris Buffer With P5P
	U/l	125	Tris Buffer Without P5P
Amylase Pancreatic	U/l	232	Immunoinhibition, EPS substrate
Amylase Total	U/l	274	Abbott Architect Amylase 2
	U/l	272	Abbott Architect/Alinity cal factor 3431
	U/l	265	Abbott blocked pNPG7
AST (GOT)	U/l	140	Abbott Architect AST 2
	U/l	171	Tris Buffer With P5P
	U/l	139	Tris Buffer Without P5P
Bicarbonate	mmol/l	12.1	PEP Carboxylase
Bile Acids	µmol/l	43.7	Enzymatic Colorimetric
Bilirubin Direct	mg/dl	1.77	Diazo with Dichloroaniline
	µmol/l	30.2	
	mg/dl	1.74	Diazo With Sulphanilic Acid
	µmol/l	29.7	
	mg/dl	1.73	Dichlorophenyl Diazonium
	µmol/l	29.5	
Bilirubin Total	mg/dl	5.25	Abbott Alin/Arch cal batch no >97447/8/9
	µmol/l	89.7	
	mg/dl	5.32	Abbott Architect Total Bilirubin 2
	µmol/l	91.0	
	mg/dl	5.34	Diazo With Dichloroaniline
	µmol/l	91.2	

Abbott Architect c Systems			Calibration Serum Level 3 (CAL 3)
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
Bilirubin Total	mg/dl	5.38	Diazo With Sulphanilic Acid
	µmol/l	91.9	
	mg/dl	5.31	Diazonium Ion
	µmol/l	90.8	
Calcium	mg/dl	11.9	Arsenazo III
	mmol/l	2.97	
Chloride	mmol/l	113	ISE Indirect
Cholesterol	mg/dl	277	Abbott Architect Cholesterol 2
	mmol/l	7.18	
	mg/dl	276	Cholesterol Oxidase - Abell Kendall
	mmol/l	7.16	
Cholinesterase	U/l	6827	Colorimetric - Butyrylthiocholine
CK Total	U/l	533	Abbott CK-NAC (IFCC)
	IU/l	533	
	U/l	529	CK-NAC (IFCC)
	IU/l	529	
	U/l	545	CK-NAC serum start (DGKC)
	IU/l	545	
	U/l	540	CK-NAC substrate start (DGKC)
	IU/l	540	
Creatinine	mg/dl	4.02	Abbott Architect Creatinine 2
	µmol/l	356	
	mg/dl	3.99	Alkaline picrate no deproteinisation
	µmol/l	353	
	mg/dl	4.11	Enzymatic
	µmol/l	364	
	mg/dl	3.88	Jaffe Rate Blanked
	µmol/l	343	
gamma-GT	U/l	199	Abbott Architect GGT 2
	U/l	199	DCL, gamma glut.-3-carb.-4-nitro.
	U/l	199	Gamma glut.-3-carb.-4-nitro.
	U/l	199	Gamma glut'3-carb'4-nitro(IFCC)
Glucose	mg/dl	270	Glucose Dehydrogenase
	mmol/l	15.0	
	mg/dl	276	Glucose Oxidase
	mmol/l	15.3	
	mg/dl	274	Hexokinase
	mmol/l	15.2	

Abbott Architect c Systems			Calibration Serum Level 3 (CAL 3)
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
Iron	µg/dl	225	Abbott Architect Chemilum
	µmol/l	40.3	
	µg/dl	231	Colorimetric with ppt.
	µmol/l	41.4	
	µg/dl	223	Colorimetric without ppt.
	µmol/l	39.9	
Lactate	mg/dl	52.6	Colorimetric - Lactate oxidase
	mmol/l	5.84	
LD (LDH)	U/l	321	Abbott Architect LD 2
	U/l	321	L to P, IFCC
	U/l	317	Lactate to Pyruvate methods
Lipase	U/l	61	Other Colorimetric
Lithium	mg/dl	1.31	Spectrophotometric
	mmol/l	1.89	
Magnesium	mg/dl	4.18	Arsenazo III
	mmol/l	1.72	
	mg/dl	4.23	Enzymatic
	mmol/l	1.74	
	mg/dl	4.20	Xylidyl Blue
	mmol/l	1.73	
	mg/dl	7.41	Phosphomolybdate Enzymatic
	mmol/l	2.39	
	mg/dl	7.44	Phosphomolybdate UV
	mmol/l	2.40	
	mmol/l	2.40	
Potassium	mmol/l	6.16	Ion Selective Electrode Method
Protein Total	g/dl	5.01	Abbott Architect total Protein 2
	g/l	50.1	
	g/dl	5.01	Biuret reaction, end point
	g/l	50.1	
	g/dl	4.98	Biuret reaction, kinetic
	g/l	49.8	
Sodium	mmol/l	158	Ion Selective Electrode Method
TIBC	µg/dl	249	FE+UIBC(saturation with iron)
	µmol/l	44.6	
Triglycerides	mg/dl	235	Abbott Architect Triglyceride 2
	mmol/l	2.65	
	mg/dl	238	Lipase/Glycerol Dehydrogenase
	mmol/l	2.69	

Abbott Architect c Systems			Calibration Serum Level 3 (CAL 3)
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
Triglycerides	mg/dl	234	Lipase/GPO-PAP No Correction
	mmol/l	2.64	
Urea	mg/dl	122	Abbott Architect Urea Nitrogen 2
	mg/dl (BUN)	56.8	
	mmol/l	20.3	
	mg/dl	123	Urease, end point
	mg/dl (BUN)	57.1	
	mmol/l	20.4	
	mg/dl	123	Urease, kinetic
	mg/dl (BUN)	57.1	
	mmol/l	20.4	
Uric Acid (Urate)	mg/dl	8.87	Abbott Architect Uric Acid 2
	mmol/l	0.528	
	µmol/l	528	
	mg/dl	8.86	Uricase perox. no ascorb. ox.
	mmol/l	0.527	
	µmol/l	527	
	mg/dl	8.81	Uricase Perox. with ascorb. ox
	mmol/l	0.524	
	µmol/l	524	
	mg/dl	9.06	Uricase Perox. with ascorb. ox @ 546nm
	mmol/l	0.539	
	µmol/l	539	

Beckman Coulter AU Series			Calibration Serum Level 3 (CAL 3)
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
Albumin	g/dl	3.06	Bromocresol Green
	g/l	30.6	
	g/dl	3.00	Bromocresol Purple
	g/l	30.0	
	g/dl	3.10	Nephelometric Assays
	g/l	31.0	
Alkaline Phosphatase	U/l	323	AMP non-optimised
	U/l	332	AMP optimised to IFCC
	U/l	337	Beckman AMP (Calibrator)
	U/l	323	Beckman AMP (Extinction Coeff)
	U/l	324	Diethanolamine buffer, DEA
ALT (GPT)	U/l	139	Agappe - IFCC
	U/l	141	Beckman IFCC Ref. with P5P
	U/l	138	Beckman Mod. IFCC Ref. without P5P
	U/l	142	Tris Buffer With P5P
	U/l	137	Tris buffer with P5P, NVKC
	U/l	142	Tris Buffer Without P5P
Amylase Total	U/l	239	Agappe - CNPG3
	U/l	262	Amylolytic Methods
	U/l	261	Beckman blocked pNPG7
	U/l	260	Beckman CNPG3 (Extinction Coeff)
	U/l	259	Beckman CNPG3 (Master Cal)
	U/l	262	Beckman maltotetraose
	U/l	272	Beckman Synchron AMY7
	U/l	304	bioMerieux 2-chloro-pNPG3
	U/l	263	Human CNPG3 (IFCC)
	U/l	241	pNP Maltotrioxide substrates
	U/l	278	Randox Liquid Ethylidene pNPG7
	U/l	249	Roche Liquid Stable pNPG7
	U/l	256	Siemens/Dade Behring 2-chloro-pNPG3
AST (GOT)	U/l	129	Agappe - IFCC
	U/l	137	Beckman IFCC Ref. with P5P
	U/l	136	Beckman Mod. IFCC Ref. without P5P
	U/l	130	Phosphate buffer, DGKC
	U/l	135	Tris Buffer With P5P
	U/l	132	Tris buffer with P5P, NVKC
	U/l	135	Tris Buffer Without P5P
Bicarbonate	mmol/l	14.2	Enzymatic
	mmol/l	14.7	PEP Carboxylase

Beckman Coulter AU Series			Calibration Serum Level 3 (CAL 3)
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
Bile Acids	µmol/l	44.7	Enzymatic Colorimetric
	µmol/l	47.8	Enzymatic Colorimetric - Sentinel
Bilirubin Direct	mg/dl	1.45	Diazo/Sulphanilic Beckman DxC
	µmol/l	24.8	
	mg/dl	1.49	Dichlorophenyl Diazonium
	µmol/l	25.4	
Bilirubin Total	mg/dl	5.67	Diazo With Dichloroaniline
	µmol/l	96.9	
	mg/dl	5.46	Diazo With Sulphanilic Acid
	µmol/l	93.3	
	mg/dl	5.44	Diazonium Ion
	µmol/l	93.0	
	mg/dl	5.49	Dichlorophenyl Diazonium
	µmol/l	93.9	
Calcium	mg/dl	5.42	DPD (Beckman AU)
	µmol/l	92.7	
	mg/dl	12.3	Arsenazo III
	mmol/l	3.06	
	mg/dl	12.1	Cresolphthalein Complexone
	mmol/l	3.03	
	mg/dl	12.2	Ion Selective Electrode
	mmol/l	3.04	
Cholesterol	mg/dl	12.3	NM-BAPTA
	mmol/l	3.07	
	mmol/l	111	ISE Indirect
Cholesterol	mg/dl	278	Agappe - CHOD-PAP
	mmol/l	7.21	
	mg/dl	279	Cholesterol Dehydrogenase
	mmol/l	7.23	
	mg/dl	281	Cholesterol Oxidase - Abell Kendall
	mmol/l	7.27	
	mg/dl	282	Cholesterol Oxidase - IDMS
	mmol/l	7.30	
Cholinesterase	U/l	5450	Colorimetric - Butyrylthiocholine
CK Total	U/l	536	Abbott CK-NAC (IFCC)
	IU/l	536	
	U/l	585	Beckman CK-NAC (Extinction Coeff)
	IU/l	585	

Beckman Coulter AU Series			Calibration Serum Level 3 (CAL 3)
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
CK Total	U/l	563	Beckman CK-NAC (IFCC)
	IU/l	563	
	U/l	554	CK-NAC (IFCC)
	IU/l	554	
	U/l	566	CK-NAC serum start (DGKC)
	IU/l	566	
	U/l	493	CK-NAC substrate start (DGKC)
	IU/l	493	
Copper	U/l	536	Creatine Phosphate Substrate Start
	IU/l	536	
	U/l	589	Monothioglycerol
	IU/l	589	
Creatinine	µg/dl	162	Colorimetric
	µmol/l	25.5	
	mg/dl	3.74	Alkaline picrate no deproteinisation
	µmol/l	331	
	mg/dl	3.79	Alkaline Picrate With Deproteinisation
	µmol/l	335	
	mg/dl	4.05	Enzymatic
	µmol/l	358	
	mg/dl	3.94	IDMS Traceable
	µmol/l	349	
	mg/dl	3.75	Jaffe Rate Blanked
	µmol/l	332	
D-3-Hydroxybutyrate	mg/dl	3.76	Jaffe rate blanked comp. (-26µmol/l)
	µmol/l	333	
	mg/dl	3.73	Jaffe rate blanked comp. (-33µmol/l)
	µmol/l	330	
	mg/dl	3.86	Jaffe rate comp. (-18µmol/l)
	µmol/l	342	
gamma-GT	mmol/l	1.25	Phosphate buffer 20mmol pH 7.0
	mmol/l	1.20	Tris buffer 100mmol pH 8.5
GLDH	U/l	191	Beckman Szasz (Extinction Coeff.)
	U/l	193	DCL, gamma glut.-3-carb.-4-nitro.
	U/l	184	Gamma glut.-3-carb.-4-nitro.
	U/l	195	Gamma glut'3-carb'4-nitro(IFCC)
	U/l	190	Gamma Glutamyl-4-Nitroanilide

Beckman Coulter AU Series			Calibration Serum Level 3 (CAL 3)
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
Glucose	mg/dl	276	Glucose Dehydrogenase
	mmol/l	15.3	
	mg/dl	274	Glucose Oxidase
	mmol/l	15.2	
	mg/dl	274	GOD/02-Beckman method
	mmol/l	15.2	
	mg/dl	270	Hexokinase
	mmol/l	15.0	
Iron	µg/dl	221	Colorimetric with ppt.
	µmol/l	39.6	
	µg/dl	220	Colorimetric without ppt.
	µmol/l	39.4	
	µg/dl	219	Optical Emission Spectroscopy
	µmol/l	39.1	
Lactate	mg/dl	48.6	Colorimetric - Lactate oxidase
	mmol/l	5.39	
	mg/dl	48.3	Enzymatic Electrode
	mmol/l	5.36	
	mg/dl	44.4	UV-LDH
	mmol/l	4.93	
LD (LDH)	U/l	302	L to P Beckman (Extinction Coeff)
	U/l	322	L to P, IFCC
	U/l	330	Lactate to Pyruvate methods
	U/l	701	P to L Scandinavian & Dutch
	U/l	326	Pyruvate 1.4 mM - Beckman LD-P
Lipase	U/l	63	Other Colorimetric
Lithium	mg/dl	1.32	Spectrophotometric
	mmol/l	1.90	
Magnesium	mg/dl	4.28	Arsenazo III
	mmol/l	1.76	
	mg/dl	4.18	Calmagite
	mmol/l	1.72	
	mg/dl	4.18	Methylthymol Blue
	mmol/l	1.72	
	mg/dl	4.20	Xylidyl Blue
	mmol/l	1.73	
Phosphate Inorganic	mg/dl	7.35	Beckman PHOSm kit (365nm)
	mmol/l	2.37	

Beckman Coulter AU Series			Calibration Serum Level 3 (CAL 3)
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
Phosphate Inorganic	mg/dl	7.28	Phosphomolybdate Enzymatic
	mmol/l	2.35	
	mg/dl	7.32	Phosphomolybdate UV
	mmol/l	2.36	
Potassium	mmol/l	6.12	Ion Selective Electrode Method
Protein Total	g/dl	4.90	Biuret reaction, CX4/5/7
	g/l	49.0	
	g/dl	4.86	Biuret reaction, end point
	g/l	48.6	
	g/dl	4.83	Biuret reaction, kinetic
	g/l	48.3	
Sodium	mmol/l	158	Ion Selective Electrode Method
TIBC	µg/dl	233	Calculated from Transferrin
	µmol/l	41.7	
	µg/dl	245	Direct Colorimetric
	µmol/l	43.9	
	µg/dl	252	FE+UIBC(saturation with iron)
	µmol/l	45.0	
Triglycerides	mg/dl	227	Abbott Architect Triglyceride 2
	mmol/l	2.57	
	mg/dl	241	Lipase/GK UV. no correction
	mmol/l	2.72	
	mg/dl	237	Lipase/GK UV., 0.11 mmol/l correction
	mmol/l	2.68	
	mg/dl	244	Lipase/Glycerol Dehydrogenase
	mmol/l	2.76	
	mg/dl	241	Lipase/GPO-PAP No Correction
	mmol/l	2.72	
	mg/dl	238	Lipase/GPO-PAP, 0.11mmol/l correction
	mmol/l	2.69	
	mg/dl	246	Quidel Triage Meter Plus
	mmol/l	2.78	
Urea	mg/dl	118	Beckman - Conductivity
	mg/dl (BUN)	54.9	
	mmol/l	19.6	

Beckman Coulter AU Series			Calibration Serum Level 3 (CAL 3)
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
Urea	mg/dl	119	Urease - hypochlorite
	mg/dl (BUN)	55.4	
	mmol/l	19.8	
	mg/dl	120	Urease, end point
	mg/dl (BUN)	55.7	
	mmol/l	19.9	
	mg/dl	120	Urease, kinetic
	mg/dl (BUN)	56.0	
	mmol/l	20.0	
Uric Acid (Urate)	mg/dl	9.09	Beckman AU Non US calibrator (66300)
	mmol/l	0.541	
	µmol/l	541	
	mg/dl	8.97	Beckman AU US calibrator (DR0070)
	mmol/l	0.534	
	µmol/l	534	
	mg/dl	9.19	Reduction Methods
	mmol/l	0.547	
	µmol/l	547	
	mg/dl	9.23	Uricase @ 293 nm
	mmol/l	0.549	
	µmol/l	549	
	mg/dl	9.04	Uricase perox. no ascorb. ox.
	mmol/l	0.538	
	µmol/l	538	
	mg/dl	9.11	Uricase Perox. with ascorb. ox
	mmol/l	0.542	
	µmol/l	542	
	mg/dl	8.96	Uricase Perox. with ascorb. ox @ 546nm
	mmol/l	0.533	
	µmol/l	533	
	mg/dl	9.36	Uricase, catalase 340nm.
	mmol/l	0.557	
	µmol/l	557	

Beckman Coulter DxC600/DxC800			Calibration Serum Level 3 (CAL 3)		
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28					
Size: 20 x 5 ml					
Analyte		Unit	Target	Method	
Albumin	g/dl	3.08	Bromocresol Purple		
	g/l	30.8			
Alkaline Phosphatase	U/l	290	AMP optimised to IFCC		

Method		Calibration Serum Level 3 (CAL 3)	
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
Acid Phosphatase (Total)	U/l	21	Naphthyl phos. sub., end point
Albumin	g/dl	3.06	Abbott Alinity Albumin BCG 2
	g/l	30.6	
	g/dl	2.91	Abbott Alinity Albumin BCP 2
	g/l	29.1	
	g/dl	3.08	Abbott Architect Albumin BCG 2
	g/l	30.8	
	g/dl	2.92	Abbott Architect Albumin BCP 2
	g/l	29.2	
	g/dl	3.48	Agappe - Bromocresol Green
	g/l	34.8	
	g/dl	3.17	Bromocresol Green
	g/l	31.7	
	g/dl	3.02	Bromocresol Purple
	g/l	30.2	
g/dl	3.05	Nephelometric Assays	
g/l	30.5		
g/dl	3.28	Ortho Vitros Microslide Systems	
g/l	32.8		
g/dl	3.10	Turbidimetric Assays	
g/l	31.0		
Alkaline Phosphatase	U/l	318	Abbott Alinity Alkaline Phosphatase 2
	U/l	320	Abbott Architect Alkaline Phosphatase 2
	U/l	318	AMP non-optimised
	U/l	316	AMP optimised to IFCC
	U/l	337	Beckman AMP (Calibrator)
	U/l	284	Colorimetric
	U/l	268	Ortho Vitros Microslide Systems
	U/l	274	Roche AMP buffer IFCC
	U/l	293	Siemens/Dade Dimension AMP buffer
alpha - HBDH	U/l	342	Oxobutyrate < 10 mmol/l
ALT (GPT)	U/l	122	Abbott Alinity ALT 2
	U/l	125	Abbott Architect ALT 2
	U/l	141	Beckman IFCC Ref. with P5P
	U/l	139	Beckman Mod. IFCC Ref. without P5P
	U/l	152	Ortho Vitros Microslide Systems
	U/l	153	Ortho Vitros MicroSlide visible
	U/l	141	Tris Buffer With P5P

Method		Calibration Serum Level 3 (CAL 3)	
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
ALT (GPT)	U/l	139	Tris Buffer Without P5P
Amylase Pancreatic	U/l	232	Immunoinhibition, EPS substrate
	U/l	224	Roche Liquid Stable pNPG7
Amylase Total	U/l	274	Abbott Alinity Amylase 2
	U/l	274	Abbott Architect Amylase 2
	U/l	273	Abbott Architect/Alinity cal factor 3431
	U/l	294	Agappe - CNPG3
	U/l	261	Beckman blocked pNPG7
	U/l	260	Beckman CNPG3 (Extinction Coeff)
	U/l	259	Beckman CNPG3 (Master Cal)
	U/l	262	Beckman maltotetraose
	U/l	250	BM/Roche, Colorimetric pNPG7
	U/l	158	Ortho Vitros Microslide Systems
	U/l	249	Other Roche 2-chloro-pNPG7
	U/l	265	pNP Maltotrioside substrates
	U/l	251	Roche Integra 2-chloro-pNPG7
	U/l	250	Roche Liquid Stable pNPG7
	U/l	287	Siemens - blocked pNPG7
	U/l	288	Siemens/Dade Behring 2-chloro-pNPG3
AST (GOT)	U/l	138	Abbott Alinity AST 2
	U/l	140	Abbott Architect AST 2
	U/l	136	Beckman Mod. IFCC Ref. without P5P
	U/l	169	Ortho Vitros MicroSlide visible
	U/l	131	Tris Buffer Without P5P
Bicarbonate	mmol/l	13.6	Enzymatic
Bile Acids	µmol/l	43.4	Enzymatic Colorimetric
Bilirubin Direct	mg/dl	1.24	Diazo/ Sulphanilic Siemens Dimension
	µmol/l	21.2	
	mg/dl	1.45	Diazo/Sulphanilic Beckman DxC
	µmol/l	24.8	
	mg/dl	1.81	Oxidation to Biliverdin/Vanadate
	µmol/l	30.9	
mg/dl	1.85	Roche DPD Doumas standardised	
	µmol/l		31.6
mg/dl	2.10	Roche DPD JG standardised	
	µmol/l		35.9
Bilirubin Total	mg/dl	5.31	Abbott Alinity Total Bilirubin 2
	µmol/l	90.8	

Method		Calibration Serum Level 3 (CAL 3)		
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28				
Size: 20 x 5 ml				
Analyte	Unit	Target	Method	
Bilirubin Total	mg/dl	5.34	Abbott Architect Total Bilirubin 2	
	µmol/l	91.2		
	mg/dl	5.31	Diazo With Dichloroaniline	
	µmol/l	90.8		
	mg/dl	5.41	Diazo With Sulphanilic Acid	
	µmol/l	92.4		
	mg/dl	4.94	Diazonium Ion	
	µmol/l	84.4		
	mg/dl	4.96	Dichlorophenyl Diazonium	
µmol/l	84.8			
	mg/dl	5.42	DPD (Beckman AU)	
	µmol/l	92.6		
	mg/dl	5.25	Ortho Vitros MicroSlide Total Bil	
	µmol/l	89.7		
	mg/dl	5.71	Oxidation to Biliverdin/Vanadate	
	µmol/l	97.6		
	Calcium	mg/dl	12.1	Arsenazo III
		mmol/l	3.02	
		mg/dl	12.1	Cresolphthalein Complexone
mmol/l		3.03		
mg/dl		12.3	NM-BAPTA	
mmol/l	3.06			
	mg/dl	12.2	Ortho Vitros Microslide Systems	
	mmol/l	3.04		
	Chloride	mmol/l	111	ISE Indirect
		mmol/l	113	Ortho Vitros Microslide Systems
	Cholesterol	mg/dl	275	Abbott Alinity Cholesterol 2
mmol/l		7.13		
mg/dl		277	Abbott Architect Cholesterol 2	
mmol/l		7.18		
mg/dl		279	Cholesterol Dehydrogenase	
mmol/l		7.22		
mg/dl		280	Cholesterol Oxidase - Abell Kendall	
mmol/l	7.25			
	mg/dl	280	Cholesterol Oxidase - IDMS	
	mmol/l	7.25		
	mg/dl	275	Ortho Vitros Microslide Systems	
	mmol/l	7.12		

Method		Calibration Serum Level 3 (CAL 3)	
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
Cholesterol	mg/dl	268	Siemens Dimension
	mmol/l	6.95	
Cholinesterase	U/l	5723	Colorimetric - Butyrylthiocholine
	U/l	8742	Siemens Atellica Cholinesterase_2
CK Total	U/l	544	Abbott CK-NAC (IFCC)
	IU/l	544	
	U/l	563	Beckman CK-NAC (IFCC)
	IU/l	563	
	U/l	518	CK-NAC (IFCC)
	IU/l	518	
	U/l	529	CK-NAC substrate start (DGKC)
	IU/l	529	
	U/l	515	Creatine Phosphate Substrate Start
	IU/l	515	
Creatinine	U/l	421	Ortho Vitros Microslide Systems
	IU/l	421	
	mg/dl	4.03	Abbott Alinity Creatinine 2
	µmol/l	357	
	mg/dl	4.01	Abbott Architect Creatinine 2
	µmol/l	355	
	mg/dl	3.81	Alkaline picrate no deproteinisation
	µmol/l	337	
	mg/dl	3.98	IDMS Traceable
	µmol/l	352	
mg/dl	3.77	Jaffe Rate Blanked	
µmol/l	334		
mg/dl	3.98	Jaffe rate blanked comp. (-26µmol/l)	
µmol/l	352		
mg/dl	3.90	Jaffe rate comp. (-18umol/l)	
µmol/l	345		
mg/dl	4.15	Roche Creatinine Plus	
µmol/l	367		
mg/dl	4.03	Vitros, IDMS traceable	
µmol/l	357		
D-3-Hydroxybutyrate	mmol/l	1.21	Tris buffer 100mmol pH 8.5
gamma-GT	U/l	199	Abbott Alinity GGT 2
	U/l	199	Abbott Architect GGT 2
	U/l	189	Gamma glut.-3-carb.-4-nitro.
	U/l	197	Gamma glut'3-carb'4-nitro(IFCC)

Method		Calibration Serum Level 3 (CAL 3)	
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
gamma-GT	U/l	211	Ortho Vitros Microslide Systems
GLDH	U/l	25	Triethanolamine buffer
Glucose	mg/dl	276	Glucose Oxidase
	mmol/l	15.3	
	mg/dl	272	Hexokinase
	mmol/l	15.1	
	mg/dl	258	Ortho Vitros Microslide Systems
	mmol/l	14.3	
Iron	µg/dl	227	Abbott Alinity Iron 2
	µmol/l	40.6	
	µg/dl	225	Abbott Architect Chemilum
	µmol/l	40.3	
	µg/dl	220	Colorimetric with ppt.
	µmol/l	39.3	
	µg/dl	219	Colorimetric without ppt.
	µmol/l	39.1	
	µg/dl	215	Ortho Vitros Microslide Systems
	µmol/l	38.5	
Lactate	mg/dl	49.5	Colorimetric - Lactate oxidase
	mmol/l	5.49	
	mg/dl	49.5	Enzymatic Electrode
	mmol/l	5.49	
	mg/dl	51.6	Ion Selective Electrode
	mmol/l	5.73	
LD (LDH)	U/l	323	Abbott Alinity LD 2
	U/l	321	Abbott Architect LD 2
	U/l	332	L to P, IFCC
	U/l	332	Lactate to Pyruvate methods
	U/l	381	Ortho Vitros IFCC Traceable
	U/l	687	P to L Scandinavian & Dutch
	U/l	670	P to L, German methods
	U/l	648	P to L, SFBC
Lipase	U/l	66	Colorimetric Roche
	U/l	555	Ortho Vitros Microslide Systems
	U/l	64	Other Colorimetric
Lithium	mg/dl	1.35	Ion Selective Electrode
	mmol/l	1.94	
	mg/dl	1.33	Spectrophotometric
	mmol/l	1.91	

Method		Calibration Serum Level 3 (CAL 3)		
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28				
Size: 20 x 5 ml				
Analyte	Unit	Target	Method	
Magnesium	mg/dl	4.23	Arsenazo III	
	mmol/l	1.74		
	mg/dl	4.20	Chlorphosphonazo III	
	mmol/l	1.73		
	mg/dl	4.28	Enzymatic	
	mmol/l	1.76		
	mg/dl	4.23	Methylthymol Blue	
mmol/l	1.74			
Osmolality	mg/dl	4.35	Ortho Vitros Microslide Systems	
	mmol/l	1.79		
	mg/dl	4.20	Xylidyl Blue	
	mmol/l	1.73		
	mOsm/Kg	344	Calculated	
	mOsm/Kg	384		
	Phosphate Inorganic	mg/dl	7.10	Ortho Vitros Microslide Systems
mmol/l		2.29		
mg/dl		7.35	Phosphomolybdate Enzymatic	
mmol/l		2.37		
mg/dl		7.32	Phosphomolybdate UV	
mmol/l		2.36		
Potassium	mmol/l	6.13	Ion Selective Electrode Method	
Protein Total	g/dl	4.95	Abbott Alinity Total Protein 2	
	g/l	49.5		
	g/dl	5.01	Abbott Architect total Protein 2	
	g/l	50.1		
	g/dl	4.85	Biuret reaction, end point	
	g/l	48.5		
g/dl	4.84	Biuret reaction, kinetic		
g/l	48.4			
Sodium	g/dl	4.97	Ortho Vitros Microslide Systems	
	g/l	49.7		
	mmol/l	157	Ion Selective Electrode Method	
	mmol/l	157		
	TIBC	µg/dl	243	Calculated from Transferrin
		µmol/l	43.5	
µg/dl		260	Direct Colorimetric	
µmol/l		46.6		

Method		Calibration Serum Level 3 (CAL 3)	
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
TIBC	µg/dl	247	FE+UIBC(saturation with iron)
	µmol/l	44.1	
Triglycerides	mg/dl	235	Abbott Architect Triglyceride 2
	mmol/l	2.65	
	mg/dl	242	Lipase/GK UV. no correction
	mmol/l	2.74	
	mg/dl	242	Lipase/Glycerol Dehydrogenase
	mmol/l	2.74	
	mg/dl	242	Lipase/GPO-PAP No Correction
	mmol/l	2.74	
Urea	mg/dl	242	Lipase/GPO-PAP, 0.11mmol/l correction
	mmol/l	2.74	
	mg/dl	280	Ortho Vitros Microslide Systems
	mmol/l	3.16	
	mg/dl	257	Siemens Atellica TRIG_ 2
	mmol/l	2.90	
Urea	mg/dl	122	Abbott Architect Urea Nitrogen 2
	mg/dl	56.8	
	mmol/l	20.3	
	mg/dl	109	Ortho Vitros Microslide Systems
	mg/dl	51.0	
	mmol/l	18.2	
	mg/dl	118	Urease, end point
	mg/dl	55.2	
	mmol/l	19.7	
	mg/dl	120	Urease, kinetic
	mg/dl	55.7	
	mmol/l	19.9	
Uric Acid (Urate)	mg/dl	8.89	Abbott Alinity Uric Acid 2
	mmol/l	0.529	
	µmol/l	529	
	mg/dl	8.87	Abbott Architect Uric Acid 2
	mmol/l	0.528	
	µmol/l	528	

Method		Calibration Serum Level 3 (CAL 3)	
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
Uric Acid (Urate)	mg/dl	9.09	Beckman AU Non US calibrator (66300)
	mmol/l	0.541	
	μmol/l	541	
	mg/dl	8.57	Ortho Vitros Microslide Systems
	mmol/l	0.510	
	μmol/l	510	
	mg/dl	8.92	Uricase @ 293 nm
	mmol/l	0.531	
	μmol/l	531	
	mg/dl	8.96	Uricase perox. no ascorb. ox.
	mmol/l	0.533	
	μmol/l	533	
	mg/dl	8.97	Uricase Perox. with ascorb. ox
	mmol/l	0.534	
	μmol/l	534	
	mg/dl	8.84	Uricase Perox. with ascorb. ox @ 546nm
	mmol/l	0.526	
	μmol/l	526	
Zinc	μg/dl	195	Colorimetric with deprot.
	μmol/l	29.9	
		μg/dl	202
	μmol/l	31.0	

Mindray BA BA 88A		Calibration Serum Level 3 (CAL 3)	
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
Cholesterol	mg/dl	272	Cholesterol Oxidase - Abell Kendall
	mmol/l	7.05	
Glucose	mg/dl	270	Glucose Oxidase
	mmol/l	15.0	

Mindray BS Series			Calibration Serum Level 3 (CAL 3)
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
Albumin	g/dl	3.32	Agappe - Bromocresol Green
	g/l	33.2	
	g/dl	3.10	Bromocresol Green
	g/l	31.0	
Alkaline Phosphatase	U/l	337	AMP optimised to IFCC
ALT (GPT)	U/l	150	Beckman Mod. IFCC Ref. without P5P
Amylase Total	U/l	301	Agappe - CNPG3
	U/l	263	Amyloclastic Methods
	U/l	261	Beckman CNPG3 (Master Cal)
	U/l	266	Human CNPG3 (IFCC)
	U/l	272	I.L. 2-chloro-pNPG3
	U/l	274	pNP Maltotrioside substrates
	U/l	269	Roche Liquid Stable pNPG7
AST (GOT)	U/l	128	Agappe - IFCC
	U/l	137	Beckman IFCC Ref. with P5P
	U/l	133	Beckman Mod. IFCC Ref. without P5P
	U/l	136	Tris Buffer With P5P
	U/l	132	Tris Buffer Without P5P
Bicarbonate	mmol/l	14.4	Enzymatic
	mmol/l	14.5	PEP Carboxylase
Bilirubin Direct	mg/dl	1.85	Diazo With Sulphanilic Acid
	µmol/l	31.7	
	mg/dl	1.74	Oxidation to Biliverdin/Vanadate
	µmol/l	29.7	
Bilirubin Total	mg/dl	4.95	Agappe - TAB
	µmol/l	84.6	Diazo With Sulphanilic Acid
	mg/dl	5.75	
	µmol/l	98.3	Diazonium Ion
	mg/dl	5.74	
	µmol/l	98.1	Dichlorophenyl Diazonium
	mg/dl	5.44	
	µmol/l	93.0	Oxidation to Biliverdin/Vanadate
mg/dl	5.39		
µmol/l	92.2		
Calcium	mg/dl	11.9	Agappe - ARSENAZO
	mmol/l	2.96	
	mg/dl	12.2	Arsenazo III
	mmol/l	3.04	

Mindray BS Series		Calibration Serum Level 3 (CAL 3)	
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
Calcium	mg/dl	12.3	Cresolphthalein Complexone
	mmol/l	3.07	
Chloride	mmol/l	112	ISE Indirect
Cholesterol	mg/dl	272	Agappe - CHOD-PAP
	mmol/l	7.04	
	mg/dl	270	Cholesterol Dehydrogenase
	mmol/l	6.99	
	mg/dl	276	Cholesterol Oxidase - Abell Kendall
	mmol/l	7.14	
	mg/dl	274	Cholesterol Oxidase - IDMS
	mmol/l	7.10	
Cholinesterase	U/l	5975	Colorimetric - Butyrylthiocholine
CK Total	U/l	548	CK-NAC (IFCC)
	IU/l	548	
	U/l	582	Gel Agglutination
	IU/l	582	
Creatinine	mg/dl	3.89	Alkaline picrate no deproteinisation
	µmol/l	344	
	mg/dl	4.19	Enzymatic
	µmol/l	371	
	mg/dl	4.31	IDMS Traceable
	µmol/l	381	
	mg/dl	3.86	Jaffe Rate Blanked
	µmol/l	342	
	mg/dl	4.07	Jaffe rate blanked comp. (-26umol/l)
	µmol/l	360	
	mg/dl	3.79	Jaffe rate comp. (-18umol/l)
	µmol/l	335	
gamma-GT	U/l	185	Beckman Szasz (Extinction Coeff.)
	U/l	192	DCL, gamma glut.-3-carb.-4-nitro.
	U/l	189	Gamma glut.-3-carb.-4-nitro.
	U/l	191	Gamma glut'3-carb'4-nitro(IFCC)
	U/l	190	Gamma Glutamyl-4-Nitroanilide
Glucose	mg/dl	276	Agappe - GOD-PAP
	mmol/l	15.3	
	mg/dl	274	Glucose Oxidase
	mmol/l	15.2	
	mg/dl	276	Hexokinase
	mmol/l	15.3	

Mindray BS Series		Calibration Serum Level 3 (CAL 3)	
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
Iron	µg/dl	216	Colorimetric with ppt.
	µmol/l	38.6	
	µg/dl	215	Colorimetric without ppt.
	µmol/l	38.5	
LD (LDH)	U/l	330	L to P, IFCC
	U/l	335	Lactate to Pyruvate methods
	U/l	671	P to L, German methods
	U/l	719	P to L, SFBC
Lipase	U/l	62	Other Colorimetric
Magnesium	mg/dl	4.33	Enzymatic
	mmol/l	1.78	
	mg/dl	4.20	Xylidyl Blue
	mmol/l	1.73	
Phosphate Inorganic	mg/dl	7.25	Phosphomolybdate Enzymatic
	mmol/l	2.34	
	mg/dl	7.01	Phosphomolybdate UV
	mmol/l	2.26	
Potassium	mmol/l	6.16	Ion Selective Electrode Method
Protein Total	g/dl	5.08	Agappe Ultra Stik
	g/l	50.8	
	g/dl	4.93	Biuret reaction, end point
	g/l	49.3	
	g/dl	4.97	Biuret reaction, kinetic
	g/l	49.7	
Sodium	mmol/l	158	Ion Selective Electrode Method
TIBC	µg/dl	231	FE+UIBC(saturation with iron)
	µmol/l	41.4	
Triglycerides	mg/dl	236	Lipase/GK UV. no correction
	mmol/l	2.67	
	mg/dl	259	Lipase/GK UV., 0.11 mmol/l correction
	mmol/l	2.93	
	mg/dl	230	Lipase/Glycerol Dehydrogenase
	mmol/l	2.60	
	mg/dl	237	Lipase/GPO-PAP No Correction
	mmol/l	2.68	
mg/dl	240	Lipase/GPO-PAP, 0.11mmol/l correction	
mmol/l	2.71		
mg/dl	219	Quidel Triage Meter Plus	
mmol/l	2.47		

Mindray BS Series		Calibration Serum Level 3 (CAL 3)	
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
Urea	mg/dl	114	Agappe - BERTHELOT
	mg/dl (BUN)	52.9	
	mmol/l	18.9	
	mg/dl	121	Agappe Ultra Stik
	mg/dl (BUN)	56.6	
	mmol/l	20.2	
	mg/dl	120	Urease - hypochlorite
	mg/dl (BUN)	56.0	
	mmol/l	20.0	
	mg/dl	120	Urease, end point
	mg/dl (BUN)	56.0	
	mmol/l	20.0	
	mg/dl	120	Urease, kinetic
	mg/dl (BUN)	56.0	
	mmol/l	20.0	
Uric Acid (Urate)	mg/dl	9.01	Agappe - URICASE - PAP
	mmol/l	0.536	
	µmol/l	536	
	mg/dl	8.81	Agappe - URICASE - TOPS
	mmol/l	0.524	
	µmol/l	524	
	mg/dl	9.06	Uricase perox. no ascorb. ox.
	mmol/l	0.539	
	µmol/l	539	
	mg/dl	8.87	Uricase Perox. with ascorb. ox
	mmol/l	0.528	
	µmol/l	528	
mg/dl	8.91	Uricase Perox. with ascorb. ox @ 546nm	
mmol/l	0.530		
µmol/l	530		

Ortho Clinical Diagnostics 46/56/XT 7600 (Microtip/well)			Calibration Serum Level 3 (CAL 3)
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
Alkaline Phosphatase	U/l	269	Ortho Vitros Microslide Systems
Amylase Total	U/l	160	Ortho Vitros Microslide Systems
AST (GOT)	U/l	171	Ortho Vitros MicroSlide visible
Bilirubin Total	mg/dl	5.24	Ortho Vitros MicroSlide Total Bil
	µmol/l	89.6	
Calcium	mg/dl	12.1	Ortho Vitros Microslide Systems
	mmol/l	3.03	
Chloride	mmol/l	114	Ortho Vitros Microslide Systems
Cholesterol	mg/dl	273	Ortho Vitros Microslide Systems
	mmol/l	7.06	
CK Total	U/l	422	Ortho Vitros Microslide Systems
	IU/l	422	

**Ortho Clinical Diagnostics VITROS
(no gen. #)**

Calibration Serum Level 3 (CAL 3)

Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28

Size: 20 x 5 ml

Analyte	Unit	Target	Method
Alkaline Phosphatase	U/l	279	Ortho Vitros Microslide Systems

Randox RX series		Calibration Serum Level 3 (CAL 3)	
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
Albumin	g/dl	3.28	Bromocresol Green
	g/l	32.8	
Alkaline Phosphatase	U/l	345	AMP optimised to IFCC
ALT (GPT)	U/l	152	Tris Buffer Without P5P
Amylase Total	U/l	281	Randox Liquid Ethylidene pNPG7
AST (GOT)	U/l	145	Tris Buffer Without P5P
Bilirubin Direct	mg/dl	2.04	Diazo With Sulphanilic Acid
	µmol/l	34.9	
	mg/dl	1.97	Oxidation to Biliverdin/Vanadate
	µmol/l	33.7	
Bilirubin Total	mg/dl	5.57	Diazo With Sulphanilic Acid
	µmol/l	95.2	
	mg/dl	5.76	Oxidation to Biliverdin/Vanadate
	µmol/l	98.5	
Calcium	mg/dl	12.4	Arsenazo III
	mmol/l	3.09	
CK Total	U/l	559	CK-NAC (IFCC)
	IU/l	559	
	U/l	560	CK-NAC substrate start (DGKC)
	IU/l	560	
Creatinine	mg/dl	3.57	Alkaline picrate no deproteinisation
	µmol/l	316	
gamma-GT	U/l	213	Gamma glut'3-carb'4-nitro(IFCC)
Glucose	mg/dl	286	Glucose Oxidase
	mmol/l	15.9	
	mg/dl	276	Hexokinase
	mmol/l	15.3	
Iron	µg/dl	226	Colorimetric without ppt.
	µmol/l	40.4	
Lactate	mg/dl	49.6	Colorimetric - Lactate oxidase
	mmol/l	5.51	
LD (LDH)	U/l	339	L to P, IFCC
	U/l	672	P to L, German methods
Lipase	U/l	78	Colorimetric Randox
Magnesium	mg/dl	4.20	Xylidyl Blue
	mmol/l	1.73	
Phosphate Inorganic	mg/dl	7.16	Phosphomolybdate UV
	mmol/l	2.31	

Randox RX series		Calibration Serum Level 3 (CAL 3)	
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
Protein Total	g/dl	4.94	Biuret reaction, end point
	g/l	49.4	
TIBC	µg/dl	275	Direct Colorimetric
	µmol/l	49.2	
Triglycerides	mg/dl	247	Lipase/GPO-PAP No Correction
	mmol/l	2.79	
Urea	mg/dl	116	Urease, kinetic
	mg/dl (BUN)	54.0	
	mmol/l	19.3	
Uric Acid (Urate)	mg/dl	9.16	Uricase Perox. with ascorb. ox @ 546nm
	mmol/l	0.545	
	µmol/l	545	

Roche Cobas c111		Calibration Serum Level 3 (CAL 3)	
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
Albumin	g/dl	3.20	Bromocresol Green
	g/l	32.0	
Alkaline Phosphatase	U/l	283	AMP optimised to IFCC
	U/l	285	Roche AMP buffer IFCC
ALT (GPT)	U/l	124	Tris Buffer With P5P
	U/l	124	Tris Buffer Without P5P
Amylase Total	U/l	253	Roche Liquid Stable pNPG7
AST (GOT)	U/l	122	Tris Buffer With P5P
	U/l	123	Tris Buffer Without P5P
Bilirubin Direct	mg/dl	2.09	Diazo with Dichloroaniline
	µmol/l	35.8	
	mg/dl	2.25	Dichlorophenyl Diazonium
	µmol/l	38.5	
	mg/dl	2.23	Roche DPD JG standardised
	µmol/l	38.1	
Bilirubin Total	mg/dl	5.32	Diazo With Sulphanilic Acid
	µmol/l	90.9	
	mg/dl	4.62	Diazonium Ion
	µmol/l	78.9	
	mg/dl	4.83	Dichlorophenyl Diazonium
	µmol/l	82.5	
Calcium	mg/dl	11.9	Arsenazo III
	mmol/l	2.98	
	mg/dl	12.3	NM-BAPTA
	mmol/l	3.07	
Cholesterol	mg/dl	274	Cholesterol Dehydrogenase
	mmol/l	7.09	
	mg/dl	273	Cholesterol Oxidase - Abell Kendall
	mmol/l	7.07	
	mg/dl	269	Cholesterol Oxidase - IDMS
	mmol/l	6.98	
CK Total	U/l	508	CK-NAC (IFCC)
	IU/l	508	
Creatinine	mg/dl	3.86	Jaffe Rate Blanked
	µmol/l	342	
	mg/dl	3.90	Jaffe rate blanked comp. (-26µmol/l)
	µmol/l	345	
	mg/dl	3.97	Jaffe rate comp. (-18µmol/l)
	µmol/l	351	

Roche Cobas c111		Calibration Serum Level 3 (CAL 3)	
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
Creatinine	mg/dl	3.86	Roche Creatinine Plus
	µmol/l	342	
Glucose	mg/dl	274	Glucose Oxidase
	mmol/l	15.2	
	mg/dl	277	Hexokinase
	mmol/l	15.4	
LD (LDH)	U/l	344	L to P, IFCC
Protein Total	g/dl	4.86	Biuret reaction, end point
	g/l	48.6	
Triglycerides	mg/dl	250	Lipase/GK UV. no correction
	mmol/l	2.82	
	mg/dl	239	Lipase/Glycerol Dehydrogenase
	mmol/l	2.70	
	mg/dl	239	Lipase/GPO-PAP No Correction
	mmol/l	2.70	
	mg/dl	243	Lipase/GPO-PAP, 0.11mmol/l correction
	mmol/l	2.75	
Urea	mg/dl	113	Urease, end point
	mg/dl (BUN)	52.6	
	mmol/l	18.8	
	mg/dl	115	Urease, kinetic
	mg/dl (BUN)	53.8	
	mmol/l	19.2	
Uric Acid (Urate)	mg/dl	8.82	Uricase perox. no ascorb. ox.
	mmol/l	0.525	
	µmol/l	525	
	mg/dl	8.82	Uricase Perox. with ascorb. ox
	mmol/l	0.525	
	µmol/l	525	
	mg/dl	8.76	Uricase Perox. with ascorb. ox @ 546nm
	mmol/l	0.521	
	µmol/l	521	

Roche Cobas c303/c503			Calibration Serum Level 3 (CAL 3)
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
Albumin	g/dl	3.31	Bromocresol Green
	g/l	33.1	
	g/dl	2.95	Bromocresol Purple
	g/l	29.5	
	g/dl	3.01	Turbidimetric Assays
	g/l	30.1	
Alkaline Phosphatase	U/l	260	AMP optimised to IFCC
	U/l	260	Colorimetric
	U/l	261	Roche AMP buffer IFCC
ALT (GPT)	U/l	145	Colorimetric
	U/l	141	Tris Buffer With P5P
	U/l	142	Tris Buffer Without P5P
Amylase Pancreatic	U/l	219	Immunoinhibition, EPS substrate
	U/l	220	Randox Liquid Stable pNPG7
	U/l	222	Roche Liquid Stable pNPG7
Amylase Total	U/l	248	BM/Roche, Colorimetric pNPG7
	U/l	248	Other Roche 2-chloro-pNPG7
	U/l	248	Roche Integra 2-chloro-pNPG7
	U/l	249	Roche Liquid Stable pNPG7
AST (GOT)	U/l	157	Colorimetric
	U/l	161	Tris Buffer With P5P
	U/l	159	Tris buffer with P5P, NVKC
	U/l	161	Tris Buffer Without P5P
Bicarbonate	mmol/l	13.3	Colorimetric
	mmol/l	13.0	Enzymatic
	mmol/l	13.2	PEP Carboxylase
Bile Acids	µmol/l	44.0	Enzymatic Colorimetric
	µmol/l	45.4	Enzymatic Colorimetric - Sentinel
Bilirubin Direct	mg/dl	2.16	Dichlorophenyl Diazonium
	µmol/l	37.0	
	mg/dl	1.90	Roche DPD Dumas standardised
	µmol/l	32.4	
	mg/dl	2.25	Roche DPD JG standardised
	µmol/l	38.5	
Bilirubin Total	mg/dl	4.77	Diazo With Dichloroaniline
	µmol/l	81.6	
	mg/dl	4.64	Diazo With Sulphanilic Acid
	µmol/l	79.4	

Roche Cobas c303/c503			Calibration Serum Level 3 (CAL 3)		
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28					
Size: 20 x 5 ml					
Analyte		Unit	Target	Method	
Bilirubin Total	mg/dl	4.64	Diazonium Ion		
	µmol/l	79.3			
	mg/dl	4.65	Dichlorophenyl Diazonium		
	µmol/l	79.5			
Calcium	mg/dl	12.5	Arsenazo III		
	mmol/l	3.11			
	mg/dl	12.2	Cresolphthalein Complexone		
	mmol/l	3.05			
	mg/dl	12.3	NM-BAPTA		
	mmol/l	3.06			
Chloride	mmol/l	108	ISE Indirect		
Cholesterol	mg/dl	281	Cholesterol Dehydrogenase		
	mmol/l	7.27			
	mg/dl	279	Cholesterol Oxidase - Abell Kendall		
	mmol/l	7.22			
	mg/dl	278	Cholesterol Oxidase - IDMS		
	mmol/l	7.20			
Cholinesterase	U/l	5576	Colorimetric - Butyrylthiocholine		
CK Total	U/l	507	CK-NAC (IFCC)		
	IU/l	507			
	U/l	515	CK-NAC substrate start (DGKC)		
	IU/l	515			
	U/l	513	Creatine Phosphate Substrate Start		
	IU/l	513			
Copper	µg/dl	162	Colorimetric		
	µmol/l	25.4			
Creatinine	mg/dl	4.08	Alkaline picrate no deproteinisation		
	µmol/l	361			
	mg/dl	3.94	Alkaline Picrate With Deproteinisation		
	µmol/l	349			
	mg/dl	4.19	Enzymatic		
	µmol/l	371			
	mg/dl	4.28	IDMS Traceable		
	µmol/l	379			
	mg/dl	4.03	Jaffe Rate Blanked		
	µmol/l	357			
	mg/dl	4.01	Jaffe rate blanked comp. (-26µmol/l)		
	µmol/l	355			

Roche Cobas c303/c503			Calibration Serum Level 3 (CAL 3)
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
Creatinine	mg/dl	4.07	Jaffe rate comp. (-18umol/l)
	µmol/l	360	
	mg/dl	4.17	Roche Creatinine Plus
	µmol/l	369	
gamma-GT	U/l	192	Gamma glut.-3-carb.-4-nitro.
	U/l	202	Gamma glut'3-carb'4-nitro(IFCC)
	U/l	202	Gamma Glutamyl-4-Nitroanilide
Glucose	mg/dl	272	Glucose Dehydrogenase
	mmol/l	15.1	
	mg/dl	274	Glucose Oxidase
	mmol/l	15.2	
	mg/dl	274	Hexokinase
	mmol/l	15.2	
Iron	µg/dl	217	Colorimetric with ppt.
	µmol/l	38.9	
	µg/dl	217	Colorimetric without ppt.
	µmol/l	38.8	
Lactate	mg/dl	49.5	Colorimetric - Lactate oxidase
	mmol/l	5.50	
LD (LDH)	U/l	338	L to P, IFCC
	U/l	339	Lactate to Pyruvate methods
Lipase	U/l	67	Colorimetric Roche
	U/l	66	Other Colorimetric
	U/l	66	Roche Turbidimetric with colipase
Lithium	mg/dl	1.33	Spectrophotometric
	mmol/l	1.91	
Magnesium	mg/dl	4.23	Atomic Absorption
	mmol/l	1.74	
	mg/dl	4.23	Chlorphosphonazo III
	mmol/l	1.74	
	mg/dl	4.23	Enzymatic
	mmol/l	1.74	
	mg/dl	4.33	Methylthymol Blue
	mmol/l	1.78	
	mg/dl	4.23	Xylidyl Blue
	mmol/l	1.74	
Osmolality	mOsm/ Kg	344	Calculated

Roche Cobas c303/c503			Calibration Serum Level 3 (CAL 3)
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
Phosphate Inorganic	mg/dl	7.28	Phosphomolybdate Enzymatic
	mmol/l	2.35	
	mg/dl	7.25	Phosphomolybdate UV
	mmol/l	2.34	
Potassium	mmol/l	6.23	Ion Selective Electrode Method
Protein Total	g/dl	4.71	Biuret reaction, CX4/5/7
	g/l	47.1	
	g/dl	4.74	Biuret reaction, end point
	g/l	47.4	
	g/dl	4.73	Biuret reaction, kinetic
	g/l	47.3	
Sodium	mmol/l	158	Ion Selective Electrode Method
TIBC	µg/dl	244	Calculated from Transferrin
	µmol/l	43.7	
	µg/dl	243	FE+UIBC(saturation with iron)
	µmol/l	43.5	
Triglycerides	mg/dl	244	Lipase/GK UV. no correction
	mmol/l	2.76	
	mg/dl	246	Lipase/GK UV., 0.11 mmol/l correction
	mmol/l	2.78	
	mg/dl	242	Lipase/Glycerol Dehydrogenase
	mmol/l	2.74	
	mg/dl	244	Lipase/GPO-PAP No Correction
	mmol/l	2.76	
	mg/dl	243	Lipase/GPO-PAP, 0.11mmol/l correction
	mmol/l	2.75	
Urea	mg/dl	119	Urease, end point
	mg/dl (BUN)	55.4	
	mmol/l	19.8	
	mg/dl	118	Urease, kinetic
	mg/dl (BUN)	54.9	
	mmol/l	19.6	
Uric Acid (Urate)	mg/dl	8.74	Uricase @ 293 nm
	mmol/l	0.520	
	µmol/l	520	

Roche Cobas c303/c503		Calibration Serum Level 3 (CAL 3)	
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
Uric Acid (Urate)	mg/dl	8.72	Uricase perox. no ascorb. ox.
	mmol/l	0.519	
	μmol/l	519	
	mg/dl	8.69	Uricase Perox. with ascorb. ox
	mmol/l	0.517	
	μmol/l	517	
	mg/dl	8.72	Uricase Perox. with ascorb. ox @ 546nm
	mmol/l	0.519	
	μmol/l	519	
	mg/dl	8.64	Uricase, catalase 340nm.
	mmol/l	0.514	
	μmol/l	514	

Roche Cobas c311		Calibration Serum Level 3 (CAL 3)	
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
Albumin	g/dl	3.29	Bromocresol Green
	g/l	32.9	
	g/dl	3.23	Bromocresol Purple
	g/l	32.3	
	g/dl	3.21	Turbidimetric Assays
	g/l	32.1	
Alkaline Phosphatase	U/l	286	AMP optimised to IFCC
	U/l	280	Colorimetric
	U/l	282	Roche AMP buffer IFCC
ALT (GPT)	U/l	133	Tris Buffer With P5P
	U/l	130	Tris Buffer Without P5P
Amylase Total	U/l	250	BM/Roche, Colorimetric pNPG7
	U/l	247	Other Roche 2-chloro-pNPG7
	U/l	250	Roche Integra 2-chloro-pNPG7
	U/l	252	Roche Liquid Stable pNPG7
AST (GOT)	U/l	125	Tris Buffer Without P5P
Bilirubin Direct	mg/dl	1.95	Diazo With Sulphanilic Acid
	µmol/l	33.3	
	mg/dl	1.91	Dichlorophenyl Diazonium
	µmol/l	32.6	
	mg/dl	1.92	Roche DPD JG standardised
	µmol/l	32.8	
Bilirubin Total	mg/dl	4.84	Diazo With Dichloroaniline
	µmol/l	82.7	
	mg/dl	4.80	Diazo With Sulphanilic Acid
	µmol/l	82.0	
	mg/dl	4.82	Diazonium Ion
	µmol/l	82.4	
	mg/dl	4.78	Dichlorophenyl Diazonium
	µmol/l	81.7	
Calcium	mg/dl	12.4	Arsenazo III
	mmol/l	3.09	
	mg/dl	12.3	Cresolphthalein Complexone
	mmol/l	3.06	
	mg/dl	12.3	NM-BAPTA
	mmol/l	3.08	
Chloride	mmol/l	108	ISE Indirect
Cholesterol	mg/dl	278	Cholesterol Dehydrogenase
	mmol/l	7.21	

Roche Cobas c311		Calibration Serum Level 3 (CAL 3)	
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
Cholesterol	mg/dl	280	Cholesterol Oxidase - Abell Kendall
	mmol/l	7.24	
	mg/dl	280	Cholesterol Oxidase - IDMS
	mmol/l	7.24	
CK Total	U/l	516	CK-NAC (IFCC)
	IU/l	516	
	U/l	519	CK-NAC substrate start (DGKC)
	IU/l	519	
	U/l	521	Creatine Phosphate Substrate Start
	IU/l	521	
Creatinine	mg/dl	3.99	Alkaline picrate no deproteinisation
	µmol/l	353	
	mg/dl	4.12	Enzymatic
	µmol/l	365	
	mg/dl	4.05	IDMS Traceable
	µmol/l	358	
	mg/dl	4.01	Jaffe Rate Blanked
	µmol/l	355	
	mg/dl	4.00	Jaffe rate blanked comp. (-26µmol/l)
	µmol/l	354	
mg/dl	4.08	Jaffe rate comp. (-18µmol/l)	
µmol/l	361		
mg/dl	4.09	Roche Creatinine Plus	
µmol/l	362		
gamma-GT	U/l	202	DCL, gamma glut.-3-carb.-4-nitro.
	U/l	186	Gamma glut.-3-carb.-4-nitro.
	U/l	201	Gamma glut'3-carb'4-nitro(IFCC)
	U/l	189	Gamma Glutamyl-4-Nitroanilide
Glucose	mg/dl	272	Glucose Oxidase
	mmol/l	15.1	
	mg/dl	274	Hexokinase
	mmol/l	15.2	
Iron	µg/dl	221	Colorimetric with ppt.
	µmol/l	39.5	
	µg/dl	220	Colorimetric without ppt.
	µmol/l	39.3	
Lactate	mg/dl	49.5	Colorimetric - Lactate oxidase
	mmol/l	5.50	
LD (LDH)	U/l	337	L to P, IFCC

Roche Cobas c311		Calibration Serum Level 3 (CAL 3)	
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
LD (LDH)	U/l	338	Lactate to Pyruvate methods
Lipase	U/l	67	Colorimetric Roche
	U/l	66	Other Colorimetric
	U/l	66	Roche Turbidimetric with colipase
Magnesium	mg/dl	4.23	Atomic Absorption
	mmol/l	1.74	
	mg/dl	4.13	Chlorphosphonazo III
	mmol/l	1.70	
	mg/dl	4.18	Enzymatic
	mmol/l	1.72	
	mg/dl	4.18	Xylidyl Blue
	mmol/l	1.72	
Phosphate Inorganic	mg/dl	7.35	Phosphomolybdate Enzymatic
	mmol/l	2.37	
	mg/dl	7.32	Phosphomolybdate UV
	mmol/l	2.36	
Potassium	mmol/l	6.19	Ion Selective Electrode Method
Protein Total	g/dl	4.75	Biuret reaction, end point
	g/l	47.5	
	g/dl	4.80	Biuret reaction, kinetic
	g/l	48.0	
Sodium	mmol/l	158	Ion Selective Electrode Method
Triglycerides	mg/dl	243	Lipase/GK UV. no correction
	mmol/l	2.75	
	mg/dl	242	Lipase/Glycerol Dehydrogenase
	mmol/l	2.74	
	mg/dl	243	Lipase/GPO-PAP No Correction
	mmol/l	2.75	
	mg/dl	241	Lipase/GPO-PAP, 0.11mmol/l correction
	mmol/l	2.72	
Urea	mg/dl	119	Urease, end point
	mg/dl (BUN)	55.4	
	mmol/l	19.8	
	mg/dl	119	Urease, kinetic
	mg/dl (BUN)	55.4	
	mmol/l	19.8	

Roche Cobas c311		Calibration Serum Level 3 (CAL 3)	
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
Uric Acid (Urate)	mg/dl	8.79	Uricase perox. no ascorb. ox.
	mmol/l	0.523	
	µmol/l	523	
	mg/dl	8.76	Uricase Perox. with ascorb. ox
	mmol/l	0.521	
	µmol/l	521	
	mg/dl	8.82	Uricase Perox. with ascorb. ox @ 546nm
	mmol/l	0.525	
	µmol/l	525	
	mg/dl	8.89	Uricase, catalase 340nm.
	mmol/l	0.529	
	µmol/l	529	

Roche Cobas c501/c502			Calibration Serum Level 3 (CAL 3)
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
Albumin	g/dl	3.30	Bromocresol Green
	g/l	33.0	
	g/dl	3.15	Bromocresol Purple
	g/l	31.5	
Alkaline Phosphatase	U/l	287	AMP optimised to IFCC
	U/l	280	Colorimetric
	U/l	288	Roche AMP buffer IFCC
ALT (GPT)	U/l	135	Tris Buffer With P5P
	U/l	129	Tris Buffer Without P5P
Amylase Pancreatic	U/l	224	Immunoinhibition, EPS substrate
	U/l	224	Roche Liquid Stable pNPG7
Amylase Total	U/l	249	BM/Roche, Colorimetric pNPG7
	U/l	247	Other Roche 2-chloro-pNPG7
	U/l	249	Roche Integra 2-chloro-pNPG7
	U/l	250	Roche Liquid Stable pNPG7
AST (GOT)	U/l	177	Tris Buffer With P5P
	U/l	125	Tris Buffer Without P5P
Bicarbonate	mmol/l	13.4	Enzymatic
	mmol/l	12.8	PEP Carboxylase
Bile Acids	µmol/l	45.2	Enzymatic Colorimetric
Bilirubin Direct	mg/dl	1.97	Diazo with Dichloroaniline
	µmol/l	33.7	
	mg/dl	1.95	Diazo With Sulphanilic Acid
	µmol/l	33.4	
	mg/dl	1.99	Dichlorophenyl Diazonium
	µmol/l	34.1	
	mg/dl	1.98	Roche DPD JG standardised
	µmol/l	33.8	
Bilirubin Total	mg/dl	4.80	Diazo With Dichloroaniline
	µmol/l	82.1	
	mg/dl	4.76	Diazo With Sulphanilic Acid
	µmol/l	81.3	
	mg/dl	4.76	Diazonium Ion
	µmol/l	81.4	
	mg/dl	4.78	Dichlorophenyl Diazonium
	µmol/l	81.7	
Calcium	mg/dl	12.2	Arsenazo III
	mmol/l	3.04	

Roche Cobas c501/c502		Calibration Serum Level 3 (CAL 3)	
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
Calcium	mg/dl	12.3	Cresolphthalein Complexone
	mmol/l	3.06	
	mg/dl	12.3	NM-BAPTA
	mmol/l	3.06	
Chloride	mmol/l	108	ISE Indirect
Cholesterol	mg/dl	277	Cholesterol Oxidase - Abell Kendall
	mmol/l	7.18	
	mg/dl	276	Cholesterol Oxidase - IDMS
	mmol/l	7.14	
Cholinesterase	U/l	5653	Colorimetric - Butyrylthiocholine
CK Total	U/l	514	CK-NAC (IFCC)
	IU/l	514	
	U/l	518	CK-NAC serum start (DGKC)
	IU/l	518	
	U/l	513	CK-NAC substrate start (DGKC)
	IU/l	513	
	U/l	515	Creatine Phosphate Substrate Start
	IU/l	515	
Creatinine	mg/dl	4.02	Alkaline picrate no deproteinisation
	µmol/l	356	
	mg/dl	3.89	Alkaline Picrate With Deproteinisation
	µmol/l	344	
	mg/dl	4.08	Enzymatic
	µmol/l	361	
	mg/dl	3.95	Jaffe Rate Blanked
	µmol/l	350	
	mg/dl	3.99	Jaffe rate blanked comp. (-26µmol/l)
	µmol/l	353	
mg/dl	3.95	Jaffe rate comp. (-18µmol/l)	
µmol/l	350		
mg/dl	4.14	Roche Creatinine Plus	
µmol/l	366		
gamma-GT	U/l	183	Gamma glut.-3-carb.-4-nitro.
	U/l	200	Gamma glut'3-carb'4-nitro(IFCC)
	U/l	199	Gamma Glutamyl-4-Nitroanilide
Glucose	mg/dl	267	Glucose Dehydrogenase
	mmol/l	14.8	
	mg/dl	272	Glucose Oxidase
	mmol/l	15.1	

Roche Cobas c501/c502			Calibration Serum Level 3 (CAL 3)		
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28					
Size: 20 x 5 ml					
Analyte		Unit	Target	Method	
Glucose	mg/dl	272	Hexokinase		
	mmol/l	15.1			
Iron	µg/dl	221	Colorimetric with ppt.		
	µmol/l	39.6			
	µg/dl	222	Colorimetric without ppt.		
	µmol/l	39.8			
Lactate	mg/dl	49.9	Colorimetric - Lactate oxidase		
	mmol/l	5.54			
LD (LDH)	U/l	338	L to P, IFCC		
	U/l	336	Lactate to Pyruvate methods		
Lipase	U/l	67	Colorimetric Roche		
	U/l	67	Roche Turbidimetric with colipase		
Lithium	mg/dl	1.34	Spectrophotometric		
	mmol/l	1.93			
Magnesium	mg/dl	4.16	Arsenazo III		
	mmol/l	1.71			
	mg/dl	4.25	Atomic Absorption		
	mmol/l	1.75			
	mg/dl	4.23	Chlorphosphonazo III		
	mmol/l	1.74			
	mg/dl	4.20	Xylidyl Blue		
	mmol/l	1.73			
Phosphate Inorganic	mg/dl	7.22	Phosphomolybdate Enzymatic		
	mmol/l	2.33			
	mg/dl	7.28	Phosphomolybdate UV		
mmol/l	2.35				
Potassium	mmol/l	6.20	Ion Selective Electrode Method		
Protein Total	g/dl	4.75	Biuret reaction, end point		
	g/l	47.5			
	g/dl	4.74	Biuret reaction, kinetic		
	g/l	47.4			
Sodium	mmol/l	158	Ion Selective Electrode Method		
TIBC	µg/dl	259	Calculated from Transferrin		
	µmol/l	46.4			
	µg/dl	242	FE+UIBC(saturation with iron)		
	µmol/l	43.3			
Triglycerides	mg/dl	243	Lipase/GK UV. no correction		
	mmol/l	2.75			

Roche Cobas c501/c502		Calibration Serum Level 3 (CAL 3)	
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
Triglycerides	mg/dl	239	Lipase/GK UV., 0.11 mmol/l correction
	mmol/l	2.70	
	mg/dl	242	Lipase/Glycerol Dehydrogenase
	mmol/l	2.74	
	mg/dl	242	Lipase/GPO-PAP No Correction
	mmol/l	2.74	
	mg/dl	242	Lipase/GPO-PAP, 0.11mmol/l correction
	mmol/l	2.74	
Urea	mg/dl	120	Urease, end point
	mg/dl	56.0	
	(BUN)		
	mmol/l	20.0	Urease, kinetic
	mg/dl	119	
	mg/dl	55.4	
Uric Acid (Urate)	(BUN)		
	mmol/l	19.8	
	mg/dl	8.67	Uricase perox. no ascorb. ox.
	mmol/l	0.516	
	µmol/l	516	
	mg/dl	8.71	Uricase Perox. with ascorb. ox
	mmol/l	0.518	
	µmol/l	518	
	mg/dl	8.71	Uricase Perox. with ascorb. ox @ 546nm
	mmol/l	0.518	
	µmol/l	518	
	mg/dl	8.74	Uricase, catalase 340nm.
	mmol/l	0.520	
	µmol/l	520	

Roche Cobas c701 / c702 / c711			Calibration Serum Level 3 (CAL 3)
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
Albumin	g/dl	3.29	Bromocresol Green
	g/l	32.9	
	g/dl	2.99	Bromocresol Purple
	g/l	29.9	
	g/dl	3.34	Turbidimetric Assays
	g/l	33.4	
Alkaline Phosphatase	U/l	275	Roche AMP buffer IFCC
ALT (GPT)	U/l	143	Tris Buffer With P5P
	U/l	129	Tris Buffer Without P5P
Amylase Pancreatic	U/l	222	Roche Liquid Stable pNPG7
Amylase Total	U/l	251	Roche Liquid Stable pNPG7
AST (GOT)	U/l	163	Tris Buffer With P5P
	U/l	125	Tris Buffer Without P5P
Bicarbonate	mmol/l	12.5	Colorimetric
	mmol/l	13.4	Enzymatic
Bile Acids	µmol/l	45.5	Enzymatic Colorimetric
Bilirubin Direct	mg/dl	2.07	Dichlorophenyl Diazonium
	µmol/l	35.4	
	mg/dl	1.70	Roche DPD Doumas standardised
	µmol/l	29.0	
	mg/dl	2.11	Roche DPD JG standardised
	µmol/l	36.0	
Bilirubin Total	mg/dl	4.92	Diazo With Sulphanilic Acid
	µmol/l	84.1	
	mg/dl	4.77	Diazonium Ion
	µmol/l	81.6	
	mg/dl	4.74	Dichlorophenyl Diazonium
	µmol/l	81.0	
Calcium	mg/dl	12.3	Cresolphthalein Complexone
	mmol/l	3.06	
	mg/dl	12.3	NM-BAPTA
	mmol/l	3.06	
Chloride	mmol/l	109	ISE Indirect
Cholesterol	mg/dl	277	Cholesterol Oxidase - Abell Kendall
	mmol/l	7.18	
	mg/dl	279	Cholesterol Oxidase - IDMS
	mmol/l	7.23	
Cholinesterase	U/l	5588	Colorimetric - Butyrylthiocholine

Roche Cobas c701 / c702 / c711			Calibration Serum Level 3 (CAL 3)
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
CK Total	U/l	510	CK-NAC (IFCC)
	IU/l	510	
	U/l	509	CK-NAC substrate start (DGKC)
	IU/l	509	
Creatinine	mg/dl	4.15	Enzymatic
	µmol/l	367	
	mg/dl	4.00	Jaffe rate blanked comp. (-26µmol/l)
	µmol/l	354	
	mg/dl	4.05	Jaffe rate comp. (-18µmol/l)
	µmol/l	358	
	mg/dl	4.17	Roche Creatinine Plus
	µmol/l	369	
gamma-GT	U/l	189	Gamma glut.-3-carb.-4-nitro.
	U/l	200	Gamma glut'3-carb'4-nitro(IFCC)
Glucose	mg/dl	272	Hexokinase
	mmol/l	15.1	
Iron	µg/dl	215	Colorimetric with ppt.
	µmol/l	38.5	
	µg/dl	216	Colorimetric without ppt.
	µmol/l	38.6	
Lactate	mg/dl	49.2	Colorimetric - Lactate oxidase
	mmol/l	5.46	
LD (LDH)	U/l	337	L to P, IFCC
Lipase	U/l	67	Colorimetric Roche
Lithium	mg/dl	1.35	Spectrophotometric
	mmol/l	1.94	
Magnesium	mg/dl	4.18	Chlorphosphonazo III
	mmol/l	1.72	
	mg/dl	4.20	Xylidyl Blue
	mmol/l	1.73	
Phosphate Inorganic	mg/dl	7.22	Phosphomolybdate UV
	mmol/l	2.33	
Potassium	mmol/l	6.23	Ion Selective Electrode Method
Protein Total	g/dl	4.76	Biuret reaction, end point
	g/l	47.6	
Sodium	mmol/l	159	Ion Selective Electrode Method
TIBC	µg/dl	239	FE+UIBC(saturation with iron)
	µmol/l	42.7	

Roche Cobas c701 / c702 / c711			Calibration Serum Level 3 (CAL 3)
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
Triglycerides	mg/dl	250	Lipase/GK UV. no correction
	mmol/l	2.82	
	mg/dl	242	Lipase/GPO-PAP No Correction
	mmol/l	2.74	
	mg/dl	242	Lipase/GPO-PAP, 0.11mmol/l correction
	mmol/l	2.74	
Urea	mg/dl	118	Urease, kinetic
	mg/dl (BUN)	55.2	
	mmol/l	19.7	
Uric Acid (Urate)	mg/dl	8.69	Uricase perox. no ascorb. ox.
	mmol/l	0.517	
	µmol/l	517	
	mg/dl	8.61	Uricase Perox. with ascorb. ox
	mmol/l	0.512	
	µmol/l	512	
	mg/dl	8.64	Uricase Perox. with ascorb. ox @ 546nm
	mmol/l	0.514	
	µmol/l	514	

Roche Integra		Calibration Serum Level 3 (CAL 3)	
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
Albumin	g/dl	3.25	Bromocresol Green
	g/l	32.5	
Alkaline Phosphatase	U/l	283	AMP optimised to IFCC
	U/l	287	Roche AMP buffer IFCC
ALT (GPT)	U/l	125	Tris Buffer With P5P
	U/l	126	Tris Buffer Without P5P
Amylase Total	U/l	256	Roche Integra 2-chloro-pNPG7
	U/l	252	Roche Liquid Stable pNPG7
AST (GOT)	U/l	123	Tris Buffer Without P5P
Bilirubin Direct	mg/dl	1.99	Diazo With Sulphanilic Acid
	µmol/l	34.0	
	mg/dl	2.04	Dichlorophenyl Diazonium
	µmol/l	34.9	
Bilirubin Total	mg/dl	2.03	Roche DPD JG standardised
	µmol/l	34.7	
	mg/dl	4.83	Diazo With Sulphanilic Acid
	µmol/l	82.5	
Calcium	mg/dl	4.87	Diazonium Ion
	µmol/l	83.2	
	mg/dl	4.82	Dichlorophenyl Diazonium
	µmol/l	82.4	
Chloride	mg/dl	12.3	Cresolphthalein Complexone
	mmol/l	3.06	
	mg/dl	12.3	NM-BAPTA
	mmol/l	3.06	
Cholesterol	mmol/l	110	ISE Indirect
Cholesterol	mg/dl	277	Cholesterol Oxidase - Abell Kendall
	mmol/l	7.18	
	mg/dl	275	Cholesterol Oxidase - IDMS
	mmol/l	7.13	
CK Total	U/l	518	CK-NAC (IFCC)
	IU/l	518	
Creatinine	mg/dl	3.99	Alkaline picrate no deproteinisation
	µmol/l	353	
	mg/dl	3.90	Jaffe rate blanked comp. (-26µmol/l)
	µmol/l	345	
	mg/dl	3.83	Jaffe rate comp. (-18µmol/l)
	µmol/l	339	

Roche Integra		Calibration Serum Level 3 (CAL 3)		
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28				
Size: 20 x 5 ml				
Analyte	Unit	Target	Method	
Creatinine	mg/dl	4.06	Roche Creatinine Plus	
	µmol/l	359		
gamma-GT	U/l	185	Gamma glut.-3-carb.-4-nitro.	
	U/l	199	Gamma glut'3-carb'4-nitro(IFCC)	
Glucose	mg/dl	279	Hexokinase	
	mmol/l	15.5		
Iron	µg/dl	221	Colorimetric without ppt.	
	µmol/l	39.5		
LD (LDH)	U/l	343	L to P, IFCC	
Lipase	U/l	64	Colorimetric Roche	
Magnesium	mg/dl	4.11	Chlorphosphonazo III	
	mmol/l	1.69	Xylidyl Blue	
	mg/dl	4.13		
Phosphate Inorganic	mmol/l	1.70	Phosphomolybdate UV	
	mg/dl	7.41		Phosphomolybdate Enzymatic
	mmol/l	2.39		
	mg/dl	7.50		
mmol/l	2.42			
Potassium	mmol/l	6.15	Ion Selective Electrode Method	
Protein Total	g/dl	4.59	Biuret reaction, end point	
	g/l	45.9		
Sodium	mmol/l	157	Ion Selective Electrode Method	
Triglycerides	mg/dl	244	Lipase/GPO-PAP No Correction	
	mmol/l	2.76		
Urea	mg/dl	115	Urease, kinetic	
	mg/dl (BUN)	53.8		
	mmol/l	19.2		
Uric Acid (Urate)	mg/dl	8.94	Uricase perox. no ascorb. ox.	
	mmol/l	0.532		
	µmol/l	532		
	mg/dl	8.92	Uricase Perox. with ascorb. ox	
	mmol/l	0.531		
	µmol/l	531		
	mg/dl	9.04	Uricase Perox. with ascorb. ox @ 546nm	
	mmol/l	0.538		
	µmol/l	538		

Siemens ADVIA Chemistry Instruments			Calibration Serum Level 3 (CAL 3)
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
Albumin	g/dl	3.26	Bromocresol Green
	g/l	32.6	
ALT (GPT)	U/l	152	Tris Buffer Without P5P
Amylase Total	U/l	273	Siemens - blocked pNPG7
AST (GOT)	U/l	138	Tris Buffer Without P5P
Bilirubin Direct	mg/dl	1.68	Oxidation to Biliverdin/Vanadate
	µmol/l	28.8	
Bilirubin Total	mg/dl	5.85	Oxidation to Biliverdin/Vanadate
	µmol/l	100	
Calcium	mg/dl	12.3	Arsenazo III
	mmol/l	3.06	
Chloride	mmol/l	111	ISE Indirect
Cholesterol	mg/dl	289	Cholesterol Oxidase - Abell Kendall
	mmol/l	7.48	
Creatinine	mg/dl	3.89	Jaffe rate blanked comp. (-26µmol/l)
	µmol/l	344	
gamma-GT	U/l	191	Gamma glut'3-carb'4-nitro(IFCC)
Glucose	mg/dl	265	Hexokinase
	mmol/l	14.7	
Magnesium	mg/dl	4.20	Xylidyl Blue
	mmol/l	1.73	
Potassium	mmol/l	6.26	Ion Selective Electrode Method
Protein Total	g/dl	4.86	Biuret reaction, end point
	g/l	48.6	
Sodium	mmol/l	159	Ion Selective Electrode Method
Triglycerides	mg/dl	261	Lipase/GPO-PAP No Correction
	mmol/l	2.95	
Urea	mg/dl	122	Urease, kinetic
	mg/dl (BUN)	56.8	
	mmol/l	20.3	
Uric Acid (Urate)	mg/dl	9.26	Uricase perox. no ascorb. ox.
	mmol/l	0.551	
	µmol/l	551	

Siemens Atellica Solution			Calibration Serum Level 3 (CAL 3)
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
Albumin	g/dl	3.13	Bromocresol Green
	g/l	31.3	
	g/dl	3.01	Bromocresol Purple
	g/l	30.1	
Alkaline Phosphatase	U/l	286	AMP optimised to IFCC
	U/l	287	Siemens/Dade Dimension AMP buffer
ALT (GPT)	U/l	151	Siemens/Dade standard nonIFCC correlated
	U/l	147	Tris Buffer With P5P
	U/l	149	Tris Buffer Without P5P
Amylase Total	U/l	287	Siemens - blocked pNPG7
	U/l	289	Siemens/Dade Behring 2-chloro-pNPG3
AST (GOT)	U/l	138	Siemens/Dade standard non IFCC corr.
	U/l	138	Tris Buffer Without P5P
Bicarbonate	mmol/l	14.4	Enzymatic
	mmol/l	14.6	PEP Carboxylase
Bilirubin Direct	mg/dl	1.85	Diazo/ Sulphanilic Siemens Dimension
	µmol/l	31.6	
	mg/dl	1.78	Oxidation to Biliverdin/Vanadate
	µmol/l	30.4	
Bilirubin Total	mg/dl	4.88	Diazo With Dichloroaniline
	µmol/l	83.5	
	mg/dl	5.83	Diazo With Sulphanilic Acid
	µmol/l	99.7	
	mg/dl	5.77	Oxidation to Biliverdin/Vanadate
	µmol/l	98.6	
Calcium	mg/dl	12.2	Arsenazo III
	mmol/l	3.04	
	mg/dl	12.3	Cresolphthalein Complexone
	mmol/l	3.07	
Chloride	mmol/l	112	ISE Indirect
Cholesterol	mg/dl	285	Cholesterol Oxidase - Abell Kendall
	mmol/l	7.37	
	mg/dl	285	Cholesterol Oxidase - IDMS
	mmol/l	7.38	
	mg/dl	286	Siemens Dimension
	mmol/l	7.41	
Cholinesterase	U/l	8563	Colorimetric - Butyrylthiocholine
	U/l	8742	Siemens Atellica Cholinesterase_2

Siemens Atellica Solution			Calibration Serum Level 3 (CAL 3)
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
CK Total	U/l	501	CK-NAC (IFCC)
	IU/l	501	
	U/l	502	Creatine Phosphate Substrate Start
	IU/l	502	
Creatinine	mg/dl	3.99	Alkaline picrate no deproteinisation
	µmol/l	353	
	mg/dl	4.12	Enzymatic
	µmol/l	365	
	mg/dl	4.03	IDMS Traceable
	µmol/l	357	
	mg/dl	4.02	Jaffe Rate Blanked
	µmol/l	356	
	mg/dl	4.00	Jaffe rate blanked comp. (-26µmol/l)
	µmol/l	354	
gamma-GT	U/l	209	Gamma glut.-3-carb.-4-nitro.
	U/l	208	Gamma glut'3-carb'4-nitro(IFCC)
	U/l	207	Siemens Dimension
Glucose	mg/dl	274	Glucose Oxidase
	mmol/l	15.2	
	mg/dl	268	Hexokinase
	mmol/l	14.9	
Iron	µg/dl	220	Colorimetric with ppt.
	µmol/l	39.3	
	µg/dl	221	Colorimetric without ppt.
	µmol/l	39.5	
Lactate	mg/dl	48.7	Colorimetric - Lactate oxidase
	mmol/l	5.41	
	mg/dl	49.6	UV-LDH
	mmol/l	5.51	
LD (LDH)	U/l	329	L to P Siemens/Dade, non-IFCC
	U/l	327	L to P, IFCC
	U/l	327	Lactate to Pyruvate methods
Lipase	U/l	69	Colorimetric Dimension (LIP Kit)
	U/l	67	Other Colorimetric
Magnesium	mg/dl	4.20	Methylthymol Blue
	mmol/l	1.73	
	mg/dl	4.23	Xylidyl Blue
	mmol/l	1.74	

Siemens Atellica Solution			Calibration Serum Level 3 (CAL 3)
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
Phosphate Inorganic	mg/dl	7.22	Phosphomolybdate Enzymatic
	mmol/l	2.33	
	mg/dl	7.53	Phosphomolybdate UV
	mmol/l	2.43	
Potassium	mmol/l	6.06	Ion Selective Electrode Method
Protein Total	g/dl	4.84	Biuret reaction, end point
	g/l	48.4	
	g/dl	4.84	Biuret reaction, kinetic
	g/l	48.4	
Sodium	mmol/l	156	Ion Selective Electrode Method
TIBC	µg/dl	267	Direct Colorimetric
	µmol/l	47.7	
	µg/dl	264	FE+UIBC(saturation with iron)
	µmol/l	47.2	
	µg/dl	270	Removal Of Excess Free Iron
	µmol/l	48.3	
	mg/dl	253	Lipase/GK UV. no correction
	mmol/l	2.86	
	mg/dl	253	Lipase/GPO-PAP No Correction
	mmol/l	2.86	
	mg/dl	257	Siemens Atellica TRIG_2
	mmol/l	2.90	
Urea	mg/dl	120	Urease - hypochlorite
	mg/dl (BUN)	56.0	
	mmol/l	20.0	
	mg/dl	121	Urease, end point
	mg/dl (BUN)	56.6	
	mmol/l	20.2	
	mg/dl	120	Urease, kinetic
	mg/dl (BUN)	55.7	
	mmol/l	19.9	
Uric Acid (Urate)	mg/dl	9.09	Uricase @ 293 nm
	mmol/l	0.541	
	µmol/l	541	

Siemens Atellica Solution		Calibration Serum Level 3 (CAL 3)	
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
Uric Acid (Urate)	mg/dl	9.16	Uricase perox. no ascorb. ox.
	mmol/l	0.545	
	μmol/l	545	
	mg/dl	9.13	Uricase Perox. with ascorb. ox
	mmol/l	0.543	
	μmol/l	543	
	mg/dl	9.24	Uricase Perox. with ascorb. ox @ 546nm
	mmol/l	0.550	
	μmol/l	550	
	mg/dl	9.23	Uricase, catalase 340nm.
	mmol/l	0.549	
	μmol/l	549	

Siemens Dimension EXL/200			Calibration Serum Level 3 (CAL 3)
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
Albumin	g/dl	3.08	Bromocresol Green
	g/l	30.8	
	g/dl	3.01	Bromocresol Purple
	g/l	30.1	
Alkaline Phosphatase	U/l	297	AMP optimised to IFCC
	U/l	296	Siemens/Dade Dimension AMP buffer
ALT (GPT)	U/l	150	Siemens/Dade standard nonIFCC correlated
	U/l	151	Tris Buffer With P5P
Amylase Total	U/l	293	Siemens/Dade Behring 2-chloro-pNPG3
AST (GOT)	U/l	166	Siemens/Dade standard non IFCC corr.
	U/l	165	Tris Buffer With P5P
Bilirubin Direct	mg/dl	1.26	Diazo With Sulphanilic Acid
	µmol/l	21.5	
	mg/dl	1.23	Diazo/ Sulphanilic Siemens Dimension
	µmol/l	21.0	
Bilirubin Total	mg/dl	5.52	Diazo With Sulphanilic Acid
	µmol/l	94.3	
Calcium	mg/dl	11.9	Cresolphthalein Complexone
	mmol/l	2.98	
Chloride	mmol/l	110	ISE Indirect
Cholesterol	mg/dl	269	Cholesterol Oxidase - Abell Kendall
	mmol/l	6.96	
	mg/dl	264	Siemens Dimension
	mmol/l	6.83	
CK Total	U/l	502	CK-NAC (IFCC)
	IU/l	502	
Creatinine	mg/dl	4.01	Alkaline picrate no deproteinisation
	µmol/l	355	
	mg/dl	4.07	Enzymatic
	µmol/l	360	
	mg/dl	4.06	IDMS Traceable
	µmol/l	359	
	mg/dl	4.14	Jaffe Rate Blanked
	µmol/l	366	
gamma-GT	U/l	209	Gamma glut'3-carb'4-nitro(IFCC)
	U/l	232	Siemens Dimension
Glucose	mg/dl	272	Hexokinase
	mmol/l	15.1	

Siemens Dimension EXL/200			Calibration Serum Level 3 (CAL 3)
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
Iron	µg/dl	207	Colorimetric with ppt.
	µmol/l	37.0	
	µg/dl	207	Colorimetric without ppt.
	µmol/l	37.0	
LD (LDH)	U/l	318	L to P Siemens/Dade, non-IFCC
	U/l	327	L to P, IFCC
Magnesium	mg/dl	4.23	Methylthymol Blue
	mmol/l	1.74	
Phosphate Inorganic	mg/dl	7.47	Phosphomolybdate Enzymatic
	mmol/l	2.41	
	mg/dl	7.47	Phosphomolybdate UV
	mmol/l	2.41	
Potassium	mmol/l	6.17	Ion Selective Electrode Method
Protein Total	g/dl	4.92	Biuret reaction, end point
	g/l	49.2	
	g/dl	4.98	Biuret reaction, kinetic
	g/l	49.8	
Sodium	mmol/l	158	Ion Selective Electrode Method
Triglycerides	mg/dl	243	Lipase/GK UV. no correction
	mmol/l	2.75	
	mg/dl	243	Lipase/Glycerol Dehydrogenase
	mmol/l	2.75	
	mg/dl	242	Lipase/GPO-PAP No Correction
	mmol/l	2.74	
	mg/dl	244	Siemens Dimension
	mmol/l	2.76	
Urea	mg/dl	123	Urease, end point
	mg/dl (BUN)	57.4	
	mmol/l	20.5	
	mg/dl	123	Urease, kinetic
	mg/dl (BUN)	57.1	
	mmol/l	20.4	
Uric Acid (Urate)	mg/dl	8.89	Uricase @ 293 nm
	mmol/l	0.529	
	µmol/l	529	

Siemens Dimension EXL/200			Calibration Serum Level 3 (CAL 3)		
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28					
Size: 20 x 5 ml					
Analyte		Unit	Target	Method	
Uric Acid (Urate)	mg/dl	8.86	Uricase perox. no ascorb. ox.		
	mmol/l	0.527			
	μmol/l	527			
	mg/dl	9.13	Uricase Perox. with ascorb. ox		
	mmol/l	0.543			
	μmol/l	543			
	mg/dl	9.11	Uricase, catalase 340nm.		
	mmol/l	0.542			
	μmol/l	542			

Siemens Dimension RxL/Max/Xpand			Calibration Serum Level 3 (CAL 3)
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
Bilirubin Total	mg/dl	5.55	Diazo With Sulphanilic Acid
	μmol/l	94.8	

Thermo Fisher Sci / Binding Site Konelab 20/30/60/Indiko			Calibration Serum Level 3 (CAL 3)
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
Albumin	g/dl	3.11	Bromocresol Green
	g/l	31.1	
Alkaline Phosphatase	U/l	298	AMP optimised to IFCC
	U/l	319	Colorimetric
ALT (GPT)	U/l	144	Tris Buffer With P5P
	U/l	144	Tris Buffer Without P5P
AST (GOT)	U/l	137	Tris Buffer Without P5P
Bilirubin Total	mg/dl	5.28	Diazo With Dichloroaniline
	µmol/l	90.2	
	mg/dl	5.35	Diazo With Sulphanilic Acid
	µmol/l	91.4	
	mg/dl	5.36	Dichlorophenyl Diazonium
	µmol/l	91.7	
	mg/dl	5.20	Nitrobenzenediazonium Salt
	µmol/l	88.9	
Calcium	mg/dl	12.3	Arsenazo III
	mmol/l	3.07	
Cholesterol	mg/dl	291	Cholesterol Dehydrogenase
	mmol/l	7.54	Cholesterol Oxidase - Abell Kendall
	mg/dl	293	
	mmol/l	7.59	Cholesterol Oxidase - IDMS
CK Total	U/l	540	
	IU/l	540	
Creatinine	mg/dl	4.15	Enzymatic
	µmol/l	367	
	mg/dl	3.75	Jaffe Rate Blanked
	µmol/l	332	
	mg/dl	3.85	Jaffe rate blanked comp. (-26µmol/l)
	µmol/l	341	
gamma-GT	U/l	181	Gamma glut.-3-carb.-4-nitro.
	U/l	195	Gamma glut'3-carb'4-nitro(IFCC)
Glucose	mg/dl	281	Glucose Oxidase
	mmol/l	15.6	
	mg/dl	285	Hexokinase
	mmol/l	15.8	
Iron	µg/dl	222	Colorimetric with ppt.
	µmol/l	39.8	

Thermo Fisher Sci / Binding Site Konelab 20/30/60/Indiko			Calibration Serum Level 3 (CAL 3)
Lot. No: 1450UE Cat. No: CAL2351 Expiry: 2028/02/28			
Size: 20 x 5 ml			
Analyte	Unit	Target	Method
Iron	µg/dl	226	Colorimetric without ppt.
	µmol/l	40.5	
Magnesium	mg/dl	4.16	Xylidyl Blue
	mmol/l	1.71	
Phosphate Inorganic	mg/dl	7.53	Phosphomolybdate Enzymatic
	mmol/l	2.43	
	mg/dl	7.32	Phosphomolybdate UV
	mmol/l	2.36	
Protein Total	g/dl	4.97	Biuret reaction, end point
	g/l	49.7	
	g/dl	5.17	Biuret reaction, kinetic
	g/l	51.7	
Triglycerides	mg/dl	246	Lipase/Glycerol Dehydrogenase
	mmol/l	2.78	
	mg/dl	258	Lipase/GPO-PAP No Correction
	mmol/l	2.92	
Urea	mg/dl	123	Urease, end point
	mg/dl (BUN)	57.4	
	mmol/l	20.5	
	mg/dl	120	Urease, kinetic
	mg/dl (BUN)	56.0	
	mmol/l	20.0	
Uric Acid (Urate)	mg/dl	9.19	Uricase perox. no ascorb. ox.
	mmol/l	0.547	
	µmol/l	547	
	mg/dl	9.19	Uricase Perox. with ascorb. ox
	mmol/l	0.547	
	µmol/l	547	
	mg/dl	9.29	Uricase Perox. with ascorb. ox @ 546nm
	mmol/l	0.553	
	µmol/l	553	