

# HUMAN ASSAYED MULTI-SERA - LEVEL 3 (HUM ASY CONTROL 3)

<b>CAT. NO.</b> HE1532	<b>GTIN:</b> 05055273203608	<b>SIZE:</b> 20 x 5ml
<b>CAT. NO.</b> HS2611	<b>GTIN:</b> 05055273203813	<b>SIZE:</b> 5 x 5ml
<b>LOT NO.</b> 1072UE	<b>EXPIRY:</b> 2023-02-28	

**INTENDED USE**

This product is intended for *in vitro* diagnostic use, in the quality control of diagnostic assays. The Human Assayed Multi-sera is for the control of accuracy.

**DEVICE DESCRIPTION**

The Human Assayed Multi-sera is supplied at 2 levels, level 2 and 3. Target values and ranges are supplied for the analytes listed in the values section at both levels.

**SAFETY PRECAUTIONS AND WARNINGS**

For *in vitro* diagnostic use only. Do not pipette by mouth. Exercise the normal precautions required for handling laboratory reagents.

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.

Health and Safety Data Sheets are available on request.

**STORAGE AND STABILITY**

**OPENED:** Store refrigerated (+2°C to +8°C). Reconstituted serum is stable for 8 hours at +15°C to +25°C or 7 days at +2°C to +8°C, and 28 days when frozen once at -18°C to -24°C. (See Limitations)

**UNOPENED:** Store refrigerated (+2°C to +8°C). Stable to expiration date printed on individual vials.

**LIMITATIONS**

For Total & Prostatic Acid Phosphatase, the material should be stabilised by adding 1 drop (25µl - 30µl) of 0.7M Acetic acid solution to 1ml of the serum exactly 30 minutes after reconstitution. After stabilisation Total and Prostatic Acid Phosphatase is stable for 2 hours at +15°C to +25°C, 2 days at +2°C to +8°C, and 28 days when frozen once at -18°C to -24°C.

Alkaline Phosphatase levels in the reconstituted serum will rise over the stability period. It is recommended that the reconstituted serum is allowed to stand for 1 hour at +15°C to +25°C before measurement.

Bilirubin in the serum is light sensitive and it is recommended that the serum is stored in the dark. Stored in the dark, it is stable for 4 days at +2°C to +8°C. Do not store at +15°C to +25°C. Do not freeze.

NEFA is stable for 1 day at +2°C to +8°C.

Total PSA is stable for 4 days at +2°C to +8°C, or 28 days in aliquots frozen at -18°C to -24°C.

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

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

The control should not be used as a calibration material.

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

**PREPARATION FOR USE**

The Human Assayed Multi-sera is supplied lyophilised.

- Carefully reconstitute each vial of lyophilised serum with exactly 5ml of distilled water at +15°C to +25°C. Close the bottle and allow to stand for 30 minutes before use. Ensure contents are completely dissolved by swirling gently. Avoid formation of foam. Do not shake.
- Refer to the Control section of the individual analyser application.
- Refrigerate any unused material. Prior to reuse, mix contents thoroughly.

**MATERIALS PROVIDED**

Human Assayed Multi-sera - Level 3 20 x 5ml / 5 x 5ml

**MATERIALS REQUIRED BUT NOT PROVIDED**

Volumetric pipette

**ASSIGNED VALUES**

Due to the variation caused by test equipment, test reagents and laboratory technique, the quoted ranges are provided for guidance. It is recommended that these ranges are used until each laboratory has established its own ranges, based on individual laboratory requirements.

Each batch of assayed human serum is submitted to reference laboratories for assignment against international Reference Standards. Where international Reference Standards are unavailable, Reference Methods are used. Values are also collected from approx. 3000 laboratories worldwide and using a unique statistical analysis, a value is assigned.

With each batch, a control range is provided for individual parameters and each parameter method. The control range is equivalent to the assigned mean  $\pm 2S.D.$

If an instrument specific value is not available, refer to the Mean of all Instruments section. If necessary, contact Randox Laboratories - Technical Services, Northern Ireland, tel: +44 (0) 28 9445 1070 or email [Technical.Services@randox.com](mailto:Technical.Services@randox.com).

**NOTES**

® All trademarks recognised.

- (1) Applies only in Germany. Ranges established according to the Guidelines of the Federal Chamber of Physicians in Germany.
- (2) Values established by reference laboratories officially recognised by the Federal Chamber of Physicians in Germany.
- (3) DGKC: German Society for Clinical Chemistry.
- (4) IFCC: International Federation of Clinical Chemistry.
- (5) SCE: Scandinavian Committee on Enzymes.

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

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Dungloe, Donegal,  
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**Abbott Alinity/ Architect c/ci Systems®**
**ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)**

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

**Range**

Analyte	unit	Target	low	high	1SD	2SD	methods
Albumin	g/l	31.3	26.6	36.0	2.35	4.70	Bromocresol Green
	g/dl	3.13	2.66	3.60	0.24	0.47	
	g/l	30.1	25.5	34.7	2.30	4.60	Bromocresol Purple
	g/dl	3.01	2.55	3.47	0.23	0.46	
Alkaline Phosphatase	U/l	338	287	389	25.50	51.00	AMP optimised to IFCC 37°C
	U/l	336	286	386	25.00	50.00	AMP non-optimised 37°C
ALT (GPT)	U/l	143	114	172	14.50	29.00	Tris buffer without P5P 37°C
Amylase Pancreatic	U/l	260	221	299	19.50	39.00	Immunoinhibition EPS substrate 37°C
Amylase Total	U/l	326	277	375	24.50	49.00	Abbott Architect Non-IFCC Cal. 37°C
	U/l	362	308	416	27.00	54.00	Abbott Architect IFCC Cal. 37°C
AST (GOT)	U/l	137	110	164	13.50	27.00	Tris buffer without P5P 37°C
Bicarbonate	mmol/l	13.9	11.0	16.8	1.45	2.90	Enzymatic
Bile Acids	µmol/l	47.6	38.0	57.2	4.80	9.60	Enzymatic Colorimetric
Bilirubin Direct	µmol/l	25.8	20.4	31.2	2.70	5.40	Diazo with Sulphanilic Acid
	mg/dl	1.51	1.19	1.83	0.16	0.32	
	µmol/l	26.4	20.9	31.9	2.75	5.50	Diazo with Dichloroaniline (DCA)
	mg/dl	1.54	1.22	1.86	0.16	0.32	
Bilirubin Total	µmol/l	91.1	72.0	110	9.55	19.10	Diazo with Dichloroaniline (DCA)
	mg/dl	5.33	4.21	6.45	0.56	1.12	
	µmol/l	90.7	71.7	110	9.50	19.00	Diazo with Sulphanilic Acid
	mg/dl	5.31	4.19	6.43	0.56	1.12	


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Bilirubin Total	µmol/l	90.6	71.5	110	9.55	19.10	Diazonium ion
	mg/dl	5.30	4.18	6.42	0.56	1.12	
Calcium	mmol/l	3.11	2.80	3.42	0.16	0.31	Arsenazo III
	mg/dl	12.5	11.2	13.8	0.65	1.30	
Chloride	mmol/l	121	111	131	5.00	10.00	ISE indirect
Cholesterol	mmol/l	7.13	6.20	8.06	0.47	0.93	Cholesterol Oxidase
	mg/dl	275	239	311	18.00	36.00	
Cholinesterase	U/l	5849	4679	7019	585.00	1170.00	Colorimetric Butyrylthiocholine 37°C
CK Total	U/l	513	421	605	46.00	92.00	CK-NAC serum start (DGKC) 37°C
	U/l	515	422	608	46.50	93.00	
Copper	µmol/l	20.0	16.0	24.0	2.00	4.00	Colorimetric
	µg/dl	127	102	152	12.50	25.00	
Creatinine	µmol/l	397	317	477	40.00	80.00	Alkaline picrate no deproteinization
	mg/dl	4.49	3.58	5.40	0.46	0.91	
	µmol/l	394	315	473	39.50	79.00	Enzymatic UV method
	mg/dl	4.45	3.56	5.34	0.45	0.89	
	µmol/l	397	317	477	40.00	80.00	Jaffe rate blanked
	mg/dl	4.49	3.58	5.40	0.46	0.91	
	µmol/l	404	323	485	40.50	81.00	IDMS traceable
	mg/dl	4.57	3.65	5.49	0.46	0.92	
gamma-GT	U/l	170	144	196	13.00	26.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C
	U/l	168	142	194	13.00	26.00	
Glucose	mmol/l	15.3	13.0	17.6	1.15	2.30	Hexokinase
	mg/dl	276	234	318	21.00	42.00	
	mmol/l	15.0	12.7	17.3	1.15	2.30	Glucose oxidase
	mg/dl	270	229	311	20.50	41.00	



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Analyte	unit	Target	low	high	1SD	2SD	methods	
HDL - Cholesterol	mmol/l	2.70	2.30	3.10	0.20	0.40	Direct HDL PPD	
	mg/dl	104	88.8	119	7.60	15.20		
	mmol/l	2.62	2.23	3.01	0.20	0.39	Direct Clearance Method	
	mg/dl	101	86.1	116	7.45	14.90		
Iron	mmol/l	2.60	2.21	2.99	0.20	0.39	HDL - Ultra	
	mg/dl	100	85.3	115	7.35	14.70		
	Iron	µmol/l	38.0	31.2	44.8	3.40	6.80	Colorimetric with ppt.
		µg/dl	212	174	250	19.00	38.00	Colorimetric without ppt.
µmol/l		38.2	31.3	45.1	3.45	6.90		
Lactate	µg/dl	214	175	253	19.50	39.00	Colorimetric Lactate Oxidase	
	mmol/l	5.67	4.65	6.69	0.51	1.02		
LD (LDH)	mg/dl	51.1	41.9	60.3	4.60	9.20	L->P 37°C	
	U/l	364	310	418	27.00	54.00		
Lipase	U/l	363	308	418	27.50	55.00	L->P IFCC 37°C	
	U/l	56	45	67	5.50	11.00	Other Colorimetric 37°C	
Lithium	U/l	56	45	67	5.50	11.00	Spectrophotometric	
	mmol/l	2.03	1.79	2.27	0.12	0.24		
Magnesium	mg/dl	1.41	1.24	1.58	0.09	0.17	Arsenazo III	
	mmol/l	1.79	1.58	2.00	0.11	0.21		
	mg/dl	4.35	3.84	4.86	0.26	0.51	Enzymatic	
	mmol/l	1.78	1.57	1.99	0.11	0.21		
Osmolality	mg/dl	4.33	3.82	4.84	0.26	0.51	Calculated	
	mOsm/kg	348	278	418	35.00	70.00		
Phosphate Inorganic	mmol/l	2.21	1.88	2.54	0.17	0.33	Phosphomolybdate enzymatic	
	mg/dl	6.85	5.83	7.87	0.51	1.02		

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**Range**

Analyte	unit	Target	low	high	1SD	2SD	methods
Phosphate Inorganic	mmol/l	2.21	1.88	2.54	0.17	0.33	Phosphomolybdate UV
	mg/dl	6.85	5.83	7.87	0.51	1.02	
Potassium	mmol/l	6.33	5.82	6.84	0.26	0.51	ISE method - indirect
Protein Total	g/l	45.9	36.8	55.0	4.55	9.10	Biuret reaction end point
	g/dl	4.59	3.68	5.50	0.46	0.91	
	g/l	45.1	36.1	54.1	4.50	9.00	Biuret reaction kinetic
	g/dl	4.51	3.61	5.41	0.45	0.90	
Sodium	mmol/l	159	151	167	4.00	8.00	ISE method - indirect
TIBC	µmol/l	43.2	34.2	52.2	4.50	9.00	FE+UIBC(saturation with iron)
	µg/dl	241	191	291	25.00	50.00	
	µmol/l	39.6	31.3	47.9	4.15	8.30	Calculated from Transferrin
	µg/dl	221	175	267	23.00	46.00	
Triglycerides	mmol/l	2.98	2.51	3.45	0.24	0.47	Lipase/GPO-PAP no correction
	mg/dl	264	222	306	21.00	42.00	
	mmol/l	2.98	2.50	3.46	0.24	0.48	L/G Kinase EP. no correction
	mg/dl	264	221	307	21.50	43.00	
	mmol/l	2.90	2.44	3.36	0.23	0.46	Lipase/Glycerol Dehydrogenase
	mg/dl	257	216	298	20.50	41.00	
UIBC	µmol/l	4.50	3.69	5.31	0.41	0.81	Direct Colorimetric
	µg/dl	25.2	20.6	29.8	2.30	4.60	
Urea	mmol/l	19.6	16.7	22.5	1.45	2.90	Urease end point
	mg/dl	118	100	136	9.00	18.00	
	mmol/l	19.8	16.9	22.7	1.45	2.90	Urease kinetic
	mg/dl	119	102	136	8.50	17.00	
	mmol/l	19.8	16.8	22.8	1.50	3.00	BUN
	mg/dl	55.6	47.3	63.9	4.15	8.30	

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**Range**

Analyte	unit	Target	low	high	1SD	2SD	methods
Uric Acid (Urate)	mmol/l	0.56	0.49	0.63	0.04	0.07	Uricase peroxidase with ascorbate oxidase
	mg/dl	9.37	8.16	10.6	0.61	1.21	
	mmol/l	0.56	0.48	0.63	0.04	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.32	8.11	10.5	0.61	1.21	
	mmol/l	0.56	0.49	0.63	0.04	0.07	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	9.39	8.16	10.6	0.62	1.23	

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### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Albumin	g/l	29.2	24.9	33.5	2.15	4.30	Bromocresol Green
	g/dl	2.92	2.49	3.35	0.22	0.43	
	g/l	30.2	25.7	34.7	2.25	4.50	Bromocresol Purple
	g/dl	3.02	2.57	3.47	0.23	0.45	
Alkaline Phosphatase	U/l	511	434	588	38.50	77.00	Diethanolamine buffer DEA 37°C
	U/l	400	340	460	30.00	60.00	AMP optimised to IFCC 37°C
ALT (GPT)	U/l	147	118	176	14.50	29.00	Tris buffer without P5P 37°C
	U/l	147	118	176	14.50	29.00	Beckman (Extinction Coefficient) 37°C
Amylase Total	U/l	307	261	353	23.00	46.00	pNP Maltotriose substrates 37°C
	U/l	295	251	339	22.00	44.00	Beckman Coulter - blocked pNPG7 37°C
	U/l	291	247	335	22.00	44.00	Beckman CNPG3 (Extinction Coeff) 37°C
AST (GOT)	U/l	150	120	180	15.00	30.00	Tris buffer without P5P 37°C
	U/l	149	119	179	15.00	30.00	Beckman (Extinction Coefficient) 37°C
Bicarbonate	mmol/l	15.5	12.3	18.7	1.60	3.20	Enzymatic
Bilirubin Direct	µmol/l	21.1	16.7	25.5	2.20	4.40	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.23	0.977	1.48	0.13	0.25	
Bilirubin Total	µmol/l	92.0	72.7	111	9.65	19.30	Diazo with Dichloroaniline (DCA)
	mg/dl	5.38	4.25	6.51	0.57	1.13	
	µmol/l	89.4	70.6	108	9.40	18.80	Dichlorophenyl Diazonium (DPD)
	mg/dl	5.23	4.13	6.33	0.55	1.10	
	µmol/l	88.1	69.6	107	9.25	18.50	DPD (Beckman AU)
	mg/dl	5.15	4.07	6.23	0.54	1.08	



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### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Calcium	mmol/l	3.08	2.78	3.38	0.15	0.30	Cresolphthalein complexone
	mg/dl	12.3	11.1	13.5	0.60	1.20	
	mmol/l	3.09	2.78	3.40	0.16	0.31	Arsenazo III
	mg/dl	12.4	11.1	13.7	0.65	1.30	
Chloride	mmol/l	119	110	128	4.50	9.00	ISE indirect
Cholesterol	mmol/l	7.25	6.31	8.19	0.47	0.94	Cholesterol Oxidase
	mg/dl	280	244	316	18.00	36.00	
Cholinesterase	U/l	4793	3834	5752	479.50	959.00	Colorimetric Butyrylthiocholine 37°C
CK Total	U/l	519	426	612	46.50	93.00	CK-NAC (IFCC) 37°C
	U/l	522	428	616	47.00	94.00	Beckman CK-NAC (Extinction Coeff) 37°C
Creatinine	µmol/l	360	288	432	36.00	72.00	Alkaline picrate no deproteinization
	mg/dl	4.07	3.25	4.89	0.41	0.82	
	µmol/l	389	311	467	39.00	78.00	Enzymatic UV method
	mg/dl	4.40	3.51	5.29	0.45	0.89	
	µmol/l	392	313	471	39.50	79.00	Creatinine PAP method
	mg/dl	4.43	3.54	5.32	0.45	0.89	
	µmol/l	364	291	437	36.50	73.00	Jaffe rate blanked
	mg/dl	4.11	3.29	4.93	0.41	0.82	
	µmol/l	375	300	450	37.50	75.00	Jaffe rate blanked comp. (-26 µmol/l)
	mg/dl	4.24	3.39	5.09	0.43	0.85	
	µmol/l	364	291	437	36.50	73.00	Jaffe rate blanked compensated (-18 µmol/l)
	mg/dl	4.11	3.29	4.93	0.41	0.82	
	µmol/l	377	301	453	38.00	76.00	IDMS traceable
	mg/dl	4.26	3.40	5.12	0.43	0.86	

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Analyte	unit	Target	low	high	1SD	2SD	methods
D-3-Hydroxybutyrate	mmol/l	1.20	1.02	1.38	0.09	0.18	Tris buffer 100mmol pH 8.5
gamma-GT	U/l	177	151	203	13.00	26.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C
	U/l	156	133	179	11.50	23.00	Gamma glutamyl-4-nitroanilide 37°C
	U/l	173	147	199	13.00	26.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	171	145	197	13.00	26.00	Beckman Szasz (Extinction Coeff) 37°C
GLDH	U/l	38	30	46	4.00	8.00	Triethanolamine buffer 50 mmol 37°C
Glucose	mmol/l	15.6	13.2	18.0	1.20	2.40	Glucose dehydrogenase
	mg/dl	281	238	324	21.50	43.00	
	mmol/l	15.7	13.3	18.1	1.20	2.40	Hexokinase
	mg/dl	283	240	326	21.50	43.00	
	mmol/l	15.8	13.5	18.1	1.15	2.30	Glucose oxidase
	mg/dl	285	243	327	21.00	42.00	
HDL - Cholesterol	mmol/l	2.75	2.34	3.16	0.21	0.41	Direct HDL Immunoseparation
	mg/dl	106	90.3	122	7.85	15.70	
	mmol/l	2.77	2.35	3.19	0.21	0.42	Direct Clearance Method
	mg/dl	107	90.7	123	8.15	16.30	
	mmol/l	2.64	2.24	3.04	0.20	0.40	HDL - Ultra
	mg/dl	102	86.5	118	7.75	15.50	
Iron	µmol/l	40.2	33.0	47.4	3.60	7.20	Colorimetric with ppt.
	µg/dl	225	184	266	20.50	41.00	
	µmol/l	39.3	32.2	46.4	3.55	7.10	Colorimetric without ppt.
	µg/dl	220	180	260	20.00	40.00	
Lactate	mmol/l	5.34	4.38	6.30	0.48	0.96	Colorimetric Lactate Oxidase
	mg/dl	48.1	39.5	56.7	4.30	8.60	
LD (LDH)	U/l	355	302	408	26.50	53.00	L->P 37°C

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LD (LDH)	U/l	800	680	920	60.00	120.00	P->L Scandinavian & Dutch 37°C
	U/l	366	311	421	27.50	55.00	L->P IFCC 37°C
	U/l	353	300	406	26.50	53.00	L to P Beckman (Extinction Coeff) 37°C
Lipase	U/l	62	49	75	6.50	13.00	Other Colorimetric 37°C
	U/l	86	69	103	8.50	17.00	Randox Colorimetric 37°C
Lithium	mmol/l	2.00	1.76	2.24	0.12	0.24	Spectrophotometric
	mg/dl	1.39	1.22	1.56	0.09	0.17	
Magnesium	mmol/l	1.81	1.59	2.03	0.11	0.22	Xylidyl Blue
	mg/dl	4.40	3.86	4.94	0.27	0.54	
Osmolality	mOsm/kg	362	290	434	36.00	72.00	Calculated
Phosphate Inorganic	mmol/l	2.24	1.91	2.57	0.17	0.33	Phosphomolybdate enzymatic
	mg/dl	6.94	5.92	7.96	0.51	1.02	
	mmol/l	2.24	1.90	2.58	0.17	0.34	Phosphomolybdate UV
	mg/dl	6.94	5.89	7.99	0.53	1.05	
Potassium	mmol/l	6.31	5.80	6.82	0.26	0.51	ISE method - indirect
Protein Total	g/l	45.9	36.7	55.1	4.60	9.20	Biuret reaction end point
	g/dl	4.59	3.67	5.51	0.46	0.92	
	g/l	46.0	36.8	55.2	4.60	9.20	Biuret reaction kinetic
	g/dl	4.60	3.68	5.52	0.46	0.92	
Sodium	mmol/l	159	151	167	4.00	8.00	ISE method - indirect
TIBC	µmol/l	40.0	31.6	48.4	4.20	8.40	FE+UIBC(saturation with iron)
	µg/dl	224	177	271	23.50	47.00	
Triglycerides	mmol/l	2.96	2.49	3.43	0.24	0.47	Lipase/GPO-PAP no correction
	mg/dl	262	220	304	21.00	42.00	
	mmol/l	2.98	2.50	3.46	0.24	0.48	L/G Kinase EP. no correction
	mg/dl	264	221	307	21.50	43.00	

**Beckman Coulter AU Series®**

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Urea	mmol/l	19.4	16.5	22.3	1.45	2.90	Urease end point
	mg/dl	117	99.2	135	8.90	17.80	
	mmol/l	19.6	16.7	22.5	1.45	2.90	Urease kinetic
	mg/dl	118	100	136	9.00	18.00	
	mmol/l	19.6	16.7	22.5	1.45	2.90	BUN
	mg/dl	55.0	46.8	63.2	4.10	8.20	
Uric Acid (Urate)	mmol/l	0.58	0.50	0.65	0.04	0.08	Uricase peroxidase with ascorbate oxidase
	mg/dl	9.66	8.40	10.9	0.63	1.26	
	mmol/l	0.57	0.50	0.65	0.04	0.08	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.63	8.37	10.9	0.63	1.26	
	mmol/l	0.55	0.48	0.63	0.04	0.07	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	9.29	8.08	10.5	0.61	1.21	

## Beckman CX4/5/7/9/LX20®

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Albumin	g/l	32.2	27.4	37.0	2.40	4.80	Bromocresol Green
	g/dl	3.22	2.74	3.70	0.24	0.48	
	g/l	30.9	26.2	35.6	2.35	4.70	Bromocresol Purple
	g/dl	3.09	2.62	3.56	0.24	0.47	
Alkaline Phosphatase	U/l	364	310	418	27.00	54.00	p-Nitrophenylphosphate AMP 37°C
ALT (GPT)	U/l	137	109	165	14.00	28.00	Tris buffer without P5P 37°C
Amylase Total	U/l	303	258	348	22.50	45.00	Beckman Synchron AMY7 37°C
AST (GOT)	U/l	135	108	162	13.50	27.00	Tris buffer without P5P 37°C
Bicarbonate	mmol/l	14.3	11.3	17.3	1.50	3.00	Differential rate pH change
Bilirubin Total	µmol/l	89.0	70.3	108	9.35	18.70	Diazo with Sulphanilic Acid
	mg/dl	5.21	4.11	6.31	0.55	1.10	
Calcium	mmol/l	3.01	2.71	3.31	0.15	0.30	Ion selective electrode
	mg/dl	12.1	10.9	13.3	0.60	1.20	
Chloride	mmol/l	120	111	129	4.50	9.00	ISE indirect
Cholesterol	mmol/l	7.33	6.38	8.28	0.48	0.95	Cholesterol Oxidase
	mg/dl	283	246	320	18.50	37.00	
CK Total	U/l	535	439	631	48.00	96.00	Monothioglycerol 37°C
Creatinine	µmol/l	384	307	461	38.50	77.00	IDMS traceable
	mg/dl	4.34	3.47	5.21	0.44	0.87	
gamma-GT	U/l	140	119	161	10.50	21.00	Gamma glutamyl-4-nitroanilide 37°C
Glucose	mmol/l	15.2	13.0	17.4	1.10	2.20	Hexokinase
	mg/dl	274	234	314	20.00	40.00	

## Beckman CX4/5/7/9/LX20®

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Glucose	mmol/l	15.0	12.8	17.2	1.10	2.20	Glucose oxidase
	mg/dl	270	231	309	19.50	39.00	
Iron	µmol/l	39.7	32.5	46.9	3.60	7.20	Colorimetric without ppt.
	µg/dl	222	182	262	20.00	40.00	
LD (LDH)	U/l	298	253	343	22.50	45.00	L->P 37°C
Lipase	U/l	68	55	81	6.50	13.00	Other Colorimetric 37°C
Magnesium	mmol/l	1.76	1.55	1.97	0.11	0.21	Calmagite
	mg/dl	4.28	3.77	4.79	0.26	0.51	
Phosphate Inorganic	mmol/l	2.28	1.93	2.63	0.18	0.35	Phosphomolybdate UV
	mg/dl	7.07	5.98	8.16	0.55	1.09	
Potassium	mmol/l	6.33	5.83	6.83	0.25	0.50	ISE method - indirect
Protein Total	g/l	46.0	36.8	55.2	4.60	9.20	Biuret reaction end point
	g/dl	4.60	3.68	5.52	0.46	0.92	
	g/l	45.1	36.1	54.1	4.50	9.00	Biuret reaction kinetic
	g/dl	4.51	3.61	5.41	0.45	0.90	
Sodium	mmol/l	158	150	166	4.00	8.00	ISE method - indirect
Triglycerides	mmol/l	3.02	2.53	3.51	0.25	0.49	L/G Kinase EP. no correction
	mg/dl	267	224	310	21.50	43.00	
Urea	mmol/l	20.1	17.1	23.1	1.50	3.00	Urease kinetic
	mg/dl	121	103	139	9.00	18.00	
	mmol/l	20.1	17.1	23.1	1.50	3.00	BUN
	mg/dl	56.4	47.9	64.9	4.25	8.50	
Uric Acid (Urate)	mmol/l	0.54	0.47	0.61	0.04	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.12	7.95	10.3	0.59	1.17	

## Beckman DxC600/800®

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Albumin	g/l	32.2	27.4	37.0	2.40	4.80	Bromocresol Green
	g/dl	3.22	2.74	3.70	0.24	0.48	
	g/l	30.9	26.3	35.5	2.30	4.60	Bromocresol Purple
	g/dl	3.09	2.63	3.55	0.23	0.46	
Alkaline Phosphatase	U/l	365	311	419	27.00	54.00	AMP optimised to IFCC 37°C
	U/l	358	304	412	27.00	54.00	AMP non-optimised 37°C
ALT (GPT)	U/l	136	109	163	13.50	27.00	Tris buffer without P5P 37°C
	U/l	132	105	159	13.50	27.00	Tris buffer SCE 37°C
Amylase Total	U/l	301	256	346	22.50	45.00	Beckman Synchron AMY7 37°C
AST (GOT)	U/l	135	108	162	13.50	27.00	Tris buffer without P5P 37°C
	U/l	132	106	158	13.00	26.00	Tris buffer SCE 37°C
Bicarbonate	mmol/l	14.1	11.2	17.0	1.45	2.90	Differential rate pH change
	mmol/l	13.5	10.7	16.3	1.40	2.80	Ion selective electrode
Bilirubin Total	µmol/l	89.1	70.4	108	9.35	18.70	Diazo with Sulphanilic Acid
	mg/dl	5.21	4.12	6.30	0.55	1.09	
Calcium	mmol/l	3.00	2.70	3.30	0.15	0.30	Ion selective electrode
	mg/dl	12.0	10.8	13.2	0.60	1.20	
Chloride	mmol/l	120	110	130	5.00	10.00	ISE indirect
Cholesterol	mmol/l	7.34	6.38	8.30	0.48	0.96	Cholesterol Oxidase
	mg/dl	283	246	320	18.50	37.00	
CK Total	U/l	533	437	629	48.00	96.00	Monothioglycerol 37°C


**Beckman DxC600/800®**
**ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)**

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

**Range**

Analyte	unit	Target	low	high	1SD	2SD	methods
CK Total	U/l	508	417	599	45.50	91.00	Creatinine phosphate substrate Start 37°C
Creatinine	μmol/l	382	305	459	38.50	77.00	Alkaline picrate no deproteinization
	mg/dl	4.32	3.45	5.19	0.44	0.87	
	μmol/l	383	307	459	38.00	76.00	Jaffe rate blanked
	mg/dl	4.33	3.47	5.19	0.43	0.86	
	μmol/l	384	307	461	38.50	77.00	IDMS traceable
	mg/dl	4.34	3.47	5.21	0.44	0.87	
gamma-GT	U/l	138	118	158	10.00	20.00	Gamma glutamyl-4-nitroanilide 37°C
Glucose	mmol/l	15.2	12.9	17.5	1.15	2.30	Hexokinase
	mg/dl	274	232	316	21.00	42.00	
	mmol/l	15.0	12.8	17.2	1.10	2.20	Glucose oxidase
	mg/dl	270	231	309	19.50	39.00	
HDL - Cholesterol	mmol/l	2.72	2.32	3.12	0.20	0.40	Direct HDL PPD
	mg/dl	105	89.6	120	7.70	15.40	
	mmol/l	2.77	2.36	3.18	0.21	0.41	HDL - Ultra
	mg/dl	107	91.1	123	7.95	15.90	
Iron	μmol/l	40.1	32.9	47.3	3.60	7.20	Colorimetric without ppt.
	μg/dl	224	184	264	20.00	40.00	
Lactate	mmol/l	5.08	4.16	6.00	0.46	0.92	Colorimetric Lactate Oxidase
	mg/dl	45.8	37.5	54.1	4.15	8.30	
LD (LDH)	U/l	297	252	342	22.50	45.00	L->P 37°C
	U/l	977	830	1124	73.50	147.00	Pyruvate 1.4 mM - Beckman LD-P 37°C
	U/l	294	250	338	22.00	44.00	L->P IFCC 37°C
Lipase	U/l	66	53	79	6.50	13.00	Other Colorimetric 37°C
Magnesium	mmol/l	1.75	1.54	1.96	0.11	0.21	Calmagite
	mg/dl	4.25	3.74	4.76	0.26	0.51	



## Beckman DxC600/800®

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods	
Phosphate Inorganic	mmol/l	2.26	1.92	2.60	0.17	0.34	Phosphomolybdate enzymatic	
	mg/dl	7.01	5.95	8.07	0.53	1.06		
	mmol/l	2.27	1.93	2.61	0.17	0.34	Phosphomolybdate UV	
	mg/dl	7.04	5.98	8.10	0.53	1.06		
Potassium	mmol/l	6.33	5.82	6.84	0.26	0.51	ISE method - indirect	
Protein Total	g/l	46.1	36.9	55.3	4.60	9.20	Biuret reaction end point	
	g/dl	4.61	3.69	5.53	0.46	0.92		
	g/l	45.1	36.1	54.1	4.50	9.00	Biuret reaction kinetic	
	g/dl	4.51	3.61	5.41	0.45	0.90		
Sodium	mmol/l	158	151	165	3.50	7.00	ISE method - indirect	
Triglycerides	mmol/l	2.98	2.51	3.45	0.24	0.47	Lipase/GPO-PAP no correction	
	mg/dl	264	222	306	21.00	42.00		
	mmol/l	2.98	2.50	3.46	0.24	0.48	L/G Kinase EP. no correction	
	mg/dl	264	221	307	21.50	43.00		
Urea	mmol/l	20.1	17.1	23.1	1.50	3.00	Urease end point	
	mg/dl	121	103	139	9.00	18.00		
	mmol/l	20.1	17.1	23.1	1.50	3.00	Urease kinetic	
	mg/dl	121	103	139	9.00	18.00		
	mmol/l	20.1	17.1	23.1	1.50	3.00	BUN	
	mg/dl	56.4	47.9	64.9	4.25	8.50		
	Uric Acid (Urate)	mmol/l	0.54	0.47	0.61	0.04	0.07	Uricase peroxidase no ascorbate oxidase
		mg/dl	9.11	7.91	10.3	0.60	1.20	

## BIOSYSTEMS A15

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Albumin	g/l	30.8	26.2	35.4	2.30	4.60	Bromocresol Green
	g/dl	3.08	2.62	3.54	0.23	0.46	
Alkaline Phosphatase	U/l	334	284	384	25.00	50.00	AMP optimised to IFCC 37°C
	U/l	260	221	299	19.50	39.00	AMP optimised to IFCC 30°C
	U/l	213	181	245	16.00	32.00	AMP optimised to IFCC 25°C
ALT (GPT)	U/l	150	120	180	15.00	30.00	Tris buffer without P5P 37°C
	U/l	111	89	133	11.00	22.00	Tris buffer without P5P 30°C
	U/l	84	68	100	8.00	16.00	Tris buffer without P5P 25°C
AST (GOT)	U/l	155	124	186	15.50	31.00	Tris buffer without P5P 37°C
	U/l	105	84	126	10.50	21.00	Tris buffer without P5P 30°C
	U/l	74	59	89	7.50	15.00	Tris buffer without P5P 25°C
Bilirubin Total	µmol/l	84.7	66.9	103	8.90	17.80	Diazo with Sulphanilic Acid
	mg/dl	4.95	3.91	5.99	0.52	1.04	
Cholesterol	mmol/l	7.32	6.37	8.27	0.48	0.95	Cholesterol Oxidase
	mg/dl	283	246	320	18.50	37.00	
Creatinine	µmol/l	356	285	427	35.50	71.00	Alkaline picrate no deproteinization
	mg/dl	4.02	3.22	4.82	0.40	0.80	
Glucose	mmol/l	15.9	13.5	18.3	1.20	2.40	Glucose oxidase
	mg/dl	287	243	331	22.00	44.00	
Protein Total	g/l	46.4	37.1	55.7	4.65	9.30	Biuret reaction end point
	g/dl	4.64	3.71	5.57	0.47	0.93	

**BIOSYSTEMS A15**

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Triglycerides	mmol/l	2.90	2.44	3.36	0.23	0.46	Lipase/GPO-PAP no correction
	mg/dl	257	216	298	20.50	41.00	
Urea	mmol/l	18.2	15.5	20.9	1.35	2.70	Urease kinetic
	mg/dl	109	93.2	125	7.90	15.80	
	mmol/l	18.2	15.5	20.9	1.35	2.70	BUN
	mg/dl	51.1	43.4	58.8	3.85	7.70	
Uric Acid (Urate)	mmol/l	0.53	0.46	0.60	0.03	0.07	Uricase peroxidase with ascorbate oxidase
	mg/dl	8.94	7.78	10.1	0.58	1.16	

## BIOSYSTEMS A25

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Albumin	g/l	31.4	26.7	36.1	2.35	4.70	Bromocresol Green
	g/dl	3.14	2.67	3.61	0.24	0.47	
ALT (GPT)	U/l	147	118	176	14.50	29.00	Tris buffer without P5P 37°C
	U/l	109	87	131	11.00	22.00	Tris buffer without P5P 30°C
	U/l	83	66	100	8.50	17.00	Tris buffer without P5P 25°C
Bilirubin Total	µmol/l	82.6	65.3	99.9	8.65	17.30	Diazo with Sulphanilic Acid
	mg/dl	4.83	3.82	5.84	0.51	1.01	
Cholesterol	mmol/l	7.20	6.26	8.14	0.47	0.94	Cholesterol Oxidase
	mg/dl	278	242	314	18.00	36.00	
Glucose	mmol/l	15.9	13.5	18.3	1.20	2.40	Glucose oxidase
	mg/dl	287	243	331	22.00	44.00	
Protein Total	g/l	45.5	36.4	54.6	4.55	9.10	Biuret reaction end point
	g/dl	4.55	3.64	5.46	0.46	0.91	
Triglycerides	mmol/l	2.92	2.46	3.38	0.23	0.46	Lipase/GPO-PAP no correction
	mg/dl	258	218	298	20.00	40.00	
Urea	mmol/l	18.6	15.8	21.4	1.40	2.80	Urease kinetic
	mg/dl	112	95.0	129	8.50	17.00	
	mmol/l	18.6	15.8	21.4	1.40	2.80	BUN
	mg/dl	52.2	44.4	60.0	3.90	7.80	
Uric Acid (Urate)	mmol/l	0.56	0.48	0.63	0.04	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.36	8.13	10.6	0.61	1.23	

## Biotechnica/Wiener BT and CB Series

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Albumin	g/l	30.7	26.1	35.3	2.30	4.60	Bromocresol Green
	g/dl	3.07	2.61	3.53	0.23	0.46	
Alkaline Phosphatase	U/l	330	280	380	25.00	50.00	AMP optimised to IFCC 37°C
	U/l	257	218	296	19.50	39.00	AMP optimised to IFCC 30°C
	U/l	211	179	243	16.00	32.00	AMP optimised to IFCC 25°C
ALT (GPT)	U/l	147	118	176	14.50	29.00	Tris buffer without P5P 37°C
	U/l	109	87	131	11.00	22.00	Tris buffer without P5P 30°C
	U/l	83	66	100	8.50	17.00	Tris buffer without P5P 25°C
AST (GOT)	U/l	147	117	177	15.00	30.00	Tris buffer without P5P 37°C
	U/l	99	79	119	10.00	20.00	Tris buffer without P5P 30°C
	U/l	70	56	84	7.00	14.00	Tris buffer without P5P 25°C
Bilirubin Total	µmol/l	80.5	63.6	97.4	8.45	16.90	Dichlorophenyl Diazonium (DPD)
	mg/dl	4.71	3.72	5.70	0.50	0.99	
Calcium	mmol/l	3.06	2.75	3.37	0.16	0.31	Arsenazo III
	mg/dl	12.3	11.0	13.6	0.65	1.30	
Cholesterol	mmol/l	7.14	6.22	8.06	0.46	0.92	Cholesterol Oxidase
	mg/dl	276	240	312	18.00	36.00	
CK Total	U/l	503	412	594	45.50	91.00	CK-NAC (IFCC) 37°C
	U/l	315	258	372	28.50	57.00	CK-NAC (IFCC) 30°C
	U/l	214	175	253	19.50	39.00	CK-NAC (IFCC) 25°C
Creatinine	µmol/l	343	274	412	34.50	69.00	Alkaline picrate no deproteinization
	mg/dl	3.88	3.10	4.66	0.39	0.78	

## Biotechnica/Wiener BT and CB Series

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Creatinine	µmol/l	384	307	461	38.50	77.00	Creatinine PAP method
	mg/dl	4.34	3.47	5.21	0.44	0.87	
	µmol/l	366	293	439	36.50	73.00	Jaffe rate blanked
	mg/dl	4.14	3.31	4.97	0.42	0.83	
gamma-GT	U/l	161	137	185	12.00	24.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	127	108	146	9.50	19.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30°C
	U/l	99	85	113	7.00	14.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25°C
Glucose	mmol/l	15.0	12.7	17.3	1.15	2.30	Glucose oxidase
	mg/dl	270	229	311	20.50	41.00	
HDL - Cholesterol	mmol/l	2.40	2.04	2.76	0.18	0.36	Direct HDL Immunoseparation
	mg/dl	92.6	78.7	107	6.95	13.90	
Phosphate Inorganic	mmol/l	2.32	1.97	2.67	0.18	0.35	Phosphomolybdate UV
	mg/dl	7.19	6.11	8.27	0.54	1.08	
Triglycerides	mmol/l	2.71	2.28	3.14	0.22	0.43	Lipase/GPO-PAP no correction
	mg/dl	240	202	278	19.00	38.00	
Urea	mmol/l	19.3	16.4	22.2	1.45	2.90	Urease kinetic
	mg/dl	116	98.6	133	8.70	17.40	
	mmol/l	19.3	16.4	22.2	1.45	2.90	BUN
	mg/dl	54.2	46.1	62.3	4.05	8.10	
Uric Acid (Urate)	mmol/l	0.54	0.47	0.61	0.04	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.11	7.91	10.3	0.60	1.20	

## COBAS INTEGRA®

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Albumin	g/l	32.4	27.6	37.2	2.40	4.80	Bromocresol Green
	g/dl	3.24	2.76	3.72	0.24	0.48	
	g/l	32.5	27.6	37.4	2.45	4.90	Bromocresol Purple
	g/dl	3.25	2.76	3.74	0.25	0.49	
	g/l	28.4	24.2	32.6	2.10	4.20	Turbidimetric Assays
	g/dl	2.84	2.42	3.26	0.21	0.42	
Alkaline Phosphatase	U/l	294	250	338	22.00	44.00	Roche Integra AMP buffer 37°C
	U/l	229	195	263	17.00	34.00	Roche Integra AMP buffer 30°C
	U/l	188	160	216	14.00	28.00	Roche Integra AMP buffer 25°C
ALT (GPT)	U/l	138	110	166	14.00	28.00	Tris buffer without P5P 37°C
	U/l	102	81	123	10.50	21.00	Tris buffer without P5P 30°C
	U/l	78	62	94	8.00	16.00	Tris buffer without P5P 25°C
Amylase Pancreatic	U/l	262	223	301	19.50	39.00	Roche EPS Liquid 37°C
Amylase Total	U/l	288	245	331	21.50	43.00	Roche Integra 2-chloro-pNPG7 37°C
	U/l	287	244	330	21.50	43.00	Roche liquid stable pNPG7 37°C
AST (GOT)	U/l	141	113	169	14.00	28.00	Tris buffer without P5P 37°C
	U/l	95	76	114	9.50	19.00	Tris buffer without P5P 30°C
	U/l	67	54	80	6.50	13.00	Tris buffer without P5P 25°C
Bicarbonate	mmol/l	14.9	11.8	18.0	1.55	3.10	Enzymatic
Bilirubin Direct	µmol/l	29.3	23.2	35.4	3.05	6.10	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.71	1.36	2.06	0.18	0.35	

## COBAS INTEGRA®

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Bilirubin Direct	µmol/l	29.9	23.6	36.2	3.15	6.30	Diazo with Sulphanilic Acid
	mg/dl	1.75	1.38	2.12	0.19	0.37	
	µmol/l	29.5	23.3	35.7	3.10	6.20	Roche JG factored
	mg/dl	1.73	1.36	2.10	0.19	0.37	
Bilirubin Total	µmol/l	79.7	62.9	96.5	8.40	16.80	Diazo with Sulphanilic Acid
	mg/dl	4.66	3.68	5.64	0.49	0.98	
	µmol/l	78.7	62.2	95.2	8.25	16.50	Dichlorophenyl Diazonium (DPD)
	mg/dl	4.60	3.64	5.56	0.48	0.96	
	µmol/l	79.0	62.4	95.6	8.30	16.60	Diazonium ion
mg/dl	4.62	3.65	5.59	0.49	0.97		
Calcium	mmol/l	3.11	2.80	3.42	0.16	0.31	Cresolphthalein complexone
	mg/dl	12.5	11.2	13.8	0.65	1.30	
	mmol/l	3.10	2.79	3.41	0.16	0.31	NM-BAPTA
	mg/dl	12.4	11.2	13.6	0.60	1.20	
Chloride	mmol/l	121	111	131	5.00	10.00	ISE indirect
Cholesterol	mmol/l	7.01	6.10	7.92	0.46	0.91	Cholesterol Oxidase
	mg/dl	271	235	307	18.00	36.00	
CK Total	U/l	484	397	571	43.50	87.00	CK-NAC (IFCC) 37°C
	U/l	303	249	357	27.00	54.00	CK-NAC (IFCC) 30°C
	U/l	206	169	243	18.50	37.00	CK-NAC (IFCC) 25°C
Creatinine	µmol/l	380	304	456	38.00	76.00	Alkaline picrate no deproteinization
	mg/dl	4.29	3.44	5.14	0.43	0.85	
	µmol/l	380	304	456	38.00	76.00	Roche Creatinine Plus
	mg/dl	4.29	3.44	5.14	0.43	0.85	
	µmol/l	375	300	450	37.50	75.00	Jaffe rate blanked comp. (-26 µmol/l)
	mg/dl	4.24	3.39	5.09	0.43	0.85	



## COBAS INTEGRA®

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Creatinine	µmol/l	376	301	451	37.50	75.00	Jaffe rate blanked compensated (-18 µmol/l)
	mg/dl	4.25	3.40	5.10	0.43	0.85	
gamma-GT	U/l	158	135	181	11.50	23.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C
	U/l	125	106	144	9.50	19.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 30°C
	U/l	97	83	111	7.00	14.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 25°C
	U/l	173	147	199	13.00	26.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	136	116	156	10.00	20.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30°C
	U/l	107	91	123	8.00	16.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25°C
Glucose	mmol/l	15.7	13.4	18.0	1.15	2.30	Hexokinase
	mg/dl	283	241	325	21.00	42.00	
HDL - Cholesterol	mmol/l	3.48	2.96	4.00	0.26	0.52	Direct HDL PEGME
	mg/dl	134	114	154	10.00	20.00	
	mmol/l	3.59	3.05	4.13	0.27	0.54	Direct HDL Roche 3rd generation
	mg/dl	139	118	160	10.50	21.00	
	mmol/l	3.58	3.05	4.11	0.27	0.53	Direct HDL Roche 4th Generation
	mg/dl	138	118	158	10.00	20.00	
Iron	µmol/l	39.8	32.7	46.9	3.55	7.10	Colorimetric with ppt.
	µg/dl	222	183	261	19.50	39.00	
	µmol/l	39.5	32.4	46.6	3.55	7.10	Colorimetric without ppt.
	µg/dl	221	181	261	20.00	40.00	
Lactate	mmol/l	5.51	4.52	6.50	0.50	0.99	Colorimetric Lactate Oxidase
	mg/dl	49.6	40.7	58.5	4.45	8.90	
LD (LDH)	U/l	679	577	781	51.00	102.00	P->L German methods 37°C
	U/l	490	417	563	36.50	73.00	P->L German methods 30°C
	U/l	344	293	395	25.50	51.00	P->L German methods 25°C

## COBAS INTEGRA®

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
LD (LDH)	U/l	379	323	435	28.00	56.00	L->P IFCC 37°C
	U/l	274	233	315	20.50	41.00	L->P IFCC 30°C
	U/l	192	164	220	14.00	28.00	L->P IFCC 25°C
Lipase	U/l	56	45	67	5.50	11.00	Roche Colorimetric 37°C
Lithium	mmol/l	2.09	1.84	2.34	0.13	0.25	Ion selective electrode
	mg/dl	1.45	1.28	1.62	0.09	0.17	
Magnesium	mmol/l	1.80	1.58	2.02	0.11	0.22	Chlorphosphonazo III
	mg/dl	4.37	3.84	4.90	0.27	0.53	
Phosphate Inorganic	mmol/l	2.29	1.95	2.63	0.17	0.34	Phosphomolybdate enzymatic
	mg/dl	7.10	6.05	8.15	0.53	1.05	
	mmol/l	2.30	1.95	2.65	0.18	0.35	Phosphomolybdate UV
	mg/dl	7.13	6.05	8.21	0.54	1.08	
Potassium	mmol/l	6.38	5.87	6.89	0.26	0.51	ISE method - indirect
Protein Total	g/l	43.4	34.7	52.1	4.35	8.70	Biuret reaction end point
	g/dl	4.34	3.47	5.21	0.44	0.87	
	g/l	45.0	36.0	54.0	4.50	9.00	Biuret reaction kinetic
	g/dl	4.50	3.60	5.40	0.45	0.90	
Sodium	mmol/l	159	151	167	4.00	8.00	ISE method - indirect
TIBC	µmol/l	41.2	32.6	49.8	4.30	8.60	FE+UIBC(saturation with iron)
	µg/dl	230	182	278	24.00	48.00	
Triglycerides	mmol/l	2.96	2.49	3.43	0.24	0.47	Lipase/GPO-PAP no correction
	mg/dl	262	220	304	21.00	42.00	
Urea	mmol/l	19.2	16.3	22.1	1.45	2.90	Urease kinetic
	mg/dl	115	98.0	132	8.50	17.00	

**COBAS INTEGRA®****ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)**

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

**Range**

Analyte	unit	Target	low	high	1SD	2SD	methods
Urea	mmol/l	19.2	16.3	22.1	1.45	2.90	BUN
	mg/dl	53.9	45.8	62.0	4.05	8.10	
Uric Acid (Urate)	mmol/l	0.56	0.49	0.63	0.04	0.07	Uricase peroxidase with ascorbate oxidase
	mg/dl	9.42	8.20	10.6	0.61	1.22	
	mmol/l	0.56	0.49	0.63	0.04	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.41	8.18	10.6	0.62	1.23	
	mmol/l	0.56	0.49	0.63	0.04	0.07	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	9.42	8.20	10.6	0.61	1.22	

## Elitech/Vitalab Selectra Series

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Albumin	g/l	34.2	29.1	39.3	2.55	5.10	Bromocresol Green
	g/dl	3.42	2.91	3.93	0.26	0.51	
ALT (GPT)	U/l	150	120	180	15.00	30.00	Tris buffer without P5P 37°C
AST (GOT)	U/l	144	115	173	14.50	29.00	Tris buffer without P5P 37°C
Bilirubin Total	µmol/l	86.8	68.6	105	9.10	18.20	Diazo with Sulphanilic Acid
	mg/dl	5.08	4.01	6.15	0.54	1.07	
Calcium	mmol/l	3.05	2.74	3.36	0.16	0.31	Arsenazo III
	mg/dl	12.2	11.0	13.4	0.60	1.20	
Cholesterol	mmol/l	7.22	6.28	8.16	0.47	0.94	Cholesterol Oxidase
	mg/dl	279	242	316	18.50	37.00	
Creatinine	µmol/l	358	286	430	36.00	72.00	Alkaline picrate no deproteinization
	mg/dl	4.05	3.23	4.87	0.41	0.82	
Glucose	mmol/l	15.8	13.4	18.2	1.20	2.40	Glucose oxidase
	mg/dl	285	241	329	22.00	44.00	
LD (LDH)	U/l	374	318	430	28.00	56.00	L->P IFCC 37°C
Phosphate Inorganic	mmol/l	2.10	1.78	2.42	0.16	0.32	Phosphomolybdate UV
	mg/dl	6.51	5.52	7.50	0.50	0.99	
Protein Total	g/l	47.1	37.7	56.5	4.70	9.40	Biuret reaction end point
	g/dl	4.71	3.77	5.65	0.47	0.94	
Triglycerides	mmol/l	2.87	2.41	3.33	0.23	0.46	Lipase/GPO-PAP no correction
	mg/dl	254	213	295	20.50	41.00	

**Elitech/Vitalab Selectra Series**

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

**Range**

Analyte	unit	Target	low	high	1SD	2SD	methods
Urea	mmol/l	19.0	16.1	21.9	1.45	2.90	Urease kinetic
	mg/dl	114	96.8	131	8.60	17.20	
	mmol/l	19.0	16.2	21.8	1.40	2.80	BUN
	mg/dl	53.3	45.3	61.3	4.00	8.00	
Uric Acid (Urate)	mmol/l	0.55	0.48	0.62	0.04	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.27	8.08	10.5	0.60	1.19	

## HITACHI SERIES®

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Acid Phosphatase (Total)	U/l	31.5	21.1	41.9	5.20	10.40	1-Naphthyl Phosphate substrate Kinetic 37°C
Albumin	g/l	32.5	27.6	37.4	2.45	4.90	Bromocresol Green
	g/dl	3.25	2.76	3.74	0.25	0.49	
Alkaline Phosphatase	U/l	286	243	329	21.50	43.00	Roche Integra AMP buffer 37°C
	U/l	223	189	257	17.00	34.00	Roche Integra AMP buffer 30°C
	U/l	183	155	211	14.00	28.00	Roche Integra AMP buffer 25°C
	U/l	374	318	430	28.00	56.00	Radox AMP 37°C
	U/l	291	248	334	21.50	43.00	Radox AMP 30°C
	U/l	239	203	275	18.00	36.00	Radox AMP 25°C
ALT (GPT)	U/l	139	111	167	14.00	28.00	Tris buffer without P5P 37°C
	U/l	103	82	124	10.50	21.00	Tris buffer without P5P 30°C
	U/l	78	62	94	8.00	16.00	Tris buffer without P5P 25°C
Amylase Pancreatic	U/l	301	256	346	22.50	45.00	Radox Liquid Ethylidene pNPG7 37°C
Amylase Total	U/l	278	236	320	21.00	42.00	Roche liquid stable pNPG7 37°C
	U/l	311	264	358	23.50	47.00	Radox Liquid Ethylidene pNPG7 37°C
AST (GOT)	U/l	141	113	169	14.00	28.00	Tris buffer without P5P 37°C
	U/l	95	76	114	9.50	19.00	Tris buffer without P5P 30°C
	U/l	67	54	80	6.50	13.00	Tris buffer without P5P 25°C
Bile Acids	µmol/l	46.7	37.4	56.0	4.65	9.30	5th Generation Colorimetric
Calcium	mmol/l	3.15	2.84	3.46	0.16	0.31	Cresolphthalein complexone
	mg/dl	12.6	11.4	13.8	0.60	1.20	

## HITACHI SERIES®

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Calcium	mmol/l	3.12	2.81	3.43	0.16	0.31	NM-BAPTA
	mg/dl	12.5	11.3	13.7	0.60	1.20	
Chloride	mmol/l	118	109	127	4.50	9.00	ISE indirect
Cholesterol	mmol/l	7.10	6.18	8.02	0.46	0.92	Cholesterol Oxidase
	mg/dl	274	239	309	17.50	35.00	
gamma-GT	U/l	176	149	203	13.50	27.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	139	117	161	11.00	22.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30°C
	U/l	109	92	126	8.50	17.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25°C
	U/l	186	158	214	14.00	28.00	Randox Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C
	U/l	147	125	169	11.00	22.00	Randox Gamma glutamyl.-3-carboxy-4-nitroanilide 30°C
	U/l	115	97	133	9.00	18.00	Randox Gamma glutamyl.-3-carboxy-4-nitroanilide 25°C
Glucose	mmol/l	15.7	13.3	18.1	1.20	2.40	Hexokinase
	mg/dl	283	240	326	21.50	43.00	
Magnesium	mmol/l	1.78	1.57	1.99	0.11	0.21	Xylidyl Blue
	mg/dl	4.33	3.82	4.84	0.26	0.51	
Phosphate Inorganic	mmol/l	2.22	1.89	2.55	0.17	0.33	Phosphomolybdate UV
	mg/dl	6.88	5.86	7.90	0.51	1.02	
Potassium	mmol/l	6.42	5.90	6.94	0.26	0.52	ISE method - indirect
Protein Total	g/l	46.1	36.9	55.3	4.60	9.20	Biuret reaction end point
	g/dl	4.61	3.69	5.53	0.46	0.92	
Sodium	mmol/l	160	152	168	4.00	8.00	ISE method - indirect
Triglycerides	mmol/l	2.99	2.51	3.47	0.24	0.48	Lipase/GPO-PAP no correction
	mg/dl	265	222	308	21.50	43.00	
Urea	mmol/l	19.3	16.4	22.2	1.45	2.90	Urease kinetic
	mg/dl	116	98.6	133	8.70	17.40	

**HITACHI SERIES®**

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

**Range**

Analyte	unit	Target	low	high	1SD	2SD	methods
Urea	mmol/l	19.3	16.4	22.2	1.45	2.90	BUN
	mg/dl	54.2	46.1	62.3	4.05	8.10	



## Konelab 20/30/60®/Thermo Scientific Indiko Plus

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Albumin	g/l	30.5	25.9	35.1	2.30	4.60	Bromocresol Green
	g/dl	3.05	2.59	3.51	0.23	0.46	
Alkaline Phosphatase	U/l	518	440	596	39.00	78.00	Diethanolamine buffer DEA 37°C
	U/l	404	343	465	30.50	61.00	Diethanolamine buffer DEA 30°C
	U/l	331	281	381	25.00	50.00	Diethanolamine buffer DEA 25°C
	U/l	325	276	374	24.50	49.00	AMP optimised to IFCC 37°C
	U/l	253	215	291	19.00	38.00	AMP optimised to IFCC 30°C
	U/l	208	176	240	16.00	32.00	AMP optimised to IFCC 25°C
ALT (GPT)	U/l	157	126	188	15.50	31.00	Tris buffer without P5P 37°C
	U/l	116	93	139	11.50	23.00	Tris buffer without P5P 30°C
	U/l	88	71	105	8.50	17.00	Tris buffer without P5P 25°C
AST (GOT)	U/l	161	129	193	16.00	32.00	Tris buffer without P5P 37°C
	U/l	109	87	131	11.00	22.00	Tris buffer without P5P 30°C
	U/l	77	61	93	8.00	16.00	Tris buffer without P5P 25°C
Bile Acids	µmol/l	47.6	38.1	57.1	4.75	9.50	Enzymatic Colorimetric
Bilirubin Direct	µmol/l	25.6	20.2	31.0	2.70	5.40	Diazo with Sulphanilic Acid
	mg/dl	1.50	1.18	1.82	0.16	0.32	
Bilirubin Total	µmol/l	87.1	68.8	105	9.15	18.30	Nitrobenzenediazonium salt
	mg/dl	5.10	4.02	6.18	0.54	1.08	
Calcium	mmol/l	3.24	2.92	3.56	0.16	0.32	Arsenazo III
	mg/dl	13.0	11.7	14.3	0.65	1.30	

## Konelab 20/30/60®/Thermo Scientific Indiko Plus

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Chloride	mmol/l	120	110	130	5.00	10.00	ISE direct
Cholesterol	mmol/l	7.15	6.22	8.08	0.47	0.93	Cholesterol Oxidase
	mg/dl	276	240	312	18.00	36.00	
CK Total	U/l	519	425	613	47.00	94.00	CK-NAC (IFCC) 37°C
	U/l	325	266	384	29.50	59.00	CK-NAC (IFCC) 30°C
	U/l	221	181	261	20.00	40.00	CK-NAC (IFCC) 25°C
Creatinine	µmol/l	382	306	458	38.00	76.00	Alkaline picrate no deproteinization
	mg/dl	4.32	3.46	5.18	0.43	0.86	
	µmol/l	394	315	473	39.50	79.00	Creatinine PAP method
	mg/dl	4.45	3.56	5.34	0.45	0.89	
gamma-GT	U/l	170	145	195	12.50	25.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	134	114	154	10.00	20.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30°C
	U/l	105	89	121	8.00	16.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25°C
Glucose	mmol/l	15.5	13.2	17.8	1.15	2.30	Hexokinase
	mg/dl	279	238	320	20.50	41.00	
	mmol/l	15.6	13.3	17.9	1.15	2.30	Glucose oxidase
	mg/dl	281	240	322	20.50	41.00	
HDL - Cholesterol	mmol/l	2.89	2.46	3.32	0.22	0.43	Direct HDL PEGME
	mg/dl	112	95.0	129	8.50	17.00	
	mmol/l	2.71	2.30	3.12	0.21	0.41	Direct Clearance Method
	mg/dl	105	88.8	121	8.10	16.20	
Iron	µmol/l	38.0	31.1	44.9	3.45	6.90	Colorimetric without ppt.
	µg/dl	212	174	250	19.00	38.00	
LD (LDH)	U/l	738	627	849	55.50	111.00	P->L SFBC 37°C
	U/l	533	453	613	40.00	80.00	P->L SFBC 30°C
	U/l	374	318	430	28.00	56.00	P->L SFBC 25°C

## Konelab 20/30/60®/Thermo Scientific Indiko Plus

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Magnesium	mmol/l	1.72	1.51	1.93	0.11	0.21	Xylidyl Blue
	mg/dl	4.18	3.67	4.69	0.26	0.51	
Phosphate Inorganic	mmol/l	2.26	1.92	2.60	0.17	0.34	Phosphomolybdate UV
	mg/dl	7.01	5.95	8.07	0.53	1.06	
Potassium	mmol/l	6.25	5.75	6.75	0.25	0.50	ISE method - direct
Protein Total	g/l	46.3	37.1	55.5	4.60	9.20	Biuret reaction end point
	g/dl	4.63	3.71	5.55	0.46	0.92	
Sodium	mmol/l	156	149	163	3.50	7.00	ISE method - direct
Triglycerides	mmol/l	3.00	2.52	3.48	0.24	0.48	Lipase/GPO-PAP no correction
	mg/dl	266	223	309	21.50	43.00	
Urea	mmol/l	18.6	15.8	21.4	1.40	2.80	Urease kinetic
	mg/dl	112	95.0	129	8.50	17.00	
	mmol/l	18.6	15.8	21.4	1.40	2.80	BUN
	mg/dl	52.2	44.4	60.0	3.90	7.80	
Uric Acid (Urate)	mmol/l	0.57	0.49	0.64	0.04	0.07	Uricase peroxidase with ascorbate oxidase
	mg/dl	9.49	8.27	10.7	0.61	1.22	
	mmol/l	0.56	0.48	0.63	0.04	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.34	8.11	10.6	0.62	1.23	
	mmol/l	0.57	0.50	0.64	0.04	0.07	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	9.58	8.33	10.8	0.63	1.25	

## MEAN OF ALL INSTRUMENTS

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

Range

Analyte	unit	Target	low	high	1SD	2SD	methods
alpha-HBDH	U/l	410	324	496	43.00	86.00	Oxobutyrate < 10 mmol/l 37°C
	U/l	310	245	375	32.50	65.00	Oxobutyrate < 10 mmol/l 30°C
	U/l	232	183	281	24.50	49.00	Oxobutyrate < 10 mmol/l 25°C
Acid Phosphatase (Total)	U/l	31.5	21.1	41.9	5.20	10.40	1-Naphthyl Phosphate substrate Kinetic 37°C
Albumin	g/l	31.5	26.7	36.3	2.40	4.80	Bromocresol Green
	g/dl	3.15	2.67	3.63	0.24	0.48	
	g/l	30.3	25.8	34.8	2.25	4.50	Bromocresol Purple
	g/dl	3.03	2.58	3.48	0.23	0.45	
	g/l	29.3	24.9	33.7	2.20	4.40	Ortho Vitros Microslide Systems
	g/dl	2.93	2.49	3.37	0.22	0.44	
	g/l	28.6	24.3	32.9	2.15	4.30	Turbidimetric Assays
Alkaline Phosphatase	g/dl	2.86	2.43	3.29	0.22	0.43	
	U/l	259	220	298	19.50	39.00	Ortho Vitros Microslide Systems 37°C
	U/l	506	430	582	38.00	76.00	Diethanolamine buffer DEA 37°C
	U/l	394	335	453	29.50	59.00	Diethanolamine buffer DEA 30°C
	U/l	323	275	371	24.00	48.00	Diethanolamine buffer DEA 25°C
	U/l	354	301	407	26.50	53.00	AMP optimised to IFCC 37°C
	U/l	276	234	318	21.00	42.00	AMP optimised to IFCC 30°C
	U/l	226	192	260	17.00	34.00	AMP optimised to IFCC 25°C
	U/l	341	290	392	25.50	51.00	AMP non-optimised 37°C
U/l	266	226	306	20.00	40.00	AMP non-optimised 30°C	
U/l	218	185	251	16.50	33.00	AMP non-optimised 25°C	

## MEAN OF ALL INSTRUMENTS

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
ALT (GPT)	U/l	156	125	187	15.50	31.00	Ortho Vitros Microslide Systems 37°C
	U/l	150	120	180	15.00	30.00	Tris buffer with P5P 37°C
	U/l	111	89	133	11.00	22.00	Tris buffer with P5P 30°C
	U/l	84	68	100	8.00	16.00	Tris buffer with P5P 25°C
	U/l	141	113	169	14.00	28.00	Tris buffer without P5P 37°C
	U/l	104	84	124	10.00	20.00	Tris buffer without P5P 30°C
	U/l	79	64	94	7.50	15.00	Tris buffer without P5P 25°C
	U/l	132	105	159	13.50	27.00	Tris buffer SCE 37°C
	U/l	98	78	118	10.00	20.00	Tris buffer SCE 30°C
	U/l	74	59	89	7.50	15.00	Tris buffer SCE 25°C
Amylase Pancreatic	U/l	258	219	297	19.50	39.00	Immunoinhibition EPS substrate 37°C
	U/l	255	217	293	19.00	38.00	Roche EPS Liquid 37°C
	U/l	301	256	346	22.50	45.00	Randox Liquid Ethylidene pNPG7 37°C
Amylase Total	U/l	305	260	350	22.50	45.00	pNP Maltotriose substrates 37°C
	U/l	294	250	338	22.00	44.00	Siemens - blocked pNPG7 37°C
	U/l	238	202	274	18.00	36.00	Randox Lyo. Ethylidene pNPG7 37°C
	U/l	311	264	358	23.50	47.00	Randox Liquid Ethylidene pNPG7 37°C
	U/l	275	234	316	20.50	41.00	BM/Roche Colorimetric pNPG7 37°C
	U/l	267	227	307	20.00	40.00	Saccharogenic 37°C
	U/l	284	241	327	21.50	43.00	Roche Integra 2-chloro-pNPG7 37°C
	U/l	187	159	215	14.00	28.00	Ortho Vitros Microslide Systems 37°C
	U/l	277	236	318	20.50	41.00	Roche liquid stable pNPG7 37°C
	U/l	348	296	400	26.00	52.00	Siemens 2-chloro-pNPG3 37°C
	U/l	295	251	339	22.00	44.00	Beckman Coulter - blocked pNPG7 37°C

## MEAN OF ALL INSTRUMENTS

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Amylase Total	U/l	301	256	346	22.50	45.00	Beckman Synchron AMY7 37°C
	U/l	326	277	375	24.50	49.00	Abbott Architect Non-IFCC Cal. 37°C
	U/l	362	308	416	27.00	54.00	Abbott Architect IFCC Cal. 37°C
	U/l	291	247	335	22.00	44.00	Beckman CNPG3 (Extinction Coeff) 37°C
Apolipoprotein A-1	g/l	1.16	0.95	1.37	0.10	0.21	Immunoturbidimetric
	mg/dl	116	95.1	137	10.45	20.90	
Apolipoprotein B	g/l	0.54	0.44	0.63	0.05	0.10	Immunoturbidimetric
	mg/dl	53.7	44.0	63.4	4.85	9.70	
AST (GOT)	U/l	188	151	225	18.50	37.00	Ortho Vitros Microslide visible slide 37°C
	U/l	189	151	227	19.00	38.00	Tris buffer with P5P 37°C
	U/l	128	102	154	13.00	26.00	Tris buffer with P5P 30°C
	U/l	90	72	108	9.00	18.00	Tris buffer with P5P 25°C
	U/l	142	114	170	14.00	28.00	Tris buffer without P5P 37°C
	U/l	96	77	115	9.50	19.00	Tris buffer without P5P 30°C
	U/l	68	54	82	7.00	14.00	Tris buffer without P5P 25°C
	U/l	133	107	159	13.00	26.00	Tris buffer SCE 37°C
	U/l	90	72	108	9.00	18.00	Tris buffer SCE 30°C
Bicarbonate	mmol/l	14.9	11.8	18.0	1.55	3.10	Colorimetric
	mmol/l	17.1	13.6	20.6	1.75	3.50	Ortho Vitros Microslide Systems
	mmol/l	14.2	11.3	17.1	1.45	2.90	Differential rate pH change
	mmol/l	15.0	11.9	18.1	1.55	3.10	Enzymatic
	mmol/l	13.9	11.0	16.8	1.45	2.90	Ion selective electrode
Bile Acids	µmol/l	49.6	39.7	59.5	4.95	9.90	4th Generation Colorimetric
	µmol/l	46.7	37.4	56.0	4.65	9.30	5th Generation Colorimetric

## MEAN OF ALL INSTRUMENTS

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Bilirubin Direct	µmol/l	27.9	22.0	33.8	2.95	5.90	Diazo with Sulphanilic Acid
	mg/dl	1.63	1.29	1.97	0.17	0.34	
	µmol/l	26.5	20.9	32.1	2.80	5.60	Diazo with Dichloroaniline (DCA)
	mg/dl	1.55	1.22	1.88	0.17	0.33	
	µmol/l	30.0	23.7	36.3	3.15	6.30	Oxidation to Biliverdin/Vanadate
	mg/dl	1.76	1.39	2.13	0.19	0.37	
	µmol/l	30.0	23.7	36.3	3.15	6.30	Modified Jendrassik
	mg/dl	1.76	1.39	2.13	0.19	0.37	
Bilirubin Total	µmol/l	80.5	63.6	97.4	8.45	16.90	Vitros 250/500/700/950 Total Bilirubin
	mg/dl	4.71	3.72	5.70	0.50	0.99	
	µmol/l	91.0	71.9	110	9.55	19.10	Diazo with Dichloroaniline (DCA)
	mg/dl	5.32	4.21	6.43	0.56	1.11	
	µmol/l	86.7	68.5	105	9.10	18.20	Diazo with Sulphanilic Acid
	mg/dl	5.07	4.01	6.13	0.53	1.06	
	µmol/l	81.6	64.5	98.7	8.55	17.10	Dichlorophenyl Diazonium (DPD)
	mg/dl	4.77	3.77	5.77	0.50	1.00	
	µmol/l	87.1	68.8	105	9.15	18.30	Nitrobenzenediazonium salt
	mg/dl	5.10	4.02	6.18	0.54	1.08	
	µmol/l	83.9	66.2	102	8.85	17.70	Diazonium ion
	mg/dl	4.91	3.87	5.95	0.52	1.04	
	µmol/l	98.2	77.6	119	10.30	20.60	Oxidation to Biliverdin/Vanadate
	mg/dl	5.74	4.54	6.94	0.60	1.20	
µmol/l	96.9	76.6	117	10.15	20.30	Modified Jendrassik	
mg/dl	5.67	4.48	6.86	0.60	1.19		
Calcium	mmol/l	3.10	2.79	3.41	0.16	0.31	Cresolphthalein complexone
	mg/dl	12.4	11.2	13.6	0.60	1.20	

## MEAN OF ALL INSTRUMENTS

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

Analyte	unit	Target	Range		1SD	2SD	methods
			low	high			
Calcium	mmol/l	3.12	2.80	3.44	0.16	0.32	Ortho Vitros Microslide Systems
	mg/dl	12.5	11.2	13.8	0.65	1.30	
	mmol/l	3.00	2.70	3.30	0.15	0.30	Ion selective electrode
	mg/dl	12.0	10.8	13.2	0.60	1.20	
	mmol/l	3.10	2.79	3.41	0.16	0.31	Arsenazo III
	mg/dl	12.4	11.2	13.6	0.60	1.20	
	mmol/l	3.11	2.79	3.43	0.16	0.32	NM-BAPTA
	mg/dl	12.5	11.2	13.8	0.65	1.30	
mmol/l	1.17	1.05	1.29	0.06	0.12	Ionised calcium	
mg/dl	4.69	4.21	5.17	0.24	0.48		
Chloride	mmol/l	118	109	127	4.50	9.00	Colorimetric
	mmol/l	121	111	131	5.00	10.00	Ortho Vitros Microslide Systems
	mmol/l	119	110	128	4.50	9.00	ISE indirect
	mmol/l	119	109	129	5.00	10.00	ISE direct
Cholesterol	mmol/l	6.74	5.86	7.62	0.44	0.88	Ortho Vitros Microslide Systems
	mg/dl	260	226	294	17.00	34.00	
	mmol/l	7.11	6.19	8.03	0.46	0.92	Cholesterol Oxidase
mg/dl	274	239	309	17.50	35.00		
Cholinesterase	U/l	4967	3974	5960	496.50	993.00	Colorimetric Butyrylthiocholine 37°C
CK Total	U/l	420	345	495	37.50	75.00	Ortho Vitros Microslide Systems 37°C
	U/l	513	421	605	46.00	92.00	CK-NAC serum start (DGKC) 37°C
	U/l	321	264	378	28.50	57.00	CK-NAC serum start (DGKC) 30°C
	U/l	218	179	257	19.50	39.00	CK-NAC serum start (DGKC) 25°C
	U/l	491	403	579	44.00	88.00	CK-NAC substrate start (DGKC) 37°C
	U/l	307	252	362	27.50	55.00	CK-NAC substrate start (DGKC) 30°C
	U/l	209	171	247	19.00	38.00	CK-NAC substrate start (DGKC) 25°C



## MEAN OF ALL INSTRUMENTS

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

Range

Analyte	unit	Target	low	high	1SD	2SD	methods
CK Total	U/l	494	405	583	44.50	89.00	CK-NAC (IFCC) 37°C
	U/l	309	254	364	27.50	55.00	CK-NAC (IFCC) 30°C
	U/l	210	172	248	19.00	38.00	CK-NAC (IFCC) 25°C
	U/l	533	437	629	48.00	96.00	Monothioglycerol 37°C
	U/l	334	274	394	30.00	60.00	Monothioglycerol 30°C
	U/l	227	186	268	20.50	41.00	Monothioglycerol 25°C
Copper	µmol/l	27.6	22.1	33.1	2.75	5.50	Atomic absorption
	µg/dl	176	141	211	17.50	35.00	
	µmol/l	26.5	21.2	31.8	2.65	5.30	Colorimetric
	µg/dl	169	135	203	17.00	34.00	
Cortisol	nmol/l	1073	805	1341	134.00	268.00	Roche Cobas E411
	µg/dl	38.6	29.0	48.2	4.80	9.60	
Creatinine	µmol/l	369	295	443	37.00	74.00	Alkaline picrate with deproteinization
	mg/dl	4.17	3.33	5.01	0.42	0.84	
	µmol/l	373	299	447	37.00	74.00	Alkaline picrate no deproteinization
	mg/dl	4.21	3.38	5.04	0.42	0.83	
	µmol/l	387	309	465	39.00	78.00	Enzymatic UV method
	mg/dl	4.37	3.49	5.25	0.44	0.88	
	µmol/l	390	312	468	39.00	78.00	Creatinine PAP method
	mg/dl	4.41	3.53	5.29	0.44	0.88	
	µmol/l	379	303	455	38.00	76.00	Jaffe rate blanked
	mg/dl	4.28	3.42	5.14	0.43	0.86	
µmol/l	385	308	462	38.50	77.00	Jaffe rate blanked comp. (-26 µmol/l)	
mg/dl	4.35	3.48	5.22	0.44	0.87		

## MEAN OF ALL INSTRUMENTS

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

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Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Creatinine	µmol/l	375	300	450	37.50	75.00	Jaffe rate blanked compensated (-18 µmol/l)
	mg/dl	4.24	3.39	5.09	0.43	0.85	
	µmol/l	391	313	469	39.00	78.00	Vitros IDMS Traceable
	mg/dl	4.42	3.54	5.30	0.44	0.88	
	µmol/l	382	305	459	38.50	77.00	IDMS traceable
	mg/dl	4.32	3.45	5.19	0.44	0.87	
D-3-Hydroxybutyrate	mmol/l	1.21	1.03	1.39	0.09	0.18	Tris buffer 100mmol pH 8.5
Digoxin	nmol/l	4.03	3.22	4.84	0.41	0.81	Immunoturbidimetric
	ng/ml	3.15	2.51	3.79	0.32	0.64	
Folate	nmol/l	14.5	11.0	18.0	1.75	3.50	Roche Cobas E411
	ng/ml	6.39	4.85	7.93	0.77	1.54	
Free T4	pmol/l	55.0	41.2	68.8	6.90	13.80	Abbott Architect
	ng/dl	4.29	3.21	5.37	0.54	1.08	
	pg/ml	42.9	32.1	53.7	5.40	10.80	Abbott Architect
	pmol/l	77.3	58.0	96.6	9.65	19.30	Siemens Centaur XP/XPT/Classic
	ng/dl	6.03	4.52	7.54	0.76	1.51	
	pg/ml	60.3	45.2	75.4	7.55	15.10	Siemens Centaur XP/XPT/Classic
	pmol/l	62.1	46.6	77.6	7.75	15.50	Beckman Access
	ng/dl	4.84	3.63	6.05	0.61	1.21	
	pg/ml	48.4	36.3	60.5	6.05	12.10	Beckman Access
	pmol/l	63.3	47.4	79.2	7.95	15.90	Beckman Dxl800
	ng/dl	4.94	3.70	6.18	0.62	1.24	
	pg/ml	49.4	37.0	61.8	6.20	12.40	Beckman Dxl800
	pmol/l	72.4	54.3	90.5	9.05	18.10	Siemens Immulite 2000/2500
ng/dl	5.65	4.24	7.06	0.71	1.41		
pg/ml	56.5	42.4	70.6	7.05	14.10	Siemens Immulite 2000/2500	

## MEAN OF ALL INSTRUMENTS

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Free T4	pmol/l	89.8	67.3	112	11.25	22.50	Vitros ECi
	ng/dl	7.00	5.25	8.75	0.88	1.75	
	pg/ml	70.0	52.5	87.5	8.75	17.50	Vitros ECi
	pmol/l	97.3	73.0	122	12.15	24.30	Roche Elecsys
	ng/dl	7.59	5.69	9.49	0.95	1.90	
	pg/ml	75.9	56.9	94.9	9.50	19.00	Roche Elecsys
	pmol/l	94.9	71.1	119	11.90	23.80	Roche Cobas E411
	ng/dl	7.40	5.55	9.25	0.93	1.85	
	pg/ml	74.0	55.5	92.5	9.25	18.50	Roche Cobas E411
	pmol/l	93.8	70.4	117	11.70	23.40	Roche Cobas 6000/8000
	ng/dl	7.32	5.49	9.15	0.92	1.83	
	pg/ml	73.2	54.9	91.5	9.15	18.30	Roche Cobas 6000/8000
	pmol/l	88.2	66.2	110	11.00	22.00	Biomerieux Vidas FT4N Kit
	ng/dl	6.88	5.16	8.60	0.86	1.72	
pg/ml	68.8	51.6	86.0	8.60	17.20	Biomerieux Vidas FT4N Kit	
Gentamicin	µmol/l	18.9	15.1	22.6	1.88	3.75	Immunoturbidimetric
	µg/ml	9.01	7.22	10.8	0.90	1.79	
gamma-GT	U/l	165	141	189	12.00	24.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C
	U/l	130	111	149	9.50	19.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 30°C
	U/l	102	87	117	7.50	15.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 25°C
	U/l	205	174	236	15.50	31.00	Ortho Vitros Microslide Systems 37°C
	U/l	139	118	160	10.50	21.00	Gamma glutamyl-4-nitroanilide 37°C
	U/l	110	93	127	8.50	17.00	Gamma glutamyl-4-nitroanilide 30°C
	U/l	86	73	99	6.50	13.00	Gamma glutamyl-4-nitroanilide 25°C

## MEAN OF ALL INSTRUMENTS

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
gamma-GT	U/l	174	148	200	13.00	26.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	137	117	157	10.00	20.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30°C
	U/l	107	91	123	8.00	16.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25°C
	U/l	186	158	214	14.00	28.00	Randox Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C
	U/l	147	125	169	11.00	22.00	Randox Gamma glutamyl.-3-carboxy-4-nitroanilide 30°C
	U/l	115	97	133	9.00	18.00	Randox Gamma glutamyl.-3-carboxy-4-nitroanilide 25°C
GLDH	U/l	37	29	45	4.00	8.00	Triethanolamine buffer 50 mmol 37°C
	U/l	28	22	34	3.00	6.00	Triethanolamine buffer 50 mmol 30°C
	U/l	23	18	28	2.50	5.00	Triethanolamine buffer 50 mmol 25°C
Glucose	mmol/l	14.4	12.2	16.6	1.10	2.20	Ortho Vitros Microslide Systems
	mg/dl	259	220	298	19.50	39.00	
	mmol/l	15.5	13.2	17.8	1.15	2.30	Glucose dehydrogenase
	mg/dl	279	238	320	20.50	41.00	
	mmol/l	15.6	13.2	18.0	1.20	2.40	Hexokinase
	mg/dl	281	238	324	21.50	43.00	
	mmol/l	15.0	12.7	17.3	1.15	2.30	Oxygen electrode
	mg/dl	270	229	311	20.50	41.00	
mmol/l	15.4	13.1	17.7	1.15	2.30	Glucose oxidase	
mg/dl	278	236	320	21.00	42.00		
HDL - Cholesterol	mmol/l	2.72	2.31	3.13	0.21	0.41	Direct HDL PPD
	mg/dl	105	89.2	121	7.90	15.80	
	mmol/l	2.71	2.30	3.12	0.21	0.41	Direct HDL Immunoseparation
	mg/dl	105	88.8	121	8.10	16.20	
	mmol/l	2.47	2.10	2.84	0.19	0.37	Vitros Magnetic HDL
	mg/dl	95.3	81.1	110	7.10	14.20	

## MEAN OF ALL INSTRUMENTS

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

Range

Analyte	unit	Target	low	high	1SD	2SD	methods
HDL - Cholesterol	mmol/l	2.91	2.47	3.35	0.22	0.44	Direct HDL PEGME
	mg/dl	112	95.3	129	8.35	16.70	
	mmol/l	2.57	2.18	2.96	0.20	0.39	Direct Clearance Method
	mg/dl	99.2	84.1	114	7.55	15.10	
	mmol/l	2.41	2.05	2.77	0.18	0.36	Vitros dHDL PTA/MgCl <sub>2</sub> direct precipitation
	mg/dl	93.0	79.1	107	6.95	13.90	
	mmol/l	3.52	2.99	4.05	0.27	0.53	Direct HDL Roche 3rd generation
	mg/dl	136	115	157	10.50	21.00	
HDL - Ultra	mmol/l	2.61	2.22	3.00	0.20	0.39	HDL - Ultra
	mg/dl	101	85.7	116	7.65	15.30	
Direct HDL Roche 4th Generation	mmol/l	3.52	2.99	4.05	0.27	0.53	Direct HDL Roche 4th Generation
	mg/dl	136	115	157	10.50	21.00	
Immunoglobulin A	g/l	1.52	1.14	1.90	0.19	0.38	Immunoturbidimetric
	mg/dl	152	114	190	19.00	38.00	
Immunoglobulin G	g/l	6.37	5.22	7.52	0.58	1.15	Immunoturbidimetric
	mg/dl	637	522	752	57.50	115.00	
Immunoglobulin M	g/l	0.68	0.55	0.82	0.07	0.14	Immunoturbidimetric
	mg/dl	68.2	54.6	81.8	6.80	13.60	
Iron	μmol/l	39.0	31.9	46.1	3.55	7.10	Colorimetric with ppt.
	μg/dl	218	178	258	20.00	40.00	
	μmol/l	39.0	32.0	46.0	3.50	7.00	Colorimetric without ppt.
	μg/dl	218	179	257	19.50	39.00	
	μmol/l	38.8	31.8	45.8	3.50	7.00	Ortho Vitros Microslide Systems
	μg/dl	217	178	256	19.50	39.00	

## MEAN OF ALL INSTRUMENTS

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Lactate	mmol/l	5.26	4.31	6.21	0.48	0.95	Ion selective electrode
	mg/dl	47.4	38.8	56.0	4.30	8.60	
	mmol/l	5.46	4.48	6.44	0.49	0.98	Colorimetric Lactate Oxidase
	mg/dl	49.2	40.4	58.0	4.40	8.80	
	mmol/l	5.12	4.20	6.04	0.46	0.92	Ortho Vitros Microslide Systems
	mg/dl	46.1	37.8	54.4	4.15	8.30	
	mmol/l	5.37	4.41	6.33	0.48	0.96	Enzymatic Electrode
	mg/dl	48.4	39.7	57.1	4.35	8.70	
Lactate	mmol/l	5.28	4.33	6.23	0.48	0.95	UV LDH
	mg/dl	47.6	39.0	56.2	4.30	8.60	
LAP	U/l	18	15	21	1.50	3.00	NAGEL 37°C
LD (LDH)	U/l	329	280	378	24.50	49.00	L->P 37°C
	U/l	238	202	274	18.00	36.00	L->P 30°C
	U/l	167	142	192	12.50	25.00	L->P 25°C
	U/l	799	679	919	60.00	120.00	P->L Scandinavian & Dutch 37°C
	U/l	577	490	664	43.50	87.00	P->L Scandinavian & Dutch 30°C
	U/l	405	344	466	30.50	61.00	P->L Scandinavian & Dutch 25°C
	U/l	706	600	812	53.00	106.00	P->L German methods 37°C
	U/l	510	433	587	38.50	77.00	P->L German methods 30°C
	U/l	358	304	412	27.00	54.00	P->L German methods 25°C
	U/l	717	609	825	54.00	108.00	P->L SFBC 37°C
	U/l	518	440	596	39.00	78.00	P->L SFBC 30°C
	U/l	364	309	419	27.50	55.00	P->L SFBC 25°C
	U/l	370	315	425	27.50	55.00	L->P IFCC 37°C
	U/l	267	227	307	20.00	40.00	L->P IFCC 30°C
U/l	188	160	216	14.00	28.00	L->P IFCC 25°C	

## MEAN OF ALL INSTRUMENTS

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

Analyte	unit	Target	Range		1SD	2SD	methods
			low	high			
Lipase	U/l	704	564	844	70.00	140.00	Ortho Vitros Microslide Systems 37°C
	U/l	53	42	64	5.50	11.00	Roche Colorimetric 37°C
	U/l	85	68	102	8.50	17.00	Randox Colorimetric 37°C
Lithium	mmol/l	2.17	1.91	2.43	0.13	0.26	Ion selective electrode
	mg/dl	1.51	1.33	1.69	0.09	0.18	
	mmol/l	2.07	1.82	2.32	0.13	0.25	Spectrophotometric
	mg/dl	1.44	1.26	1.62	0.09	0.18	
	mmol/l	2.15	1.89	2.41	0.13	0.26	Randox Colorimetric
Magnesium	mmol/l	1.79	1.57	2.01	0.11	0.22	Arsenazo III
	mg/dl	4.35	3.82	4.88	0.27	0.53	
	mmol/l	1.85	1.63	2.07	0.11	0.22	Ortho Vitros Microslide Systems
	mg/dl	4.50	3.96	5.04	0.27	0.54	
	mmol/l	1.75	1.54	1.96	0.11	0.21	Calmagite
	mg/dl	4.25	3.74	4.76	0.26	0.51	
	mmol/l	1.79	1.57	2.01	0.11	0.22	Xylidyl Blue
	mg/dl	4.35	3.82	4.88	0.27	0.53	
	mmol/l	1.76	1.55	1.97	0.11	0.21	Methylthymol blue
	mg/dl	4.28	3.77	4.79	0.26	0.51	
	mmol/l	1.79	1.58	2.00	0.11	0.21	Chlorphosphonazo III
	mg/dl	4.35	3.84	4.86	0.26	0.51	
	mmol/l	1.79	1.57	2.01	0.11	0.22	Enzymatic
	mg/dl	4.35	3.82	4.88	0.27	0.53	
NEFA	mmol/l	0.62	0.52	0.71	0.05	0.09	Colorimetric

## MEAN OF ALL INSTRUMENTS

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Osmolality	mOsm/kg	352	281	423	35.50	71.00	Calculated
	mOsm/kg	379	303	455	38.00	76.00	Freezing point depression
Paracetamol	mmol/l	0.62	0.50	0.74	0.06	0.12	Colorimetric
	mg/l	93.8	75.0	113	9.40	18.80	
Phosphate Inorganic	mmol/l	2.24	1.90	2.58	0.17	0.34	Ortho Vitros Microslide Systems
	mg/dl	6.94	5.89	7.99	0.53	1.05	
	mmol/l	2.23	1.90	2.56	0.17	0.33	Phosphomolybdate enzymatic
	mg/dl	6.91	5.89	7.93	0.51	1.02	
Potassium	mmol/l	2.24	1.91	2.57	0.17	0.33	Phosphomolybdate UV
	mg/dl	6.94	5.92	7.96	0.51	1.02	
	mmol/l	6.32	5.82	6.82	0.25	0.50	Ortho Vitros Microslide Systems
	mmol/l	6.55	6.03	7.07	0.26	0.52	Enzymatic
Protein Total	mmol/l	6.31	5.81	6.81	0.25	0.50	ISE method - direct
	mmol/l	6.38	5.87	6.89	0.26	0.51	ISE method - indirect
	g/l	47.3	37.8	56.8	4.75	9.50	Ortho Vitros Microslide Systems
	g/dl	4.73	3.78	5.68	0.48	0.95	
PSA Total	g/l	46.0	36.8	55.2	4.60	9.20	Biuret reaction end point
	g/dl	4.60	3.68	5.52	0.46	0.92	
	g/l	45.5	36.4	54.6	4.55	9.10	Biuret reaction kinetic
	g/dl	4.55	3.64	5.46	0.46	0.91	
PSA Total	ng/ml =	37.7	28.3	47.1	4.70	9.40	Beckman Access standardised to Hybritech
	ng/ml =	30.4	22.8	38.0	3.80	7.60	bioMerieux VIDAS TPSA
	ng/ml =	30.6	22.9	38.3	3.85	7.70	Siemens Centaur XP/XPT/Classic
	ng/ml =	25.3	19.0	31.6	3.15	6.30	Abbott Architect
	ng/ml =	35.5	26.7	44.3	4.40	8.80	Cobas E411



## MEAN OF ALL INSTRUMENTS

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
PSA Total	ng/ml =	33.7	25.2	42.2	4.25	8.50	Roche Cobas 6000/8000
Salicylate	mmol/l	0.87	0.70	1.04	0.09	0.17	Gravimetric
	mg/dl	12.0	9.59	14.4	1.21	2.41	
Sodium	mmol/l	156	148	164	4.00	8.00	Ortho Vitros Microslide Systems
	mmol/l	155	147	163	4.00	8.00	Enzymatic
	mmol/l	158	150	166	4.00	8.00	ISE method - direct
	mmol/l	159	151	167	4.00	8.00	ISE method - indirect
Theophylline	µmol/l	139	111	167	14.00	28.00	Gravimetric
	µg/ml	25.0	20.0	30.0	2.50	5.00	
Thyroid Stimulating Hormone	µU/ml =	0.82	0.66	0.99	0.08	0.16	Abbott Architect
	µU/ml =	1.30	1.04	1.56	0.13	0.26	Siemens Centaur XP/XPT/Classic
	µU/ml =	0.96	0.77	1.16	0.10	0.19	Beckman Access hyperTSH 3rd Generation
	µU/ml =	1.02	0.81	1.23	0.10	0.21	bioMerieux VIDAS TSH
	µU/ml =	1.06	0.85	1.27	0.11	0.21	bioMerieux VIDAS TSH3 Ultrasensitive
	µU/ml =	1.02	0.82	1.22	0.10	0.20	Siemens Immulite 2000/2500
	µU/ml =	1.20	0.96	1.44	0.12	0.24	Roche Cobas E411
	µU/ml =	1.20	0.96	1.44	0.12	0.24	Roche Cobas Core EIA
	µU/ml =	1.18	0.94	1.42	0.12	0.24	Roche Cobas 6000/8000
	µU/ml =	0.96	0.77	1.15	0.10	0.19	Beckman Dxl800 Hyper TSH
	µU/ml =	0.91	0.73	1.10	0.09	0.18	Siemens Centaur XP/XPT/Classic TSH3-Ultra
	µU/ml =	0.92	0.74	1.10	0.09	0.18	Beckman Dxl 600/800 Access (3rd IS)
TIBC	µmol/l	37.8	29.9	45.7	3.95	7.90	Removal of excess free iron
	µg/dl	211	167	255	22.00	44.00	
	µmol/l	41.2	32.6	49.8	4.30	8.60	FE+UIBC(saturation with iron)
	µg/dl	230	182	278	24.00	48.00	

## MEAN OF ALL INSTRUMENTS

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
TIBC	µmol/l	41.8	33.0	50.6	4.40	8.80	Direct Colorimetric
	µg/dl	234	184	284	25.00	50.00	
	µmol/l	40.6	32.0	49.2	4.30	8.60	Calculated from Transferrin
	µg/dl	227	179	275	24.00	48.00	
Tobramycin	µmol/l	45.3	35.8	54.8	4.75	9.50	Randox Direct
	µg/dl	253	200	306	26.50	53.00	
Tobramycin	µmol/l	15.6	12.5	18.7	1.55	3.10	Gravimetric
	µg/ml	7.30	5.85	8.75	0.73	1.45	
Total T3	nmol/l	2.97	2.23	3.71	0.37	0.74	Abbott Architect
	ng/ml	1.93	1.45	2.41	0.24	0.48	
	ng/dl	193	145	241	24.00	48.00	Abbott Architect
	nmol/l	3.36	2.52	4.20	0.42	0.84	Beckman Access
	ng/ml	2.19	1.64	2.74	0.28	0.55	
	ng/dl	219	164	274	27.50	55.00	Beckman Access
	nmol/l	4.19	3.14	5.24	0.53	1.05	Siemens Centaur XP/XPT/Classic
	ng/ml	2.73	2.04	3.42	0.35	0.69	
	ng/dl	273	204	342	34.50	69.00	Siemens Centaur XP/XPT/Classic
	nmol/l	3.89	2.91	4.87	0.49	0.98	Roche Cobas E411
	ng/ml	2.53	1.89	3.17	0.32	0.64	
	ng/dl	253	189	317	32.00	64.00	Roche Cobas E411
Total T3	nmol/l	3.92	2.94	4.90	0.49	0.98	Roche Cobas 6000/8000
	ng/ml	2.55	1.91	3.19	0.32	0.64	
	ng/dl	255	191	319	32.00	64.00	Roche Cobas 6000/8000
	nmol/l	250	188	312	31.00	62.00	Abbott Architect
Total T4	µg/dl	19.5	14.7	24.3	2.40	4.80	
	ng/ml	195	147	243	24.00	48.00	Abbott Architect

## MEAN OF ALL INSTRUMENTS

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Total T4	nmol/l	239	179	299	30.00	60.00	Siemens Centaur XP/XPT/Classic
	µg/dl	18.6	14.0	23.2	2.30	4.60	
	ng/ml	186	140	232	23.00	46.00	Siemens Centaur XP/XPT/Classic
	nmol/l	201	151	251	25.00	50.00	Roche Cobas E411
	µg/dl	15.7	11.8	19.6	1.95	3.90	
	ng/ml	157	118	196	19.50	39.00	Roche Cobas E411
	nmol/l	201	151	251	25.00	50.00	Roche Cobas 6000/8000
	µg/dl	15.7	11.8	19.6	1.95	3.90	
	ng/ml	157	118	196	19.50	39.00	Roche Cobas 6000/8000
	nmol/l	197	148	246	24.50	49.00	Microgenics DRI assay
µg/dl	15.4	11.5	19.3	1.95	3.90		
ng/ml	154	115	193	19.50	39.00	Microgenics DRI assay	
Transferrin	g/l	1.72	1.38	2.06	0.17	0.34	Immunoturbidimetric
	mg/dl	172	138	206	17.00	34.00	
Triglycerides	mmol/l	2.95	2.48	3.42	0.24	0.47	Lipase/GPO-PAP no correction
	mg/dl	261	219	303	21.00	42.00	
	mmol/l	2.95	2.48	3.42	0.24	0.47	Lipase/GPO-PAP 0.11mmol/l correction
	mg/dl	261	219	303	21.00	42.00	
	mmol/l	2.97	2.49	3.45	0.24	0.48	L/G Kinase EP. no correction
	mg/dl	263	220	306	21.50	43.00	
	mmol/l	2.95	2.48	3.42	0.24	0.47	Lipase/Glycerol Dehydrogenase
	mg/dl	261	219	303	21.00	42.00	
	mmol/l	3.22	2.70	3.74	0.26	0.52	Ortho Vitros Microslide Systems
	mg/dl	285	239	331	23.00	46.00	

## MEAN OF ALL INSTRUMENTS

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
UIBC	µmol/l	2.80	2.30	3.30	0.25	0.50	TIBC - FE
	µg/dl	15.7	12.9	18.5	1.40	2.80	
Urea	mmol/l	17.9	15.3	20.5	1.30	2.60	Ortho Vitros Microslide Systems
	mg/dl	108	92.0	124	8.00	16.00	
	mmol/l	19.6	16.6	22.6	1.50	3.00	Urease end point
	mg/dl	118	99.8	136	9.10	18.20	
	mmol/l	19.5	16.5	22.5	1.50	3.00	Urease kinetic
	mg/dl	117	99.2	135	8.90	17.80	
mmol/l	19.5	16.6	22.4	1.45	2.90	BUN	
mg/dl	54.7	46.5	62.9	4.10	8.20		
Uric Acid (Urate)	mmol/l	0.52	0.45	0.59	0.03	0.07	Ortho Vitros Microslide Systems
	mg/dl	8.77	7.63	9.91	0.57	1.14	
	mmol/l	0.56	0.49	0.63	0.04	0.07	Uricase catalase 340nm
	mg/dl	9.42	8.20	10.6	0.61	1.22	
	mmol/l	0.56	0.48	0.63	0.04	0.07	Uricase peroxidase with ascorbate oxidase
	mg/dl	9.34	8.13	10.6	0.61	1.21	
	mmol/l	0.55	0.48	0.63	0.04	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.29	8.08	10.5	0.61	1.21	
	mmol/l	0.55	0.48	0.62	0.04	0.07	Spectrophotometric at 280-290
	mg/dl	9.21	8.01	10.4	0.60	1.20	
mmol/l	0.55	0.48	0.62	0.04	0.07	Uricase Peroxidase with ascorbate oxidase @ 546nm	
mg/dl	9.21	8.01	10.4	0.60	1.20		
Vitamin B12	pmol/l	257	206	308	25.50	51.00	Roche Cobas E411
	pg/ml	348	279	417	34.50	69.00	
Zinc	µmol/l	35.6	28.5	42.7	3.55	7.10	Colorimetric with deproteinisation
	µg/dl	232	186	278	23.00	46.00	

**MEAN OF ALL INSTRUMENTS (Elec.)**

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Albumin (electrophoresis)		58.3	52.5	64.1	2.90	5.80	% of total Protein (Beckman Capillary)
alpha-1-globulin		7.2	5.5	8.9	0.87	1.73	% of total Protein (Beckman Capillary)
alpha-2-globulin		11.1	8.4	13.8	1.33	2.66	% of total Protein (Beckman Capillary)
beta-globulin		12.3	9.4	15.3	1.48	2.95	% of total Protein (Beckman Capillary)
gamma-globulin		11.1	8.4	13.8	1.33	2.66	% of total Protein (Beckman Capillary)

## MINDRAY BS-200/300/400

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

Analyte	unit	Target	Range		1SD	2SD	methods
			low	high			
Albumin	g/l	32.2	27.3	37.1	2.45	4.90	Bromocresol Green
	g/dl	3.22	2.73	3.71	0.25	0.49	
ALT (GPT)	U/l	148	118	178	15.00	30.00	Tris buffer without P5P 37°C
	U/l	110	87	133	11.50	23.00	Tris buffer without P5P 30°C
	U/l	83	66	100	8.50	17.00	Tris buffer without P5P 25°C
AST (GOT)	U/l	147	117	177	15.00	30.00	Tris buffer without P5P 37°C
	U/l	99	79	119	10.00	20.00	Tris buffer without P5P 30°C
	U/l	70	56	84	7.00	14.00	Tris buffer without P5P 25°C
Bilirubin Total	µmol/l	88.8	70.1	108	9.35	18.70	Diazo with Sulphanilic Acid
	mg/dl	5.19	4.10	6.28	0.55	1.09	
	µmol/l	96.1	75.9	116	10.10	20.20	Dichlorophenyl Diazonium (DPD)
	mg/dl	5.62	4.44	6.80	0.59	1.18	
	µmol/l	96.5	76.2	117	10.15	20.30	Oxidation to Biliverdin/Vanadate
	mg/dl	5.65	4.46	6.84	0.60	1.19	
Calcium	mmol/l	3.23	2.91	3.55	0.16	0.32	Arsenazo III
	mg/dl	12.9	11.7	14.1	0.60	1.20	
Cholesterol	mmol/l	7.31	6.36	8.26	0.48	0.95	Cholesterol Oxidase
	mg/dl	282	245	319	18.50	37.00	
CK Total	U/l	534	438	630	48.00	96.00	CK-NAC (IFCC) 37°C
	U/l	334	274	394	30.00	60.00	CK-NAC (IFCC) 30°C
	U/l	227	186	268	20.50	41.00	CK-NAC (IFCC) 25°C

## MINDRAY BS-200/300/400

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Creatinine	µmol/l	364	292	436	36.00	72.00	Alkaline picrate no deproteinization
	mg/dl	4.11	3.30	4.92	0.41	0.81	
gamma-GT	U/l	174	148	200	13.00	26.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	137	117	157	10.00	20.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30°C
	U/l	107	91	123	8.00	16.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25°C
Glucose	mmol/l	16.2	13.8	18.6	1.20	2.40	Hexokinase
	mg/dl	292	249	335	21.50	43.00	
	mmol/l	15.9	13.5	18.3	1.20	2.40	Glucose oxidase
	mg/dl	287	243	331	22.00	44.00	
HDL - Cholesterol	mmol/l	2.55	2.16	2.94	0.20	0.39	Direct Clearance Method
	mg/dl	98.4	83.4	113	7.50	15.00	
Iron	µmol/l	39.1	32.0	46.2	3.55	7.10	Colorimetric without ppt.
	µg/dl	219	179	259	20.00	40.00	
LD (LDH)	U/l	771	655	887	58.00	116.00	P->L German methods 37°C
	U/l	557	473	641	42.00	84.00	P->L German methods 30°C
	U/l	391	332	450	29.50	59.00	P->L German methods 25°C
	U/l	725	616	834	54.50	109.00	P->L SFBC 37°C
	U/l	523	445	601	39.00	78.00	P->L SFBC 30°C
	U/l	368	312	424	28.00	56.00	P->L SFBC 25°C
	U/l	378	321	435	28.50	57.00	L->P IFCC 37°C
	U/l	273	232	314	20.50	41.00	L->P IFCC 30°C
	U/l	192	163	221	14.50	29.00	L->P IFCC 25°C
Magnesium	mmol/l	1.62	1.42	1.82	0.10	0.20	Xylidyl Blue
	mg/dl	3.94	3.45	4.43	0.25	0.49	
Phosphate Inorganic	mmol/l	2.15	1.83	2.47	0.16	0.32	Phosphomolybdate UV
	mg/dl	6.67	5.67	7.67	0.50	1.00	

## MINDRAY BS-200/300/400

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Protein Total	g/l	48.0	38.4	57.6	4.80	9.60	Biuret reaction end point
	g/dl	4.80	3.84	5.76	0.48	0.96	
Triglycerides	mmol/l	2.97	2.49	3.45	0.24	0.48	Lipase/GPO-PAP no correction
	mg/dl	263	220	306	21.50	43.00	
Urea	mmol/l	19.9	16.9	22.9	1.50	3.00	Urease kinetic
	mg/dl	120	102	138	9.00	18.00	
	mmol/l	19.9	16.9	22.9	1.50	3.00	BUN
	mg/dl	55.9	47.5	64.3	4.20	8.40	
Uric Acid (Urate)	mmol/l	0.56	0.49	0.63	0.04	0.07	Uricase peroxidase with ascorbate oxidase
	mg/dl	9.37	8.16	10.6	0.61	1.21	
	mmol/l	0.57	0.50	0.64	0.04	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.56	8.32	10.8	0.62	1.24	
	mmol/l	0.53	0.46	0.60	0.03	0.07	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	8.92	7.76	10.1	0.58	1.16	



## Ortho VITROS®

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Albumin	g/l	29.3	24.9	33.7	2.20	4.40	Ortho Vitros Microslide Systems
	g/dl	2.93	2.49	3.37	0.22	0.44	
Alkaline Phosphatase	U/l	259	220	298	19.50	39.00	Ortho Vitros Microslide Systems 37°C
ALT (GPT)	U/l	156	125	187	15.50	31.00	Ortho Vitros Microslide Systems 37°C
Amylase Total	U/l	187	159	215	14.00	28.00	Ortho Vitros Microslide Systems 37°C
AST (GOT)	U/l	188	151	225	18.50	37.00	Ortho Vitros Microslide visible slide 37°C
Bicarbonate	mmol/l	17.1	13.6	20.6	1.75	3.50	Ortho Vitros Microslide Systems
Bilirubin Total	µmol/l	80.5	63.6	97.4	8.45	16.90	Vitros 250/500/700/950 Total Bilirubin
	mg/dl	4.71	3.72	5.70	0.50	0.99	
Bilirubin, Unconjugated Vitros BU	µmol/l	80.5	63.6	97.4	8.45	16.90	BuBc Vitros Slide
	mg/dl	4.71	3.72	5.70	0.50	0.99	
Calcium	mmol/l	3.12	2.80	3.44	0.16	0.32	Ortho Vitros Microslide Systems
	mg/dl	12.5	11.2	13.8	0.65	1.30	
Chloride	mmol/l	121	111	131	5.00	10.00	Ortho Vitros Microslide Systems
Cholesterol	mmol/l	6.74	5.86	7.62	0.44	0.88	Ortho Vitros Microslide Systems
	mg/dl	260	226	294	17.00	34.00	
CK Total	U/l	420	345	495	37.50	75.00	Ortho Vitros Microslide Systems 37°C
Creatinine	µmol/l	391	313	469	39.00	78.00	Vitros IDMS Traceable
	mg/dl	4.42	3.54	5.30	0.44	0.88	
gamma-GT	U/l	205	174	236	15.50	31.00	Ortho Vitros Microslide Systems 37°C
Glucose	mmol/l	14.4	12.2	16.6	1.10	2.20	Ortho Vitros Microslide Systems
	mg/dl	259	220	298	19.50	39.00	

## Ortho VITROS®

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
HDL - Cholesterol	mmol/l	2.47	2.10	2.84	0.19	0.37	Vitros Magnetic HDL
	mg/dl	95.3	81.1	110	7.10	14.20	
	mmol/l	2.41	2.05	2.77	0.18	0.36	Vitros dHDL PTA/MgCl <sub>2</sub> direct precipitation
	mg/dl	93.0	79.1	107	6.95	13.90	
Iron	µmol/l	38.8	31.8	45.8	3.50	7.00	Ortho Vitros Microslide Systems
	µg/dl	217	178	256	19.50	39.00	
Lactate	mmol/l	5.12	4.20	6.04	0.46	0.92	Ortho Vitros Microslide Systems
	mg/dl	46.1	37.8	54.4	4.15	8.30	
Lipase	U/l	704	564	844	70.00	140.00	Ortho Vitros Microslide Systems 37°C
Magnesium	mmol/l	1.85	1.63	2.07	0.11	0.22	Ortho Vitros Microslide Systems
	mg/dl	4.50	3.96	5.04	0.27	0.54	
Phosphate Inorganic	mmol/l	2.24	1.90	2.58	0.17	0.34	Ortho Vitros Microslide Systems
	mg/dl	6.94	5.89	7.99	0.53	1.05	
Potassium	mmol/l	6.32	5.82	6.82	0.25	0.50	Ortho Vitros Microslide Systems
Protein Total	g/l	47.3	37.8	56.8	4.75	9.50	Ortho Vitros Microslide Systems
	g/dl	4.73	3.78	5.68	0.48	0.95	
Sodium	mmol/l	156	148	164	4.00	8.00	Ortho Vitros Microslide Systems
Triglycerides	mmol/l	3.22	2.70	3.74	0.26	0.52	Ortho Vitros Microslide Systems
	mg/dl	285	239	331	23.00	46.00	
Urea	mmol/l	17.9	15.3	20.5	1.30	2.60	Ortho Vitros Microslide Systems
	mg/dl	108	92.0	124	8.00	16.00	
	mmol/l	17.9	15.2	20.6	1.35	2.70	BUN
	mg/dl	50.2	42.7	57.7	3.75	7.50	
Uric Acid (Urate)	mmol/l	0.52	0.45	0.59	0.03	0.07	Ortho Vitros Microslide Systems
	mg/dl	8.77	7.63	9.91	0.57	1.14	

## PRESTIGE 24i

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Albumin	g/l	29.5	25.1	33.9	2.20	4.40	Bromocresol Green
	g/dl	2.95	2.51	3.39	0.22	0.44	
AST (GOT)	U/l	144	115	173	14.50	29.00	Tris buffer without P5P 37°C
	U/l	97	78	116	9.50	19.00	Tris buffer without P5P 30°C
	U/l	69	55	83	7.00	14.00	Tris buffer without P5P 25°C
Calcium	mmol/l	3.03	2.73	3.33	0.15	0.30	Arsenazo III
	mg/dl	12.1	10.9	13.3	0.60	1.20	
Cholesterol	mmol/l	7.20	6.27	8.13	0.47	0.93	Cholesterol Oxidase
	mg/dl	278	242	314	18.00	36.00	
CK Total	U/l	527	432	622	47.50	95.00	CK-NAC (IFCC) 37°C
	U/l	330	270	390	30.00	60.00	CK-NAC (IFCC) 30°C
	U/l	224	184	264	20.00	40.00	CK-NAC (IFCC) 25°C
Creatinine	μmol/l	355	284	426	35.50	71.00	Alkaline picrate no deproteinization
	mg/dl	4.01	3.21	4.81	0.40	0.80	
Glucose	mmol/l	15.3	13.0	17.6	1.15	2.30	Glucose oxidase
	mg/dl	276	234	318	21.00	42.00	
Protein Total	g/l	45.4	36.3	54.5	4.55	9.10	Biuret reaction end point
	g/dl	4.54	3.63	5.45	0.46	0.91	
Triglycerides	mmol/l	2.81	2.36	3.26	0.23	0.45	Lipase/GPO-PAP no correction
	mg/dl	249	209	289	20.00	40.00	
Urea	mmol/l	19.5	16.6	22.4	1.45	2.90	Urease kinetic
	mg/dl	117	99.8	134	8.60	17.20	

**PRESTIGE 24i**

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

**Range**

Analyte	unit	Target	low	high	1SD	2SD	methods
Urea	mmol/l	19.5	16.6	22.4	1.45	2.90	BUN
	mg/dl	54.7	46.5	62.9	4.10	8.20	
Uric Acid (Urate)	mmol/l	0.54	0.47	0.60	0.03	0.07	Uricase peroxidase with ascorbate oxidase
	mg/dl	8.99	7.83	10.2	0.58	1.16	

## Roche Cobas 6000 c501 e601

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

Analyte	unit	Target	Range		1SD	2SD	methods
			low	high			
Albumin	g/l	32.5	27.6	37.4	2.45	4.90	Bromocresol Green
	g/dl	3.25	2.76	3.74	0.25	0.49	
	g/l	29.6	25.2	34.0	2.20	4.40	Bromocresol Purple
	g/dl	2.96	2.52	3.40	0.22	0.44	
	g/l	28.2	23.9	32.5	2.15	4.30	Turbidimetric Assays
	g/dl	2.82	2.39	3.25	0.22	0.43	
Alkaline Phosphatase	U/l	283	241	325	21.00	42.00	Roche Integra AMP buffer 37°C
	U/l	220	188	252	16.00	32.00	Roche Integra AMP buffer 30°C
	U/l	181	154	208	13.50	27.00	Roche Integra AMP buffer 25°C
ALT (GPT)	U/l	138	111	165	13.50	27.00	Tris buffer without P5P 37°C
	U/l	102	82	122	10.00	20.00	Tris buffer without P5P 30°C
	U/l	78	62	94	8.00	16.00	Tris buffer without P5P 25°C
Amylase Pancreatic	U/l	254	216	292	19.00	38.00	Roche EPS Liquid 37°C
Amylase Total	U/l	274	233	315	20.50	41.00	BM/Roche Colorimetric pNPG7 37°C
	U/l	274	233	315	20.50	41.00	Roche Integra 2-chloro-pNPG7 37°C
	U/l	275	233	317	21.00	42.00	Roche liquid stable pNPG7 37°C
AST (GOT)	U/l	142	114	170	14.00	28.00	Tris buffer without P5P 37°C
	U/l	96	77	115	9.50	19.00	Tris buffer without P5P 30°C
	U/l	68	54	82	7.00	14.00	Tris buffer without P5P 25°C
Bicarbonate	mmol/l	14.6	11.6	17.6	1.50	3.00	Colorimetric
	mmol/l	14.7	11.7	17.7	1.50	3.00	Enzymatic

## Roche Cobas 6000 c501 e601

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Bile Acids	µmol/l	46.9	37.6	56.2	4.65	9.30	Enzymatic Colorimetric
Bilirubin Direct	µmol/l	29.2	23.0	35.4	3.10	6.20	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.71	1.35	2.07	0.18	0.36	
	µmol/l	28.8	22.8	34.8	3.00	6.00	Diazo with Sulphanilic Acid
	mg/dl	1.68	1.33	2.03	0.18	0.35	
	µmol/l	29.2	23.1	35.3	3.05	6.10	Roche JG factored
	mg/dl	1.71	1.35	2.07	0.18	0.36	
Bilirubin Total	µmol/l	82.4	65.1	99.7	8.65	17.30	Diazo with Sulphanilic Acid
	mg/dl	4.82	3.81	5.83	0.51	1.01	
	µmol/l	82.6	65.3	99.9	8.65	17.30	Dichlorophenyl Diazonium (DPD)
	mg/dl	4.83	3.82	5.84	0.51	1.01	
	µmol/l	82.2	65.0	99.4	8.60	17.20	Diazonium ion
	mg/dl	4.81	3.80	5.82	0.51	1.01	
Calcium	mmol/l	3.11	2.80	3.42	0.16	0.31	Cresolphthalein complexone
	mg/dl	12.5	11.2	13.8	0.65	1.30	
	mmol/l	3.10	2.79	3.41	0.16	0.31	NM-BAPTA
	mg/dl	12.4	11.2	13.6	0.60	1.20	
Chloride	mmol/l	117	108	126	4.50	9.00	ISE indirect
Cholesterol	mmol/l	6.91	6.01	7.81	0.45	0.90	Cholesterol Oxidase
	mg/dl	267	232	302	17.50	35.00	
Cholinesterase	U/l	5035	4028	6042	503.50	1007.00	Colorimetric Butyrylthiocholine 37°C
CK Total	U/l	486	399	573	43.50	87.00	CK-NAC substrate start (DGKC) 37°C
	U/l	304	250	358	27.00	54.00	CK-NAC substrate start (DGKC) 30°C
	U/l	207	170	244	18.50	37.00	CK-NAC substrate start (DGKC) 25°C
	U/l	482	395	569	43.50	87.00	CK-NAC (IFCC) 37°C
	U/l	302	247	357	27.50	55.00	CK-NAC (IFCC) 30°C
	U/l	205	168	242	18.50	37.00	CK-NAC (IFCC) 25°C

## Roche Cobas 6000 c501 e601

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Creatinine	µmol/l	393	315	471	39.00	78.00	Alkaline picrate no deproteinization
	mg/dl	4.44	3.56	5.32	0.44	0.88	
	µmol/l	388	311	465	38.50	77.00	Enzymatic UV method
	mg/dl	4.38	3.51	5.25	0.44	0.87	
	µmol/l	393	314	472	39.50	79.00	Roche Creatinine Plus
	mg/dl	4.44	3.55	5.33	0.45	0.89	
	µmol/l	396	317	475	39.50	79.00	Jaffe rate blanked
	mg/dl	4.47	3.58	5.36	0.45	0.89	
	µmol/l	387	309	465	39.00	78.00	Jaffe rate blanked comp. (-26 µmol/l)
	mg/dl	4.37	3.49	5.25	0.44	0.88	
	µmol/l	394	315	473	39.50	79.00	Jaffe rate blanked compensated (-18 µmol/l)
	mg/dl	4.45	3.56	5.34	0.45	0.89	
D-3-Hydroxybutyrate	mmol/l	1.22	1.04	1.40	0.09	0.18	Tris buffer 100mmol pH 8.5
Free T4	pmol/l	93.8	70.4	117	11.70	23.40	Roche Cobas 6000/8000
	ng/dl	7.32	5.49	9.15	0.92	1.83	
	pg/ml	73.2	54.9	91.5	9.15	18.30	Roche Cobas 6000/8000
gamma-GT	U/l	154	131	177	11.50	23.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C
	U/l	121	103	139	9.00	18.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 30°C
	U/l	95	81	109	7.00	14.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 25°C
	U/l	177	151	203	13.00	26.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	139	119	159	10.00	20.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30°C
	U/l	109	93	125	8.00	16.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25°C
GLDH	U/l	35	28	42	3.50	7.00	Triethanolamine buffer 50 mmol 37°C
	U/l	27	22	32	2.50	5.00	Triethanolamine buffer 50 mmol 30°C
	U/l	22	17	27	2.50	5.00	Triethanolamine buffer 50 mmol 25°C

## Roche Cobas 6000 c501 e601

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

Analyte	unit	Target	Range		1SD	2SD	methods
			low	high			
Glucose	mmol/l	15.4	13.1	17.7	1.15	2.30	Glucose dehydrogenase
	mg/dl	278	236	320	21.00	42.00	
	mmol/l	15.5	13.2	17.8	1.15	2.30	Hexokinase
	mg/dl	279	238	320	20.50	41.00	
HDL - Cholesterol	mmol/l	3.45	2.93	3.97	0.26	0.52	Direct HDL PEGME
	mg/dl	133	113	153	10.00	20.00	
	mmol/l	3.43	2.92	3.94	0.26	0.51	Direct HDL Roche 3rd generation
	mg/dl	132	113	151	9.50	19.00	
Iron	mmol/l	3.52	2.99	4.05	0.27	0.53	Direct HDL Roche 4th Generation
	mg/dl	136	115	157	10.50	21.00	
	µmol/l	38.7	31.8	45.6	3.45	6.90	Colorimetric with ppt.
	µg/dl	216	178	254	19.00	38.00	
Lactate	µmol/l	39.2	32.2	46.2	3.50	7.00	Colorimetric without ppt.
	µg/dl	219	180	258	19.50	39.00	
	mmol/l	5.46	4.47	6.45	0.50	0.99	Colorimetric Lactate Oxidase
	mg/dl	49.2	40.3	58.1	4.45	8.90	
LD (LDH)	U/l	356	302	410	27.00	54.00	L->P 37°C
	U/l	257	218	296	19.50	39.00	L->P 30°C
	U/l	180	153	207	13.50	27.00	L->P 25°C
	U/l	692	588	796	52.00	104.00	P->L German methods 37°C
	U/l	500	425	575	37.50	75.00	P->L German methods 30°C
	U/l	351	298	404	26.50	53.00	P->L German methods 25°C
	U/l	371	315	427	28.00	56.00	L->P IFCC 37°C
	U/l	268	227	309	20.50	41.00	L->P IFCC 30°C
	U/l	188	160	216	14.00	28.00	L->P IFCC 25°C



## Roche Cobas 6000 c501 e601

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Lipase	U/l	52	41	63	5.50	11.00	Roche Colorimetric 37°C
Lithium	mmol/l	2.11	1.86	2.36	0.13	0.25	Spectrophotometric
	mg/dl	1.47	1.29	1.65	0.09	0.18	
Magnesium	mmol/l	1.79	1.57	2.01	0.11	0.22	Xylidyl Blue
	mg/dl	4.35	3.82	4.88	0.27	0.53	
	mmol/l	1.78	1.57	1.99	0.11	0.21	Chlorphosphonazo III
	mg/dl	4.33	3.82	4.84	0.26	0.51	
Osmolality	mOsm/kg	351	281	421	35.00	70.00	Calculated
Phosphate Inorganic	mmol/l	2.24	1.90	2.58	0.17	0.34	Phosphomolybdate enzymatic
	mg/dl	6.94	5.89	7.99	0.53	1.05	
	mmol/l	2.23	1.89	2.57	0.17	0.34	Phosphomolybdate UV
	mg/dl	6.91	5.86	7.96	0.53	1.05	
Potassium	mmol/l	6.44	5.92	6.96	0.26	0.52	ISE method - indirect
Protein Total	g/l	46.2	36.9	55.5	4.65	9.30	Biuret reaction end point
	g/dl	4.62	3.69	5.55	0.47	0.93	
	g/l	46.1	36.9	55.3	4.60	9.20	Biuret reaction kinetic
	g/dl	4.61	3.69	5.53	0.46	0.92	
PSA Total	ng/ml =	33.7	25.2	42.2	4.25	8.50	Roche Cobas 6000/8000
Sodium	mmol/l	160	152	168	4.00	8.00	ISE method - indirect
Thyroid Stimulating Hormone	µU/ml =	1.18	0.94	1.42	0.12	0.24	Roche Cobas 6000/8000
TIBC	µmol/l	41.1	32.5	49.7	4.30	8.60	FE+UIBC(saturation with iron)
	µg/dl	230	182	278	24.00	48.00	
	µmol/l	43.5	34.4	52.6	4.55	9.10	Calculated from Transferrin
	µg/dl	243	192	294	25.50	51.00	

## Roche Cobas 6000 c501 e601

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Total T3	nmol/l	3.92	2.94	4.90	0.49	0.98	Roche Cobas 6000/8000
	ng/ml	2.55	1.91	3.19	0.32	0.64	
	ng/dl	255	191	319	32.00	64.00	Roche Cobas 6000/8000
Total T4	nmol/l	201	151	251	25.00	50.00	Roche Cobas 6000/8000
	µg/dl	15.7	11.8	19.6	1.95	3.90	
	ng/ml	157	118	196	19.50	39.00	Roche Cobas 6000/8000
Triglycerides	mmol/l	2.93	2.46	3.40	0.24	0.47	Lipase/GPO-PAP no correction
	mg/dl	259	218	300	20.50	41.00	
	mmol/l	2.97	2.49	3.45	0.24	0.48	L/G Kinase EP. no correction
	mg/dl	263	220	306	21.50	43.00	
Urea	mmol/l	19.3	16.4	22.2	1.45	2.90	Urease end point
	mg/dl	116	98.6	133	8.70	17.40	
	mmol/l	19.3	16.4	22.2	1.45	2.90	Urease kinetic
	mg/dl	116	98.6	133	8.70	17.40	
	mmol/l	19.3	16.4	22.2	1.45	2.90	BUN
mg/dl	54.2	46.1	62.3	4.05	8.10		
Uric Acid (Urate)	mmol/l	0.54	0.47	0.61	0.04	0.07	Uricase peroxidase with ascorbate oxidase
	mg/dl	9.09	7.90	10.3	0.60	1.19	
	mmol/l	0.54	0.47	0.61	0.04	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.02	7.85	10.2	0.59	1.17	
	mmol/l	0.54	0.47	0.61	0.04	0.07	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	9.06	7.88	10.2	0.59	1.18	

## Roche Cobas C111®

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 107UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

Analyte	unit	Target	Range		1SD	2SD	methods
			low	high			
Albumin	g/l	31.8	27.0	36.6	2.40	4.80	Bromocresol Green
	g/dl	3.18	2.70	3.66	0.24	0.48	
Alkaline Phosphatase	U/l	292	248	336	22.00	44.00	Roche Integra AMP buffer 37°C
	U/l	227	193	261	17.00	34.00	Roche Integra AMP buffer 30°C
	U/l	187	158	216	14.50	29.00	Roche Integra AMP buffer 25°C
ALT (GPT)	U/l	136	109	163	13.50	27.00	Tris buffer without P5P 37°C
	U/l	101	81	121	10.00	20.00	Tris buffer without P5P 30°C
	U/l	77	61	93	8.00	16.00	Tris buffer without P5P 25°C
Amylase Total	U/l	285	243	327	21.00	42.00	Roche liquid stable pNPG7 37°C
AST (GOT)	U/l	139	111	167	14.00	28.00	Tris buffer without P5P 37°C
	U/l	94	75	113	9.50	19.00	Tris buffer without P5P 30°C
	U/l	66	53	79	6.50	13.00	Tris buffer without P5P 25°C
Bicarbonate	mmol/l	14.9	11.8	18.0	1.55	3.10	Enzymatic
Bilirubin Direct	µmol/l	30.4	24.0	36.8	3.20	6.40	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.78	1.40	2.16	0.19	0.38	
Bilirubin Total	µmol/l	77.4	61.1	93.7	8.15	16.30	Diazo with Sulphanilic Acid
	mg/dl	4.53	3.57	5.49	0.48	0.96	
	µmol/l	80.4	63.5	97.3	8.45	16.90	Dichlorophenyl Diazonium (DPD)
	mg/dl	4.70	3.71	5.69	0.50	0.99	
	µmol/l	78.8	62.3	95.3	8.25	16.50	Diazonium ion
mg/dl	4.61	3.64	5.58	0.49	0.97		

## Roche Cobas C111®

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Calcium	mmol/l	3.05	2.75	3.35	0.15	0.30	Cresolphthalein complexone
	mg/dl	12.2	11.0	13.4	0.60	1.20	
	mmol/l	3.10	2.79	3.41	0.16	0.31	NM-BAPTA
	mg/dl	12.4	11.2	13.6	0.60	1.20	
Chloride	mmol/l	122	113	131	4.50	9.00	ISE indirect
Cholesterol	mmol/l	6.99	6.08	7.90	0.46	0.91	Cholesterol Oxidase
	mg/dl	270	235	305	17.50	35.00	
CK Total	U/l	481	394	568	43.50	87.00	CK-NAC (IFCC) 37°C
	U/l	301	247	355	27.00	54.00	CK-NAC (IFCC) 30°C
	U/l	204	167	241	18.50	37.00	CK-NAC (IFCC) 25°C
Creatinine	µmol/l	377	301	453	38.00	76.00	Alkaline picrate no deproteinization
	mg/dl	4.26	3.40	5.12	0.43	0.86	
	µmol/l	378	302	454	38.00	76.00	Roche Creatinine Plus
	mg/dl	4.27	3.41	5.13	0.43	0.86	
	µmol/l	374	300	448	37.00	74.00	Jaffe rate blanked compensated (-18 µmol/l)
	mg/dl	4.23	3.39	5.07	0.42	0.84	
gamma-GT	U/l	167	142	192	12.50	25.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	132	112	152	10.00	20.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30°C
	U/l	103	88	118	7.50	15.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25°C
Glucose	mmol/l	15.9	13.5	18.3	1.20	2.40	Hexokinase
	mg/dl	287	243	331	22.00	44.00	
HDL - Cholesterol	mmol/l	3.55	3.02	4.08	0.27	0.53	Direct HDL Roche 3rd generation
	mg/dl	137	117	157	10.00	20.00	
	mmol/l	3.58	3.05	4.11	0.27	0.53	Direct HDL Roche 4th Generation
	mg/dl	138	118	158	10.00	20.00	

## Roche Cobas C111®

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
LD (LDH)	U/l	381	324	438	28.50	57.00	L->P IFCC 37°C
	U/l	275	234	316	20.50	41.00	L->P IFCC 30°C
	U/l	193	164	222	14.50	29.00	L->P IFCC 25°C
Magnesium	mmol/l	1.80	1.59	2.01	0.11	0.21	Chlorphosphonazo III
	mg/dl	4.37	3.86	4.88	0.26	0.51	
Phosphate Inorganic	mmol/l	2.27	1.93	2.61	0.17	0.34	Phosphomolybdate enzymatic
	mg/dl	7.04	5.98	8.10	0.53	1.06	
	mmol/l	2.30	1.96	2.64	0.17	0.34	Phosphomolybdate UV
	mg/dl	7.13	6.08	8.18	0.53	1.05	
Potassium	mmol/l	6.42	5.91	6.93	0.26	0.51	ISE method - indirect
Protein Total	g/l	48.4	38.7	58.1	4.85	9.70	Biuret reaction end point
	g/dl	4.84	3.87	5.81	0.49	0.97	
Sodium	mmol/l	158	151	165	3.50	7.00	ISE method - indirect
Triglycerides	mmol/l	2.98	2.50	3.46	0.24	0.48	Lipase/GPO-PAP no correction
	mg/dl	264	221	307	21.50	43.00	
	mmol/l	2.98	2.50	3.46	0.24	0.48	Lipase/GPO-PAP 0.11mmol/l correction
	mg/dl	264	221	307	21.50	43.00	
Urea	mmol/l	19.1	16.3	21.9	1.40	2.80	Urease kinetic
	mg/dl	115	98.0	132	8.50	17.00	
	mmol/l	19.1	16.2	22.0	1.45	2.90	BUN
	mg/dl	53.6	45.6	61.6	4.00	8.00	
Uric Acid (Urate)	mmol/l	0.55	0.48	0.62	0.04	0.07	Uricase peroxidase with ascorbate oxidase
	mg/dl	9.16	7.98	10.3	0.59	1.18	
	mmol/l	0.54	0.47	0.61	0.04	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.12	7.93	10.3	0.60	1.19	

**Roche Cobas C111®**

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

**Range**

Analyte	unit	Target	low	high	1SD	2SD	methods
Uric Acid (Urate)	mmol/l	0.55	0.47	0.62	0.04	0.07	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	9.16	7.96	10.4	0.60	1.20	

## Roche Cobas C311®

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Albumin	g/l	32.2	27.3	37.1	2.45	4.90	Bromocresol Green
	g/dl	3.22	2.73	3.71	0.25	0.49	
	g/l	29.8	25.3	34.3	2.25	4.50	Bromocresol Purple
	g/dl	2.98	2.53	3.43	0.23	0.45	
Alkaline Phosphatase	U/l	283	240	326	21.50	43.00	Roche Integra AMP buffer 37°C
	U/l	220	187	253	16.50	33.00	Roche Integra AMP buffer 30°C
	U/l	181	153	209	14.00	28.00	Roche Integra AMP buffer 25°C
ALT (GPT)	U/l	138	110	166	14.00	28.00	Tris buffer without P5P 37°C
	U/l	102	81	123	10.50	21.00	Tris buffer without P5P 30°C
	U/l	78	62	94	8.00	16.00	Tris buffer without P5P 25°C
Amylase Total	U/l	278	236	320	21.00	42.00	Roche liquid stable pNPG7 37°C
AST (GOT)	U/l	142	114	170	14.00	28.00	Tris buffer without P5P 37°C
	U/l	96	77	115	9.50	19.00	Tris buffer without P5P 30°C
	U/l	68	54	82	7.00	14.00	Tris buffer without P5P 25°C
Bicarbonate	mmol/l	14.5	11.5	17.5	1.50	3.00	Enzymatic
Bilirubin Direct	µmol/l	28.0	22.1	33.9	2.95	5.90	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.64	1.29	1.99	0.18	0.35	
	µmol/l	27.4	21.7	33.1	2.85	5.70	Diazo with Sulphanilic Acid
	mg/dl	1.60	1.27	1.93	0.17	0.33	
	µmol/l	28.0	22.1	33.9	2.95	5.90	Roche JG factored
mg/dl	1.64	1.29	1.99	0.18	0.35		

## Roche Cobas C311®

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

Analyte	unit	Target	Range		1SD	2SD	methods
			low	high			
Bilirubin Total	µmol/l	81.4	64.3	98.5	8.55	17.10	Diazo with Sulphanilic Acid
	mg/dl	4.76	3.76	5.76	0.50	1.00	
	µmol/l	82.7	65.3	100	8.70	17.40	Dichlorophenyl Diazonium (DPD)
	mg/dl	4.84	3.82	5.86	0.51	1.02	
	µmol/l	82.6	65.3	99.9	8.65	17.30	Diazonium ion
	mg/dl	4.83	3.82	5.84	0.51	1.01	
Calcium	mmol/l	3.11	2.80	3.42	0.16	0.31	Cresolphthalein complexone
	mg/dl	12.5	11.2	13.8	0.65	1.30	
	mmol/l	3.13	2.82	3.44	0.16	0.31	NM-BAPTA
	mg/dl	12.5	11.3	13.7	0.60	1.20	
Chloride	mmol/l	118	108	128	5.00	10.00	ISE indirect
Cholesterol	mmol/l	7.00	6.09	7.91	0.46	0.91	Cholesterol Oxidase
	mg/dl	270	235	305	17.50	35.00	
CK Total	U/l	491	403	579	44.00	88.00	CK-NAC (IFCC) 37°C
	U/l	307	252	362	27.50	55.00	CK-NAC (IFCC) 30°C
	U/l	209	171	247	19.00	38.00	CK-NAC (IFCC) 25°C
Creatinine	µmol/l	398	318	478	40.00	80.00	Alkaline picrate no deproteinization
	mg/dl	4.50	3.59	5.41	0.46	0.91	
	µmol/l	399	319	479	40.00	80.00	Roche Creatinine Plus
	mg/dl	4.51	3.60	5.42	0.46	0.91	
	µmol/l	394	315	473	39.50	79.00	Jaffe rate blanked
	mg/dl	4.45	3.56	5.34	0.45	0.89	
	µmol/l	392	314	470	39.00	78.00	Jaffe rate blanked comp. (-26 µmol/l)
	mg/dl	4.43	3.55	5.31	0.44	0.88	
gamma-GT	U/l	157	134	180	11.50	23.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C
	U/l	124	106	142	9.00	18.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 30°C
	U/l	97	83	111	7.00	14.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 25°C



## Roche Cobas C311®

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
gamma-GT	U/l	180	153	207	13.50	27.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	142	121	163	10.50	21.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30°C
	U/l	111	94	128	8.50	17.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25°C
Glucose	mmol/l	15.7	13.3	18.1	1.20	2.40	Hexokinase
	mg/dl	283	240	326	21.50	43.00	
	mmol/l	15.7	13.3	18.1	1.20	2.40	Glucose oxidase
	mg/dl	283	240	326	21.50	43.00	
HDL - Cholesterol	mmol/l	3.55	3.02	4.08	0.27	0.53	Direct HDL Roche 3rd generation
	mg/dl	137	117	157	10.00	20.00	
	mmol/l	3.44	2.92	3.96	0.26	0.52	Direct HDL Roche 4th Generation
	mg/dl	133	113	153	10.00	20.00	
Iron	µmol/l	39.3	32.3	46.3	3.50	7.00	Colorimetric without ppt.
	µg/dl	220	181	259	19.50	39.00	
Lactate	mmol/l	5.54	4.54	6.54	0.50	1.00	Colorimetric Lactate Oxidase
	mg/dl	49.9	40.9	58.9	4.50	9.00	
LD (LDH)	U/l	688	585	791	51.50	103.00	P->L German methods 37°C
	U/l	497	422	572	37.50	75.00	P->L German methods 30°C
	U/l	349	297	401	26.00	52.00	P->L German methods 25°C
	U/l	373	317	429	28.00	56.00	L->P IFCC 37°C
	U/l	269	229	309	20.00	40.00	L->P IFCC 30°C
	U/l	189	161	217	14.00	28.00	L->P IFCC 25°C
	U/l	52	42	62	5.00	10.00	Roche Colorimetric 37°C
Lipase	U/l	52	42	62	5.00	10.00	Roche Colorimetric 37°C
	U/l	52	42	62	5.00	10.00	
Magnesium	mmol/l	1.79	1.57	2.01	0.11	0.22	Xylidyl Blue
	mg/dl	4.35	3.82	4.88	0.27	0.53	

## Roche Cobas C311®

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Magnesium	mmol/l	1.78	1.56	2.00	0.11	0.22	Chlorphosphonazo III
	mg/dl	4.33	3.79	4.87	0.27	0.54	
Phosphate Inorganic	mmol/l	2.23	1.89	2.57	0.17	0.34	Phosphomolybdate enzymatic
	mg/dl	6.91	5.86	7.96	0.53	1.05	
	mmol/l	2.24	1.91	2.57	0.17	0.33	Phosphomolybdate UV
	mg/dl	6.94	5.92	7.96	0.51	1.02	
Potassium	mmol/l	6.45	5.94	6.96	0.26	0.51	ISE method - indirect
Protein Total	g/l	46.3	37.0	55.6	4.65	9.30	Biuret reaction end point
	g/dl	4.63	3.70	5.56	0.47	0.93	
Sodium	mmol/l	161	153	169	4.00	8.00	ISE method - indirect
TIBC	µmol/l	40.4	31.9	48.9	4.25	8.50	FE+UIBC(saturation with iron)
	µg/dl	226	178	274	24.00	48.00	
Triglycerides	mmol/l	2.95	2.48	3.42	0.24	0.47	Lipase/GPO-PAP no correction
	mg/dl	261	219	303	21.00	42.00	
	mmol/l	2.95	2.48	3.42	0.24	0.47	L/G Kinase EP. no correction
	mg/dl	261	219	303	21.00	42.00	
	mmol/l	2.95	2.48	3.42	0.24	0.47	Lipase/Glycerol Dehydrogenase
	mg/dl	261	219	303	21.00	42.00	
Urea	mmol/l	19.6	16.6	22.6	1.50	3.00	Urease kinetic
	mg/dl	118	99.8	136	9.10	18.20	
	mmol/l	19.6	16.7	22.5	1.45	2.90	BUN
	mg/dl	55.0	46.8	63.2	4.10	8.20	
Uric Acid (Urate)	mmol/l	0.55	0.48	0.62	0.04	0.07	Uricase peroxidase with ascorbate oxidase
	mg/dl	9.22	8.01	10.4	0.61	1.21	

**Roche Cobas C311®**

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

**Range**

Analyte	unit	Target	low	high	1SD	2SD	methods
Uric Acid (Urate)	mmol/l	0.55	0.47	0.62	0.04	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.16	7.96	10.4	0.60	1.20	
	mmol/l	0.55	0.48	0.62	0.04	0.07	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	9.24	8.05	10.4	0.60	1.19	

## Roche Cobas c701 / c702 / c711

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Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Albumin	g/l	32.1	27.3	36.9	2.40	4.80	Bromocresol Green
	g/dl	3.21	2.73	3.69	0.24	0.48	
	g/l	28.9	24.6	33.2	2.15	4.30	Bromocresol Purple
	g/dl	2.89	2.46	3.32	0.22	0.43	
	g/l	30.5	25.9	35.1	2.30	4.60	Turbidimetric Assays
	g/dl	3.05	2.59	3.51	0.23	0.46	
Alkaline Phosphatase	U/l	265	225	305	20.00	40.00	Roche Integra AMP buffer 37°C
	U/l	206	175	237	15.50	31.00	Roche Integra AMP buffer 30°C
	U/l	169	144	194	12.50	25.00	Roche Integra AMP buffer 25°C
ALT (GPT)	U/l	139	111	167	14.00	28.00	Tris buffer without P5P 37°C
	U/l	103	82	124	10.50	21.00	Tris buffer without P5P 30°C
	U/l	78	62	94	8.00	16.00	Tris buffer without P5P 25°C
Amylase Pancreatic	U/l	255	217	293	19.00	38.00	Roche EPS Liquid 37°C
Amylase Total	U/l	277	235	319	21.00	42.00	BM/Roche Colorimetric pNPG7 37°C
	U/l	276	234	318	21.00	42.00	Roche liquid stable pNPG7 37°C
AST (GOT)	U/l	142	114	170	14.00	28.00	Tris buffer without P5P 37°C
	U/l	96	77	115	9.50	19.00	Tris buffer without P5P 30°C
	U/l	68	54	82	7.00	14.00	Tris buffer without P5P 25°C
Bicarbonate	mmol/l	15.3	12.1	18.5	1.60	3.20	Enzymatic
Bilirubin Direct	µmol/l	29.4	23.2	35.6	3.10	6.20	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.72	1.36	2.08	0.18	0.36	

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### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Bilirubin Direct	µmol/l	29.6	23.4	35.8	3.10	6.20	Roche JG factored
	mg/dl	1.73	1.37	2.09	0.18	0.36	
	µmol/l	26.2	20.7	31.7	2.75	5.50	Oxidation to Biliverdin/Vanadate
	mg/dl	1.53	1.21	1.85	0.16	0.32	
Bilirubin Total	µmol/l	82.6	65.3	99.9	8.65	17.30	Diazo with Dichloroaniline (DCA)
	mg/dl	4.83	3.82	5.84	0.51	1.01	
	µmol/l	81.4	64.3	98.5	8.55	17.10	Diazo with Sulphanilic Acid
	mg/dl	4.76	3.76	5.76	0.50	1.00	
	µmol/l	81.0	64.0	98.0	8.50	17.00	Dichlorophenyl Diazonium (DPD)
	mg/dl	4.74	3.74	5.74	0.50	1.00	
	µmol/l	81.4	64.3	98.5	8.55	17.10	Diazonium ion
	mg/dl	4.76	3.76	5.76	0.50	1.00	
Calcium	mmol/l	3.07	2.76	3.38	0.16	0.31	Cresolphthalein complexone
	mg/dl	12.3	11.1	13.5	0.60	1.20	
	mmol/l	3.09	2.78	3.40	0.16	0.31	NM-BAPTA
	mg/dl	12.4	11.1	13.7	0.65	1.30	
Chloride	mmol/l	118	109	127	4.50	9.00	ISE indirect
Cholesterol	mmol/l	6.95	6.05	7.85	0.45	0.90	Cholesterol Oxidase
	mg/dl	268	234	302	17.00	34.00	
Cholinesterase	U/l	5001	4001	6001	500.00	1000.00	Colorimetric Butyrylthiocholine 37°C
CK Total	U/l	478	392	564	43.00	86.00	CK-NAC (IFCC) 37°C
	U/l	299	245	353	27.00	54.00	CK-NAC (IFCC) 30°C
	U/l	203	167	239	18.00	36.00	CK-NAC (IFCC) 25°C
Creatinine	µmol/l	394	315	473	39.50	79.00	Roche Creatinine Plus
	mg/dl	4.45	3.56	5.34	0.45	0.89	

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Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

Analyte	unit	Target	Range		1SD	2SD	methods
			low	high			
Creatinine	µmol/l	388	310	466	39.00	78.00	Jaffe rate blanked
	mg/dl	4.38	3.50	5.26	0.44	0.88	
	µmol/l	384	307	461	38.50	77.00	Jaffe rate blanked comp. (-26 µmol/l)
	mg/dl	4.34	3.47	5.21	0.44	0.87	
gamma-GT	U/l	149	127	171	11.00	22.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C
	U/l	117	100	134	8.50	17.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 30°C
	U/l	92	78	106	7.00	14.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 25°C
	U/l	173	147	199	13.00	26.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	136	116	156	10.00	20.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30°C
	U/l	107	91	123	8.00	16.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25°C
Glucose	mmol/l	15.5	13.2	17.8	1.15	2.30	Hexokinase
	mg/dl	279	238	320	20.50	41.00	
HDL - Cholesterol	mmol/l	3.47	2.95	3.99	0.26	0.52	Direct HDL Roche 3rd generation
	mg/dl	134	114	154	10.00	20.00	
	mmol/l	3.49	2.97	4.01	0.26	0.52	Direct HDL Roche 4th Generation
	mg/dl	135	115	155	10.00	20.00	
Iron	µmol/l	38.3	31.4	45.2	3.45	6.90	Colorimetric without ppt.
	µg/dl	214	176	252	19.00	38.00	
Lactate	mmol/l	5.42	4.44	6.40	0.49	0.98	Colorimetric Lactate Oxidase
	mg/dl	48.8	40.0	57.6	4.40	8.80	
LD (LDH)	U/l	368	313	423	27.50	55.00	L->P IFCC 37°C
	U/l	266	226	306	20.00	40.00	L->P IFCC 30°C
	U/l	187	159	215	14.00	28.00	L->P IFCC 25°C
Lithium	mmol/l	2.07	1.82	2.32	0.13	0.25	Spectrophotometric
	mg/dl	1.44	1.26	1.62	0.09	0.18	

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Analyte	unit	Target	Range		1SD	2SD	methods
			low	high			
Magnesium	mmol/l	1.77	1.56	1.98	0.11	0.21	Xylidyl Blue
	mg/dl	4.30	3.79	4.81	0.26	0.51	
	mmol/l	1.78	1.57	1.99	0.11	0.21	Chlorphosphonazo III
	mg/dl	4.33	3.82	4.84	0.26	0.51	
Phosphate Inorganic	mmol/l	2.20	1.87	2.53	0.17	0.33	Phosphomolybdate UV
	mg/dl	6.82	5.80	7.84	0.51	1.02	
Potassium	mmol/l	6.44	5.92	6.96	0.26	0.52	ISE method - indirect
Protein Total	g/l	46.2	36.9	55.5	4.65	9.30	Biuret reaction end point
	g/dl	4.62	3.69	5.55	0.47	0.93	
Sodium	mmol/l	161	153	169	4.00	8.00	ISE method - indirect
TIBC	μmol/l	42.8	33.8	51.8	4.50	9.00	FE+UIBC(saturation with iron)
	μg/dl	239	189	289	25.00	50.00	
	μmol/l	41.3	32.6	50.0	4.35	8.70	Calculated from Transferrin
	μg/dl	231	182	280	24.50	49.00	
Triglycerides	mmol/l	2.91	2.45	3.37	0.23	0.46	Lipase/GPO-PAP no correction
	mg/dl	258	217	299	20.50	41.00	
	mmol/l	2.93	2.46	3.40	0.24	0.47	L/G Kinase EP. no correction
	mg/dl	259	218	300	20.50	41.00	
Urea	mmol/l	19.0	16.2	21.8	1.40	2.80	Urease kinetic
	mg/dl	114	97.4	131	8.30	16.60	
	mmol/l	19.0	16.2	21.8	1.40	2.80	BUN
	mg/dl	53.3	45.3	61.3	4.00	8.00	
Uric Acid (Urate)	mmol/l	0.53	0.47	0.60	0.03	0.07	Uricase peroxidase with ascorbate oxidase
	mg/dl	8.97	7.81	10.1	0.58	1.16	
	mmol/l	0.54	0.47	0.61	0.04	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.04	7.86	10.2	0.59	1.18	

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**Range**

Analyte	unit	Target	low	high	1SD	2SD	methods
Uric Acid (Urate)	mmol/l	0.54	0.47	0.61	0.04	0.07	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	9.00	7.83	10.2	0.59	1.17	



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Albumin	g/l	31.5	26.8	36.2	2.35	4.70	Bromocresol Green
	g/dl	3.15	2.68	3.62	0.24	0.47	
Alkaline Phosphatase	U/l	533	453	613	40.00	80.00	Diethanolamine buffer DEA 37°C
	U/l	374	318	430	28.00	56.00	AMP optimised to IFCC 37°C
ALT (GPT)	U/l	145	116	174	14.50	29.00	Tris buffer without P5P 37°C
Amylase Pancreatic	U/l	301	256	346	22.50	45.00	Randox Liquid Ethylidene pNPG7 37°C
Amylase Total	U/l	309	263	355	23.00	46.00	Randox Liquid Ethylidene pNPG7 37°C
AST (GOT)	U/l	148	118	178	15.00	30.00	Tris buffer without P5P 37°C
Bicarbonate	mmol/l	17.1	13.6	20.6	1.75	3.50	Enzymatic
Bile Acids	µmol/l	46.7	37.4	56.0	4.65	9.30	5th Generation Colorimetric
Bilirubin Direct	µmol/l	30.4	24.0	36.8	3.20	6.40	Diazo with Sulphanilic Acid
	mg/dl	1.78	1.40	2.16	0.19	0.38	
	µmol/l	32.8	25.9	39.7	3.45	6.90	Oxidation to Biliverdin/Vanadate
	mg/dl	1.92	1.52	2.32	0.20	0.40	
Bilirubin Total	µmol/l	91.9	72.6	111	9.65	19.30	Diazo with Sulphanilic Acid
	mg/dl	5.38	4.25	6.51	0.57	1.13	
	µmol/l	103	81.5	125	10.75	21.50	Oxidation to Biliverdin/Vanadate
	mg/dl	6.03	4.77	7.29	0.63	1.26	
Calcium	mmol/l	3.09	2.78	3.40	0.16	0.31	Arsenazo III
	mg/dl	12.4	11.1	13.7	0.65	1.30	
Chloride	mmol/l	116	107	125	4.50	9.00	ISE direct

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Analyte	unit	Target	low	high	1SD	2SD	methods
Cholesterol	mmol/l	7.60	6.61	8.59	0.50	0.99	Cholesterol Oxidase
	mg/dl	293	255	331	19.00	38.00	
CK Total	U/l	524	430	618	47.00	94.00	CK-NAC substrate start (DGKC) 37°C
	U/l	562	461	663	50.50	101.00	
Creatinine	µmol/l	345	276	414	34.50	69.00	Alkaline picrate no deproteinization
	mg/dl	3.90	3.12	4.68	0.39	0.78	
	µmol/l	389	311	467	39.00	78.00	Enzymatic UV method
	mg/dl	4.40	3.51	5.29	0.45	0.89	
gamma-GT	U/l	181	154	208	13.50	27.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
Glucose	mmol/l	16.3	13.8	18.8	1.25	2.50	Hexokinase
	mg/dl	294	249	339	22.50	45.00	
	mmol/l	16.4	13.9	18.9	1.25	2.50	Glucose oxidase
	mg/dl	296	250	342	23.00	46.00	
Iron	µmol/l	39.1	32.1	46.1	3.50	7.00	Colorimetric without ppt.
	µg/dl	219	179	259	20.00	40.00	
Lactate	mmol/l	5.31	4.35	6.27	0.48	0.96	Colorimetric Lactate Oxidase
	mg/dl	47.8	39.2	56.4	4.30	8.60	
LD (LDH)	U/l	734	624	844	55.00	110.00	P->L German methods 37°C
	U/l	366	311	421	27.50	55.00	
Lipase	U/l	86	69	103	8.50	17.00	Randox Colorimetric 37°C
Lithium	mmol/l	2.15	1.89	2.41	0.13	0.26	Colorimetric
	mg/dl	1.49	1.31	1.67	0.09	0.18	
Magnesium	mmol/l	1.78	1.57	1.99	0.11	0.21	Xylidyl Blue
	mg/dl	4.33	3.82	4.84	0.26	0.51	
Phosphate Inorganic	mmol/l	2.32	1.97	2.67	0.18	0.35	Phosphomolybdate UV
	mg/dl	7.19	6.11	8.27	0.54	1.08	

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### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Potassium	mmol/l	6.55	6.03	7.07	0.26	0.52	Enzymatic
	mmol/l	6.26	5.76	6.76	0.25	0.50	ISE method - direct
Protein Total	g/l	48.0	38.4	57.6	4.80	9.60	Biuret reaction end point
	g/dl	4.80	3.84	5.76	0.48	0.96	
Sodium	mmol/l	155	147	163	4.00	8.00	Enzymatic
	mmol/l	158	150	166	4.00	8.00	ISE method - direct
TIBC	µmol/l	45.3	35.8	54.8	4.75	9.50	Direct Colorimetric
	µg/dl	253	200	306	26.50	53.00	
Triglycerides	mmol/l	3.02	2.54	3.50	0.24	0.48	Lipase/GPO-PAP no correction
	mg/dl	267	225	309	21.00	42.00	
Urea	mmol/l	19.6	16.7	22.5	1.45	2.90	Urease kinetic
	mg/dl	118	100	136	9.00	18.00	
	mmol/l	19.6	16.7	22.5	1.45	2.90	BUN
	mg/dl	55.0	46.8	63.2	4.10	8.20	
Uric Acid (Urate)	mmol/l	0.57	0.49	0.64	0.04	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.49	8.27	10.7	0.61	1.22	
	mmol/l	0.57	0.50	0.65	0.04	0.07	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	9.61	8.37	10.9	0.62	1.24	

**SIEMENS ATELLICA / ADVIA 1200/1650/1800/2400**
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**Range**

Analyte	unit	Target	low	high	1SD	2SD	methods
Albumin	g/l	30.3	25.8	34.8	2.25	4.50	Bromocresol Green
	g/dl	3.03	2.58	3.48	0.23	0.45	
	g/l	29.4	25.0	33.8	2.20	4.40	Bromocresol Purple
	g/dl	2.94	2.50	3.38	0.22	0.44	
Alkaline Phosphatase	U/l	305	259	351	23.00	46.00	AMP optimised to IFCC 37°C
ALT (GPT)	U/l	159	127	191	16.00	32.00	Tris buffer without P5P 37°C
Amylase Total	U/l	295	250	340	22.50	45.00	Siemens - blocked pNPG7 37°C
AST (GOT)	U/l	155	124	186	15.50	31.00	Tris buffer without P5P 37°C
Bicarbonate	mmol/l	16.4	13.0	19.8	1.70	3.40	Enzymatic
Bile Acids	µmol/l	49.4	39.5	59.3	4.95	9.90	Enzymatic Colorimetric
Bilirubin Direct	µmol/l	29.5	23.3	35.7	3.10	6.20	Oxidation to Biliverdin/Vanadate
	mg/dl	1.73	1.36	2.10	0.19	0.37	
Bilirubin Total	µmol/l	97.6	77.1	118	10.25	20.50	Oxidation to Biliverdin/Vanadate
	mg/dl	5.71	4.51	6.91	0.60	1.20	
Calcium	mmol/l	3.17	2.85	3.49	0.16	0.32	Cresolphthalein complexone
	mg/dl	12.7	11.4	14.0	0.65	1.30	
	mmol/l	3.03	2.73	3.33	0.15	0.30	Arsenazo III
	mg/dl	12.1	10.9	13.3	0.60	1.20	
Chloride	mmol/l	121	111	131	5.00	10.00	ISE indirect
Cholesterol	mmol/l	7.14	6.22	8.06	0.46	0.92	Cholesterol Oxidase
	mg/dl	276	240	312	18.00	36.00	

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Analyte	unit	Target	low	high	1SD	2SD	methods
CK Total	U/l	512	420	604	46.00	92.00	CK-NAC (IFCC) 37°C
Creatinine	µmol/l	378	302	454	38.00	76.00	Enzymatic UV method
	mg/dl	4.27	3.41	5.13	0.43	0.86	
	µmol/l	370	296	444	37.00	74.00	Jaffe rate blanked comp. (-26 µmol/l)
	mg/dl	4.18	3.34	5.02	0.42	0.84	
gamma-GT	U/l	175	148	202	13.50	27.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
Glucose	mmol/l	15.0	12.8	17.2	1.10	2.20	Hexokinase
	mg/dl	270	231	309	19.50	39.00	
	mmol/l	15.1	12.8	17.4	1.15	2.30	Glucose oxidase
	mg/dl	272	231	313	20.50	41.00	
HDL - Cholesterol	mmol/l	2.29	1.95	2.63	0.17	0.34	Direct Clearance Method
	mg/dl	88.4	75.3	102	6.55	13.10	
Iron	µmol/l	39.1	32.0	46.2	3.55	7.10	Colorimetric without ppt.
	µg/dl	219	179	259	20.00	40.00	
Lactate	mmol/l	5.48	4.49	6.47	0.50	0.99	Colorimetric Lactate Oxidase
	mg/dl	49.4	40.5	58.3	4.45	8.90	
LD (LDH)	U/l	707	601	813	53.00	106.00	P->L German methods 37°C
	U/l	371	315	427	28.00	56.00	Siemens Dimension L-P Non IFCC 37°C
	U/l	371	315	427	28.00	56.00	L->P IFCC 37°C
Lipase	U/l	79	63	95	8.00	16.00	Other Colorimetric 37°C
Lithium	mmol/l	2.08	1.83	2.33	0.13	0.25	Spectrophotometric
	mg/dl	1.44	1.27	1.61	0.09	0.17	
Magnesium	mmol/l	1.76	1.55	1.97	0.11	0.21	Xylidyl Blue
	mg/dl	4.28	3.77	4.79	0.26	0.51	
Phosphate Inorganic	mmol/l	2.28	1.94	2.62	0.17	0.34	Phosphomolybdate UV
	mg/dl	7.07	6.01	8.13	0.53	1.06	


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**Range**

Analyte	unit	Target	low	high	1SD	2SD	methods
Potassium	mmol/l	6.42	5.90	6.94	0.26	0.52	ISE method - indirect
Protein Total	g/l	45.3	36.2	54.4	4.55	9.10	Biuret reaction end point
	g/dl	4.53	3.62	5.44	0.46	0.91	
Sodium	mmol/l	160	152	168	4.00	8.00	ISE method - indirect
TIBC	μmol/l	45.0	35.6	54.4	4.70	9.40	FE+UIBC(saturation with iron)
	μg/dl	252	199	305	26.50	53.00	
	μmol/l	44.8	35.4	54.2	4.70	9.40	Direct Colorimetric
	μg/dl	250	198	302	26.00	52.00	
	μmol/l	37.3	29.5	45.1	3.90	7.80	
Triglycerides	mmol/l	2.98	2.50	3.46	0.24	0.48	Lipase/GPO-PAP no correction
	mg/dl	264	221	307	21.50	43.00	
Urea	mmol/l	19.6	16.7	22.5	1.45	2.90	Urease kinetic
	mg/dl	118	100	136	9.00	18.00	
	mmol/l	19.6	16.7	22.5	1.45	2.90	BUN
	mg/dl	55.0	46.8	63.2	4.10	8.20	
Uric Acid (Urate)	mmol/l	0.56	0.49	0.63	0.04	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.39	8.16	10.6	0.62	1.23	
	mmol/l	0.57	0.50	0.64	0.04	0.07	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	9.58	8.33	10.8	0.63	1.25	

## SIEMENS DIMENSION EXL®

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Albumin	g/l	29.8	25.3	34.3	2.25	4.50	Bromocresol Purple
	g/dl	2.98	2.53	3.43	0.23	0.45	
Alkaline Phosphatase	U/l	313	266	360	23.50	47.00	Siemens Dimension AMP buffer 37°C
	U/l	311	264	358	23.50	47.00	AMP optimised to IFCC 37°C
ALT (GPT)	U/l	154	123	185	15.50	31.00	Tris buffer with P5P 37°C
	U/l	147	118	176	14.50	29.00	Tris buffer with P5P NVKC 37°C
	U/l	154	123	185	15.50	31.00	Siemens Dade Standard Non IFCC Correlated 37°C
Amylase Total	U/l	346	294	398	26.00	52.00	Siemens 2-chloro-pNPG3 37°C
AST (GOT)	U/l	182	145	219	18.50	37.00	Tris buffer with P5P 37°C
	U/l	187	149	225	19.00	38.00	Tris buffer with P5P NVKC 37°C
	U/l	186	148	224	19.00	38.00	Siemens Dade Standard Non IFCC Correlated 37°C
Bicarbonate	mmol/l	16.4	13.0	19.8	1.70	3.40	Enzymatic
Bilirubin Total	µmol/l	86.9	68.6	105	9.15	18.30	Diazo with Sulphanilic Acid
	mg/dl	5.08	4.01	6.15	0.54	1.07	
Calcium	mmol/l	3.06	2.75	3.37	0.16	0.31	Cresolphthalein complexone
	mg/dl	12.3	11.0	13.6	0.65	1.30	
Chloride	mmol/l	118	109	127	4.50	9.00	ISE indirect
Cholesterol	mmol/l	6.79	5.91	7.67	0.44	0.88	Cholesterol Oxidase
	mg/dl	262	228	296	17.00	34.00	
	mmol/l	6.86	5.97	7.75	0.45	0.89	Dimension-Siemens reagents
	mg/dl	265	230	300	17.50	35.00	

## SIEMENS DIMENSION EXL®

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
CK Total	U/l	474	389	559	42.50	85.00	CK-NAC (IFCC) 37°C
Creatinine	μmol/l	386	309	463	38.50	77.00	Alkaline picrate no deproteinization
	mg/dl	4.36	3.49	5.23	0.44	0.87	
	μmol/l	391	313	469	39.00	78.00	Jaffe rate blanked
	mg/dl	4.42	3.54	5.30	0.44	0.88	
gamma-GT	μmol/l	387	310	464	38.50	77.00	IDMS traceable
	mg/dl	4.37	3.50	5.24	0.44	0.87	
gamma-GT	U/l	179	153	205	13.00	26.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	196	167	225	14.50	29.00	Siemens Dimension (non IFCC) 37°C
Glucose	mmol/l	15.4	13.1	17.7	1.15	2.30	Hexokinase
	mg/dl	278	236	320	21.00	42.00	
HDL - Cholesterol	mmol/l	2.77	2.35	3.19	0.21	0.42	Direct HDL PEGME
	mg/dl	107	90.7	123	8.15	16.30	
Iron	μmol/l	37.6	30.8	44.4	3.40	6.80	Colorimetric without ppt.
	μg/dl	210	172	248	19.00	38.00	
LD (LDH)	U/l	349	297	401	26.00	52.00	L->P IFCC 37°C
Lipase	U/l	250	200	300	25.00	50.00	Colorimetric Siemens Dimension (LIPL Kit) 37°C
Magnesium	mmol/l	1.77	1.55	1.99	0.11	0.22	Methylthymol blue
	mg/dl	4.30	3.77	4.83	0.27	0.53	
Phosphate Inorganic	mmol/l	2.28	1.94	2.62	0.17	0.34	Phosphomolybdate UV
	mg/dl	7.07	6.01	8.13	0.53	1.06	
Potassium	mmol/l	6.40	5.88	6.92	0.26	0.52	ISE method - indirect
Protein Total	g/l	47.6	38.1	57.1	4.75	9.50	Biuret reaction end point
	g/dl	4.76	3.81	5.71	0.48	0.95	
Sodium	mmol/l	160	152	168	4.00	8.00	ISE method - indirect



**SIEMENS DIMENSION EXL®****ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)**

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

**Range**

Analyte	unit	Target	low	high	1SD	2SD	methods
Triglycerides	mmol/l	2.89	2.43	3.35	0.23	0.46	Lipase/GPO-PAP no correction
	mg/dl	256	215	297	20.50	41.00	
	mmol/l	2.91	2.44	3.38	0.24	0.47	L/G Kinase EP. no correction
	mg/dl	258	216	300	21.00	42.00	
Urea	mmol/l	19.7	16.8	22.6	1.45	2.90	Urease kinetic
	mg/dl	118	101	135	8.50	17.00	
	mmol/l	19.7	16.7	22.7	1.50	3.00	BUN
	mg/dl	55.3	47.0	63.6	4.15	8.30	
Uric Acid (Urate)	mmol/l	0.56	0.48	0.63	0.04	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.34	8.13	10.6	0.61	1.21	
	mmol/l	0.55	0.47	0.62	0.04	0.07	Spectrophotometric at 280-290
	mg/dl	9.16	7.96	10.4	0.60	1.20	

**SIEMENS DIMENSION RxL/Max/Xpand®**
**ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)**

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

**Range**

Analyte	unit	Target	low	high	1SD	2SD	methods
Albumin	g/l	30.9	26.3	35.5	2.30	4.60	Bromocresol Green
	g/dl	3.09	2.63	3.55	0.23	0.46	
	g/l	29.6	25.2	34.0	2.20	4.40	Bromocresol Purple
	g/dl	2.96	2.52	3.40	0.22	0.44	
Alkaline Phosphatase	U/l	307	261	353	23.00	46.00	Siemens Dimension AMP buffer 37°C
	U/l	318	270	366	24.00	48.00	AMP optimised to IFCC 37°C
ALT (GPT)	U/l	152	122	182	15.00	30.00	Tris buffer with P5P 37°C
	U/l	155	124	186	15.50	31.00	Siemens Dade Standard Non IFCC Correlated 37°C
Amylase Total	U/l	349	297	401	26.00	52.00	Siemens 2-chloro-pNPG3 37°C
AST (GOT)	U/l	181	145	217	18.00	36.00	Tris buffer with P5P 37°C
	U/l	190	152	228	19.00	38.00	Siemens Dade Standard Non IFCC Correlated 37°C
Bilirubin Total	µmol/l	86.1	68.0	104	9.05	18.10	Diazo with Sulphanilic Acid
	mg/dl	5.04	3.98	6.10	0.53	1.06	
Calcium	mmol/l	3.03	2.73	3.33	0.15	0.30	Cresolphthalein complexone
	mg/dl	12.1	10.9	13.3	0.60	1.20	
Chloride	mmol/l	119	110	128	4.50	9.00	ISE indirect
Cholesterol	mmol/l	6.89	6.00	7.78	0.45	0.89	Dimension-Siemens reagents
	mg/dl	266	232	300	17.00	34.00	
CK Total	U/l	473	388	558	42.50	85.00	CK-NAC (IFCC) 37°C
Creatinine	µmol/l	378	303	453	37.50	75.00	Alkaline picrate no deproteinization
	mg/dl	4.27	3.42	5.12	0.43	0.85	

**SIEMENS DIMENSION RxL/Max/Xpand®**
**ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)**

Lot. No. 1072UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2023-02-28

**Range**

Analyte	unit	Target	low	high	1SD	2SD	methods
Creatinine	µmol/l	378	303	453	37.50	75.00	Enzymatic UV method
	mg/dl	4.27	3.42	5.12	0.43	0.85	
	µmol/l	390	312	468	39.00	78.00	IDMS traceable
	mg/dl	4.41	3.53	5.29	0.44	0.88	
gamma-GT	U/l	198	168	228	15.00	30.00	Siemens Dimension (non IFCC) 37°C
Glucose	mmol/l	15.4	13.1	17.7	1.15	2.30	Hexokinase
	mg/dl	278	236	320	21.00	42.00	
HDL - Cholesterol	mmol/l	2.94	2.50	3.38	0.22	0.44	Direct HDL PPD
	mg/dl	113	96.5	130	8.25	16.50	
	mmol/l	2.85	2.42	3.28	0.22	0.43	Direct HDL PEGME
	mg/dl	110	93.4	127	8.30	16.60	
Iron	µmol/l	37.5	30.7	44.3	3.40	6.80	Colorimetric without ppt.
	µg/dl	210	172	248	19.00	38.00	
LD (LDH)	U/l	348	296	400	26.00	52.00	L->P IFCC 37°C
Lipase	U/l	246	197	295	24.50	49.00	Colorimetric Siemens Dimension (LIPL Kit) 37°C
Magnesium	mmol/l	1.78	1.57	1.99	0.11	0.21	Methylthymol blue
	mg/dl	4.33	3.82	4.84	0.26	0.51	
Phosphate Inorganic	mmol/l	2.25	1.92	2.58	0.17	0.33	Phosphomolybdate enzymatic
	mg/dl	6.98	5.95	8.01	0.52	1.03	
	mmol/l	2.23	1.89	2.57	0.17	0.34	Phosphomolybdate UV
	mg/dl	6.91	5.86	7.96	0.53	1.05	
Potassium	mmol/l	6.35	5.84	6.86	0.26	0.51	ISE method - indirect
Protein Total	g/l	47.3	37.9	56.7	4.70	9.40	Biuret reaction end point
	g/dl	4.73	3.79	5.67	0.47	0.94	
Sodium	mmol/l	160	152	168	4.00	8.00	ISE method - indirect



SIEMENS DIMENSION RxL/Max/Xpand®		ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)					
Lot. No. 1072UE Cat. No. HE1532 / HS2611							
Size 20 x 5ml / 5 x 5ml		Expiry 2023-02-28		Range			
Analyte	unit	Target	low	high	1SD	2SD	methods
Triglycerides	mmol/l	2.90	2.44	3.36	0.23	0.46	Lipase/GPO-PAP no correction
	mg/dl	257	216	298	20.50	41.00	
	mmol/l	2.95	2.48	3.42	0.24	0.47	Lipase/Glycerol Dehydrogenase
	mg/dl	261	219	303	21.00	42.00	
Urea	mmol/l	19.6	16.7	22.5	1.45	2.90	Urease end point
	mg/dl	118	100	136	9.00	18.00	
	mmol/l	19.6	16.7	22.5	1.45	2.90	Urease kinetic
	mg/dl	118	100	136	9.00	18.00	
	mmol/l	19.6	16.7	22.5	1.45	2.90	BUN
	mg/dl	55.0	46.8	63.2	4.10	8.20	
Uric Acid (Urate)	mmol/l	0.55	0.47	0.62	0.04	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.16	7.96	10.4	0.60	1.20	
	mmol/l	0.55	0.48	0.62	0.04	0.07	Spectrophotometric at 280-290
	mg/dl	9.22	8.03	10.4	0.60	1.19	