RANDOX 0120 CE

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

CAT. NO. HE1532 / HS2611 **LOT NO.** 791UE
SIZE: 20 x 5ml / 5 x 5ml **EXP:** 2019-05

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 (25-30µl) 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 be allowed to stand for 1 hour at +15°C to +25°C before measurement.
Bilirubin in the serum is light sensitive and it is recommended that the serum be 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.

PREPARATION FOR USE
The Human Assayed Multi-sera is supplied lyophilised.

1. 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.

2. Refer to the Control section of the individual analyser application.

3. 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

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 ±2S.D. This results in an assayed serum with extremely accurate values, which may be confidently used by laboratories to ensure the accuracy of their methods.

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

NOTES

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(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.

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RANDOX

ABBOTT AEROSET®

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Albumin	g/l	28.6	24.3	32.9	2.15	4.30	Bromocresol Green
	g/dl	2.86	2.43	3.29	0.22	0.43	
ALT (GPT)	U/l	136	108	164	14.00	28.00	Tris buffer without P5P 37℃
AST (GOT)	U/l	156	125	187	15.50	31.00	Tris buffer without P5P 37℃
Bilirubin Direct	µmol/l	29.0	22.9	35.1	3.05	6.10	Diazo with Dichloroaniline (DCA)
	mg/dl	1.70	1.34	2.06	0.18	0.36	
Bilirubin Total	µmol/l	86.6	68.4	105	9.10	18.20	Diazo with Dichloroaniline (DCA)
	mg/dl	5.07	4.00	6.14	0.54	1.07	
Calcium	mmol/l	3.18	2.86	3.50	0.16	0.32	Cresolphthalein complexone
	mg/dl	12.7	11.5	13.9	0.60	1.20	
	mmol/l	3.18	2.86	3.50	0.16	0.32	Arsenazo III
	mg/dl	12.7	11.5	13.9	0.60	1.20	
Cholesterol	mmol/l	7.37	6.41	8.33	0.48	0.96	Cholesterol Oxidase
	mg/dl	284	247	321	18.50	37.00	
Chloride	mmol/l	115	106	124	4.50	9.00	ISE direct
CK Total	U/l	550	451	649	49.50	99.00	CK-NAC (IFCC) 37℃
Creatinine	µmol/l	365	292	438	36.50	73.00	Alkaline picrate no deproteinization
	mg/dl	4.12	3.30	4.94	0.41	0.82	
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	2.57	2.18	2.96	0.20	0.39	HDL - Ultra
	mg/dl	99.2	84.1	114	7.55	15.10	

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			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Iron	µmol/l	37.6	30.9	44.3	3.35	6.70	Colorimetric without ppt.
	µg/dl	210	173	247	18.50	37.00	
Phosphate Inorganic	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	6.06	5.58	6.54	0.24	0.48	ISE method - direct
Protein Total	g/l	45.7	36.6	54.8	4.55	9.10	Biuret reaction end point
	g/dl	4.57	3.66	5.48	0.46	0.91	
Sodium	mmol/l	158	151	165	3.50	7.00	ISE method - direct
Triglycerides	mmol/l	2.90	2.43	3.37	0.24	0.47	Lipase/GPO-PAP no correction
	mg/dl	257	215	299	21.00	42.00	
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	0.58	0.50	0.65	0.04	0.08	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	9.68	8.42	10.9	0.63	1.26	
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	
	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	

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			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Albumin	g/l	28.3	24.0	32.6	2.15	4.30	Bromocresol Green
	g/dl	2.83	2.40	3.26	0.22	0.43	
	g/l	26.3	22.3	30.3	2.00	4.00	Bromocresol Purple
	g/dl	2.63	2.23	3.03	0.20	0.40	
Alkaline Phosphatase	U/l	311	265	357	23.00	46.00	AMP optimised to IFCC 37℃
	U/l	310	264	356	23.00	46.00	AMP non-optimised 37℃
ALT (GPT)	U/l	133	106	160	13.50	27.00	Tris buffer without P5P 37℃
Amylase Pancreatic	U/l	257	219	295	19.00	38.00	Immunoinhibition EPS substrate 37℃
Amylase Total	U/l	315	267	363	24.00	48.00	Randox liquid stable pNPG7 37℃
	U/l	317	270	364	23.50	47.00	Abbott Architect Non-IFCC Cal. 37℃
	U/l	354	301	407	26.50	53.00	Abbott Architect IFCC Cal. 37℃
AST (GOT)	U/l	165	132	198	16.50	33.00	Tris buffer without P5P 37℃
Bile Acids	µmol/l	47.5	38.0	57.0	4.75	9.50	Enzymatic Colorimetric
Bicarbonate	mmol/l	14.7	11.7	17.7	1.50	3.00	Enzymatic
Bilirubin Direct	µmol/l	26.6	21.0	32.2	2.80	5.60	Diazo with Sulphanilic Acid
	mg/dl	1.56	1.23	1.89	0.17	0.33	
	µmol/l	26.7	21.1	32.3	2.80	5.60	Diazo with Dichloroaniline (DCA)
	mg/dl	1.56	1.23	1.89	0.17	0.33	
Bilirubin Total	µmol/l	83.7	66.1	101	8.80	17.60	Diazo with Dichloroaniline (DCA)
	mg/dl	4.90	3.87	5.93	0.52	1.03	
	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	

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Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Bilirubin Total	µmol/l	85.2	67.3	103	8.95	17.90	Dichlorophenyl Diazonium (DPD)
	mg/dl	4.98	3.94	6.02	0.52	1.04	
	µmol/l	82.9	65.5	100	8.70	17.40	Diazonium ion
	mg/dl	4.85	3.83	5.87	0.51	1.02	
Calcium	mmol/l	3.16	2.84	3.48	0.16	0.32	Arsenazo III
	mg/dl	12.7	11.4	14.0	0.65	1.30	
Cholesterol	mmol/l	7.39	6.43	8.35	0.48	0.96	Cholesterol Oxidase
	mg/dl	285	248	322	18.50	37.00	
Chloride	mmol/l	116	106	126	5.00	10.00	ISE indirect
Cholinesterase	U/l	5769	4615	6923	577.00	1154.00	Colorimetric Butyrylthiocholine 37℃
	U/l	5885	4708	7062	588.50	1177.00	Agappe - DGKC/Butyrylthiocholine 37℃
CK Total	U/l	576	472	680	52.00	104.00	CK-NAC serum start (DGKC) 37℃
	U/l	566	464	668	51.00	102.00	CK-NAC substrate start (DGKC) 37℃
	U/l	548	449	647	49.50	99.00	CK-NAC (IFCC) 37℃
Copper	µmol/l	19.6	15.7	23.5	1.95	3.90	Colorimetric
	µg/dl	125	99.9	150	12.55	25.10	
Creatinine	µmol/l	387	310	464	38.50	77.00	Alkaline picrate no deproteinization
	mg/dl	4.37	3.50	5.24	0.44	0.87	
	µmol/l	382	305	459	38.50	77.00	Randox Enzymatic UV method
	mg/dl	4.32	3.45	5.19	0.44	0.87	
	µmol/l	381	305	457	38.00	76.00	Creatinine PAP method
	mg/dl	4.31	3.45	5.17	0.43	0.86	
	µmol/l	390	312	468	39.00	78.00	Jaffe rate blanked
	mg/dl	4.41	3.53	5.29	0.44	0.88	

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			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Creatinine	µmol/l	388	310	466	39.00	78.00	IDMS traceable
	mg/dl	4.38	3.50	5.26	0.44	0.88	
gamma-GT	U/l	161	136	186	12.50	25.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 37℃
	U/l	160	136	184	12.00	24.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37℃
	U/l	154	131	177	11.50	23.00	DCL gamma glutamyl-3-carboxy-4-nitroanilide 37℃
Glucose	mmol/l	16.2	13.8	18.6	1.20	2.40	Glucose dehydrogenase
	mg/dl	292	249	335	21.50	43.00	
	mmol/l	15.9	13.5	18.3	1.20	2.40	Hexokinase
	mg/dl	287	243	331	22.00	44.00	
	mmol/l	15.5	13.2	17.8	1.15	2.30	Glucose oxidase
	mg/dl	279	238	320	20.50	41.00	
HDL - Cholesterol	mmol/l	2.69	2.29	3.09	0.20	0.40	Direct HDL PPD
	mg/dl	104	88.4	120	7.80	15.60	
	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	
	mmol/l	2.64	2.25	3.03	0.20	0.39	HDL - Ultra
	mg/dl	102	86.9	117	7.55	15.10	
Iron	µmol/l	39.3	32.2	46.4	3.55	7.10	Colorimetric with ppt.
	µg/dl	220	180	260	20.00	40.00	
	µmol/l	38.9	31.9	45.9	3.50	7.00	Colorimetric without ppt.
	µg/dl	217	178	256	19.50	39.00	
Lactate	mmol/l	5.68	4.65	6.71	0.52	1.03	Colorimetric Lactate Oxidase
	mg/dl	51.2	41.9	60.5	4.65	9.30	
LD (LDH)	U/l	374	318	430	28.00	56.00	L->P 37℃
	U/l	747	635	859	56.00	112.00	P->L German methods 37℃

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Size 20 x 5ml / 5 x 5ml Expiry 2019-05

Analyte	unit	Target	Range low	Range high	1SD	2SD	methods
LD (LDH)	U/l	374	318	430	28.00	56.00	L->P IFCC 37℃
Lipase	U/l	69	56	82	6.50	13.00	Other Colorimetric 37℃
Lithium	mmol/l	2.05	1.80	2.30	0.13	0.25	Spectrophotometric
	mg/dl	1.42	1.25	1.59	0.09	0.17	
Magnesium	mmol/l	1.81	1.59	2.03	0.11	0.22	Arsenazo III
	mg/dl	4.40	3.86	4.94	0.27	0.54	
	mmol/l	1.77	1.56	1.98	0.11	0.21	Methylthymol blue
	mg/dl	4.30	3.79	4.81	0.26	0.51	
	mmol/l	1.80	1.58	2.02	0.11	0.22	Enzymatic
	mg/dl	4.37	3.84	4.90	0.27	0.53	
Osmolality	mOsm/kg	355	284	426	35.50	71.00	Calculated
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	2.28	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	6.23	5.74	6.72	0.25	0.49	ISE method - indirect
Protein Total	g/l	45.2	36.1	54.3	4.55	9.10	Biuret reaction end point
	g/dl	4.52	3.61	5.43	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	
PSA Total	ng/ml =	28.0	21.0	35.0	3.50	7.00	Abbott Architect
Sodium	mmol/l	160	152	168	4.00	8.00	ISE method - indirect
Thyroid Stimulating Hormone	µU/ml =	0.97	0.77	1.16	0.10	0.19	Abbott Architect
TIBC	µmol/l	62.1	49.0	75.2	6.55	13.10	FE+UIBC(saturation with iron)
	µg/dl	347	274	420	36.50	73.00	

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			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	2.91	2.44	3.38	0.24	0.47	Lipase/GPO-PAP 0.11mmol/l correction
	mg/dl	258	216	300	21.00	42.00	
	mmol/l	2.92	2.46	3.38	0.23	0.46	L/G Kinase EP. no correction
	mg/dl	258	218	298	20.00	40.00	
	mmol/l	2.89	2.43	3.35	0.23	0.46	Lipase/Glycerol Dehydrogenase
	mg/dl	256	215	297	20.50	41.00	
	mmol/l	2.94	2.47	3.41	0.24	0.47	Agappe - GPO - TOPS
	mg/dl	260	219	301	20.50	41.00	
Uric Acid (Urate)	mmol/l	0.55	0.48	0.63	0.04	0.07	Uricase peroxidase with ascorbate oxidase
	mg/dl	9.31	8.10	10.5	0.61	1.21	
	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	0.56	0.49	0.64	0.04	0.07	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	9.46	8.22	10.7	0.62	1.24	
Urea	mmol/l	19.8	16.8	22.8	1.50	3.00	Urease kinetic
	mg/dl	119	101	137	9.00	18.00	
	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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ABX Pentra 400®

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			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Albumin	g/l	28.3	24.0	32.6	2.15	4.30	Bromocresol Green
	g/dl	2.83	2.40	3.26	0.22	0.43	
Alkaline Phosphatase	U/l	342	290	394	26.00	52.00	AMP optimised to IFCC 37℃
ALT (GPT)	U/l	145	116	174	14.50	29.00	Tris buffer without P5P 37℃
AST (GOT)	U/l	178	143	213	17.50	35.00	Tris buffer without P5P 37℃
Bilirubin Total	µmol/l	85.9	67.9	104	9.00	18.00	Diazo with Dichloroaniline (DCA)
	mg/dl	5.03	3.97	6.09	0.53	1.06	
Calcium	mmol/l	3.27	2.94	3.60	0.17	0.33	Cresolphthalein complexone
	mg/dl	13.1	11.8	14.4	0.65	1.30	
Cholesterol	mmol/l	7.31	6.36	8.26	0.48	0.95	Cholesterol Oxidase
	mg/dl	282	245	319	18.50	37.00	
Creatinine	µmol/l	359	287	431	36.00	72.00	Alkaline picrate no deproteinization
	mg/dl	4.06	3.24	4.88	0.41	0.82	
Glucose	mmol/l	15.9	13.5	18.3	1.20	2.40	Glucose oxidase
	mg/dl	287	243	331	22.00	44.00	
Phosphate Inorganic	mmol/l	2.43	2.07	2.79	0.18	0.36	Phosphomolybdate UV
	mg/dl	7.53	6.42	8.64	0.56	1.11	
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	
Triglycerides	mmol/l	2.92	2.45	3.39	0.24	0.47	Lipase/GPO-PAP no correction
	mg/dl	258	217	299	20.50	41.00	

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RANDOX

ABX Pentra 400®

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			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
	mg/dl	9.09	7.90	10.3	0.60	1.19	
Urea	mmol/l	18.0	15.3	20.7	1.35	2.70	Urease kinetic
	mg/dl	108	92.0	124	8.00	16.00	
	mmol/l	18.0	15.3	20.7	1.35	2.70	BUN
	mg/dl	50.5	42.9	58.1	3.80	7.60	

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Alfa Wassermann Alfa 600/Analyticon Biolyzer 6(ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Albumin	g/l	30.1	25.6	34.6	2.25	4.50	Bromocresol Green
	g/dl	3.01	2.56	3.46	0.23	0.45	
ALT (GPT)	U/l	131	104	158	13.50	27.00	Tris buffer without P5P 37℃
	U/l	97	77	117	10.00	20.00	Tris buffer without P5P 30℃
	U/l	74	59	89	7.50	15.00	Tris buffer without P5P 25℃
AST (GOT)	U/l	158	126	190	16.00	32.00	Tris buffer without P5P 37℃
	U/l	107	85	129	11.00	22.00	Tris buffer without P5P 30℃
	U/l	75	60	90	7.50	15.00	Tris buffer without P5P 25℃
Calcium	mmol/l	3.15	2.84	3.46	0.16	0.31	Arsenazo III
	mg/dl	12.6	11.4	13.8	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	340	272	408	34.00	68.00	Alkaline picrate no deproteinization
	mg/dl	3.84	3.07	4.61	0.39	0.77	
Glucose	mmol/l	15.5	13.2	17.8	1.15	2.30	Hexokinase
	mg/dl	279	238	320	20.50	41.00	
Protein Total	g/l	48.8	39.0	58.6	4.90	9.80	Biuret reaction end point
	g/dl	4.88	3.90	5.86	0.49	0.98	
Triglycerides	mmol/l	2.94	2.47	3.41	0.24	0.47	Lipase/GPO-PAP no correction
	mg/dl	260	219	301	20.50	41.00	
Uric Acid (Urate)	mmol/l	0.55	0.48	0.62	0.04	0.07	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	9.27	8.06	10.5	0.61	1.21	

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Alfa Wassermann Alfa 600/Analyticon Biolyzer 6(ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

Analyte	unit	Target	Range low	Range high	1SD	2SD	methods
Urea	mmol/l	18.3	15.6	21.0	1.35	2.70	Urease kinetic
	mg/dl	110	93.8	126	8.10	16.20	
	mmol/l	18.3	15.6	21.0	1.35	2.70	BUN
	mg/dl	51.4	43.7	59.1	3.85	7.70	

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RANDOX

Arkray Spotchem EZ/EL®

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Albumin	g/l	29.0	24.7	33.3	2.15	4.30	ARKRAY Spotchem EZ
	g/dl	2.90	2.47	3.33	0.22	0.43	
Alkaline Phosphatase	U/l	468	393	543	37.50	75.00	ARKRAY Spotchem EZ 37℃
ALT (GPT)	U/l	140	118	162	11.00	22.00	ARKRAY Spotchem EZ 37℃
Amylase Total	U/l	239	201	277	19.00	38.00	ARKRAY Spotchem EZ 37℃
AST (GOT)	U/l	153	129	177	12.00	24.00	ARKRAY Spotchem EZ 37℃
Bilirubin Total	µmol/l	93.3	74.6	112	9.35	18.70	ARKRAY Spotchem EZ
	mg/dl	5.46	4.36	6.56	0.55	1.10	
Bun Urea	mmol/l	21.8	19.6	24.0	1.10	2.20	ARKRAY Spotchem EZ
	mg/dl	61.0	54.9	67.1	3.05	6.10	
Calcium	mmol/l	3.92	3.53	4.31	0.20	0.39	ARKRAY Spotchem EZ
	mg/dl	15.7	14.1	17.3	0.80	1.60	
Cholesterol	mmol/l	7.18	6.46	7.90	0.36	0.72	ARKRAY Spotchem EZ
	mg/dl	277	249	305	14.00	28.00	
Chloride	mmol/l	132	123	141	4.50	9.00	ARKRAY Spotchem EL
CK Total	U/l	613	515	711	49.00	98.00	ARKRAY Spotchem EZ 37℃
Creatinine	µmol/l	360	302	418	29.00	58.00	ARKRAY Spotchem EZ (creatinine)
	mg/dl	4.07	3.41	4.73	0.33	0.66	
	µmol/l	323	291	355	16.00	32.00	ARKRAY Spotchem EZ (creatinine2)
	mg/dl	3.65	3.29	4.01	0.18	0.36	
gamma-GT	U/l	187	157	217	15.00	30.00	ARKRAY Spotchem EZ 37℃

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Arkray Spotchem EZ/EL®

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Glucose	mmol/l	16.2	14.6	17.8	0.80	1.60	ARKRAY Spotchem EZ
	mg/dl	292	263	321	14.50	29.00	
HDL - Cholesterol	mmol/l	2.03	1.62	2.43	0.20	0.41	ARKRAY Spotchem EZ
	mg/dl	78.2	62.5	93.9	7.85	15.70	
LD (LDH)	U/l	642	539	745	51.50	103.00	ARKRAY Spotchem EZ 37℃
Magnesium	mmol/l	1.75	1.47	2.03	0.14	0.28	ARKRAY Spotchem EZ
	mg/dl	4.25	3.57	4.93	0.34	0.68	
Phosphate Inorganic	mmol/l	2.10	1.84	2.36	0.13	0.26	ARKRAY Spotchem EZ
	mg/dl	6.51	5.70	7.32	0.41	0.81	
Potassium	mmol/l	5.90	5.44	6.36	0.23	0.46	ARKRAY Spotchem EL
Protein Total	g/l	48.5	38.8	58.2	4.85	9.70	ARKRAY Spotchem EZ
	g/dl	4.85	3.88	5.82	0.49	0.97	
Sodium	mmol/l	154	148	160	3.00	6.00	ARKRAY Spotchem EL
Triglycerides	mmol/l	1.90	1.62	2.18	0.14	0.28	ARKRAY Spotchem EZ
	mg/dl	168	143	193	12.50	25.00	
Uric Acid (Urate)	mmol/l	0.52	0.47	0.57	0.03	0.05	ARKRAY Spotchem EZ
	mg/dl	8.74	7.86	9.62	0.44	0.88	

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Beckman Coulter AU Series®

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Albumin	g/l	27.1	23.1	31.1	2.00	4.00	Bromocresol Green
	g/dl	2.71	2.31	3.11	0.20	0.40	
	g/l	28.0	23.8	32.2	2.10	4.20	Bromocresol Purple
	g/dl	2.80	2.38	3.22	0.21	0.42	
Alkaline Phosphatase	U/l	400	340	460	30.00	60.00	p-Nitrophenylphosphate AMP 37℃
	U/l	554	471	637	41.50	83.00	Diethanolamine buffer DEA 37°C
	U/l	392	333	451	29.50	59.00	AMP optimised to IFCC 37℃
ALT (GPT)	U/l	139	111	167	14.00	28.00	Tris buffer without P5P 37℃
Amylase Total	U/l	280	238	322	21.00	42.00	pNP Maltotrioside substrates 37℃
	U/l	282	240	324	21.00	42.00	Biotrol - blocked pNPG7 37℃
	U/l	285	242	328	21.50	43.00	Beckman Olympus - blocked pNPG7 37℃
AST (GOT)	U/l	180	144	216	18.00	36.00	Tris buffer without P5P 37℃
Bicarbonate	mmol/l	16.2	12.9	19.5	1.65	3.30	Enzymatic
Bilirubin Direct	µmol/l	20.5	16.2	24.8	2.15	4.30	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.20	0.948	1.45	0.13	0.25	
Bilirubin Total	µmol/l	85.9	67.9	104	9.00	18.00	Diazo with Sulphanilic Acid
	mg/dl	5.03	3.97	6.09	0.53	1.06	
	µmol/l	85.2	67.3	103	8.95	17.90	Dichlorophenyl Diazonium (DPD)
	mg/dl	4.98	3.94	6.02	0.52	1.04	
	µmol/l	78.9	62.4	95.4	8.25	16.50	Oxidation to Biliverdin
	mg/dl	4.62	3.65	5.59	0.49	0.97	

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ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Calcium	mmol/l	3.15	2.83	3.47	0.16	0.32	Cresolphthalein complexone
	mg/dl	12.6	11.3	13.9	0.65	1.30	
	mmol/l	3.17	2.85	3.49	0.16	0.32	Arsenazo III
	mg/dl	12.7	11.4	14.0	0.65	1.30	
Cholesterol	mmol/l	7.43	6.46	8.40	0.49	0.97	Cholesterol Oxidase
	mg/dl	287	249	325	19.00	38.00	
Chloride	mmol/l	114	105	123	4.50	9.00	ISE indirect
Cholinesterase	U/l	4407	3526	5288	440.50	881.00	Colorimetric Butyrylthiocholine 37℃
CK Total	U/l	556	456	656	50.00	100.00	CK-NAC serum start (DGKC) 37℃
	U/l	568	466	670	51.00	102.00	CK-NAC substrate start (DGKC) 37℃
	U/l	559	458	660	50.50	101.00	CK-NAC (IFCC) 37℃
Copper	µmol/l	26.0	20.8	31.2	2.60	5.20	Colorimetric
	µg/dl	165	132	198	16.50	33.00	
Creatinine	µmol/l	359	287	431	36.00	72.00	Alkaline picrate no deproteinization
	mg/dl	4.06	3.24	4.88	0.41	0.82	
	µmol/l	375	300	450	37.50	75.00	Randox Enzymatic UV method
	mg/dl	4.24	3.39	5.09	0.43	0.85	
	µmol/l	370	296	444	37.00	74.00	Creatinine PAP method
	mg/dl	4.18	3.34	5.02	0.42	0.84	
	µmol/l	362	289	435	36.50	73.00	Jaffe rate blanked
	mg/dl	4.09	3.27	4.91	0.41	0.82	
	µmol/l	361	289	433	36.00	72.00	Jaffe rate blanked compensated (-18 µmol/l)
	mg/dl	4.08	3.27	4.89	0.41	0.81	
	µmol/l	367	293	441	37.00	74.00	IDMS traceable
	mg/dl	4.15	3.31	4.99	0.42	0.84	

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ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

Analyte	unit	Target	Range low	Range high	1SD	2SD	methods
D-3-Hydroxybutyrate	mmol/l	1.19	1.01	1.37	0.09	0.18	Tris buffer 100mmol pH 8.5
gamma-GT	U/l	170	144	196	13.00	26.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 37℃
	U/l	167	142	192	12.50	25.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37℃
GLDH	U/l	31	24	38	3.50	7.00	Triethanolamine buffer 50 mmol 37℃
Glucose	mmol/l	16.0	13.6	18.4	1.20	2.40	Hexokinase
	mg/dl	288	245	331	21.50	43.00	
HDL - Cholesterol	mmol/l	2.74	2.33	3.15	0.21	0.41	Direct HDL Immunoseparation
	mg/dl	106	89.9	122	8.05	16.10	
	mmol/l	2.73	2.32	3.14	0.21	0.41	Direct Clearance Method
	mg/dl	105	89.6	120	7.70	15.40	
Iron	µmol/l	39.6	32.5	46.7	3.55	7.10	Colorimetric with ppt.
	µg/dl	221	182	260	19.50	39.00	
	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	5.68	4.66	6.70	0.51	1.02	Colorimetric Lactate Oxidase
	mg/dl	51.2	42.0	60.4	4.60	9.20	
LD (LDH)	U/l	369	313	425	28.00	56.00	L->P 37℃
	U/l	847	720	974	63.50	127.00	P->L Scandinavian & Dutch 37℃
	U/l	372	316	428	28.00	56.00	L->P IFCC 37℃
Lipase	U/l	71	57	85	7.00	14.00	Other Colorimetric 37℃
	U/l	61	49	73	6.00	12.00	Roche Colorimetric 37℃
	U/l	77	61	93	8.00	16.00	Randox Colorimetric 37℃
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	1.82	1.61	2.03	0.11	0.21	Xylidyl Blue
	mg/dl	4.42	3.91	4.93	0.26	0.51	

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Beckman Coulter AU Series®

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Phosphate Inorganic	mmol/l	2.39	2.03	2.75	0.18	0.36	Phosphomolybdate enzymatic
	mg/dl	7.41	6.29	8.53	0.56	1.12	
	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	6.21	5.71	6.71	0.25	0.50	ISE method - indirect
Protein Total	g/l	44.4	35.5	53.3	4.45	8.90	Biuret reaction end point
	g/dl	4.44	3.55	5.33	0.45	0.89	
	g/l	43.6	34.9	52.3	4.35	8.70	Biuret reaction kinetic
	g/dl	4.36	3.49	5.23	0.44	0.87	
Sodium	mmol/l	158	150	166	4.00	8.00	ISE method - indirect
TIBC	µmol/l	59.7	47.2	72.2	6.25	12.50	FE+UIBC(saturation with iron)
	µg/dl	334	264	404	35.00	70.00	
Total T4	nmol/l	185	139	231	23.00	46.00	Microgenics DRI assay
	µg/dl	14.4	10.8	18.0	1.80	3.60	
	ng/ml	144	108	180	18.00	36.00	Microgenics DRI assay
Triglycerides	mmol/l	2.94	2.47	3.41	0.24	0.47	Lipase/GPO-PAP no correction
	mg/dl	260	219	301	20.50	41.00	
	mmol/l	3.01	2.53	3.49	0.24	0.48	L/G Kinase EP. no correction
	mg/dl	266	224	308	21.00	42.00	
Uric Acid (Urate)	mmol/l	0.58	0.50	0.66	0.04	0.08	Uricase peroxidase with ascorbate oxidase
	mg/dl	9.74	8.47	11.0	0.64	1.27	
	mmol/l	0.58	0.51	0.66	0.04	0.08	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.74	8.48	11.0	0.63	1.26	
	mmol/l	0.57	0.50	0.65	0.04	0.08	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	9.64	8.38	10.9	0.63	1.26	

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Beckman Coulter AU Series®

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
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	19.4	16.5	22.3	1.45	2.90	Urease kinetic
	mg/dl	117	99.2	135	8.90	17.80	
	mmol/l	19.4	16.5	22.3	1.45	2.90	BUN
	mg/dl	54.4	46.2	62.6	4.10	8.20	

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RANDOX

Beckman CX4/5/7/9/LX20®/DxC600/800®

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Albumin	g/l	27.7	23.6	31.8	2.05	4.10	Bromocresol Purple
	g/dl	2.77	2.36	3.18	0.21	0.41	
Alkaline Phosphatase	U/l	356	302	410	27.00	54.00	p-Nitrophenylphosphate AMP 37℃
	U/l	359	305	413	27.00	54.00	AMP optimised to IFCC 37℃
ALT (GPT)	U/l	128	102	154	13.00	26.00	Tris buffer without P5P 37℃
	U/l	127	102	152	12.50	25.00	Tris buffer SCE 37℃
Amylase Total	U/l	293	249	337	22.00	44.00	Beckman Synchron CX4/CX5/CX7 37℃
	U/l	296	252	340	22.00	44.00	Beckman Synchron AMY7 37℃
AST (GOT)	U/l	161	129	193	16.00	32.00	Tris buffer without P5P 37℃
	U/l	163	130	196	16.50	33.00	Tris buffer SCE 37℃
Bicarbonate	mmol/l	15.7	12.4	19.0	1.65	3.30	Differential rate pH change
	mmol/l	16.6	13.2	20.0	1.70	3.40	Ion selective electrode
Bilirubin Direct	µmol/l	14.6	11.6	17.6	1.50	3.00	Diazo with Sulphanilic Acid
	mg/dl	0.854	0.679	1.03	0.09	0.18	
Bilirubin Total	µmol/l	82.1	64.9	99.3	8.60	17.20	Diazo with Sulphanilic Acid
	mg/dl	4.80	3.80	5.80	0.50	1.00	
Calcium	mmol/l	3.07	2.77	3.37	0.15	0.30	Ion selective electrode
	mg/dl	12.3	11.1	13.5	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	
Cholesterol	mmol/l	7.44	6.47	8.41	0.49	0.97	Cholesterol Oxidase
	mg/dl	287	250	324	18.50	37.00	

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RANDOX

Beckman CX4/5/7/9/LX20®/DxC600/800®

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Chloride	mmol/l	115	105	125	5.00	10.00	ISE indirect
Cholinesterase	U/l	4875	3900	5850	487.50	975.00	Colorimetric Butyrylthiocholine 37℃
CK Total	U/l	566	464	668	51.00	102.00	CK-NAC (IFCC) 37℃
	U/l	561	460	662	50.50	101.00	Monothioglycerol 37℃
Creatinine	µmol/l	372	298	446	37.00	74.00	Alkaline picrate no deproteinization
	mg/dl	4.20	3.37	5.03	0.42	0.83	
	µmol/l	375	300	450	37.50	75.00	Randox Enzymatic UV method
	mg/dl	4.24	3.39	5.09	0.43	0.85	
	µmol/l	373	299	447	37.00	74.00	Jaffe rate blanked
	mg/dl	4.21	3.38	5.04	0.42	0.83	
	µmol/l	370	296	444	37.00	74.00	IDMS traceable
	mg/dl	4.18	3.34	5.02	0.42	0.84	
Free T4	pmol/l	66.1	49.6	82.6	8.25	16.50	Beckman DxI800
	ng/dl	5.16	3.87	6.45	0.65	1.29	
	pg/ml	51.6	38.7	64.5	6.45	12.90	Beckman DxI800
gamma-GT	U/l	135	115	155	10.00	20.00	Gamma glutamyl-4-nitroanilide 37℃
Glucose	mmol/l	15.4	13.1	17.7	1.15	2.30	Hexokinase
	mg/dl	278	236	320	21.00	42.00	
	mmol/l	15.4	13.1	17.7	1.15	2.30	Oxygen electrode
	mg/dl	278	236	320	21.00	42.00	
	mmol/l	15.3	13.0	17.6	1.15	2.30	Glucose oxidase
	mg/dl	276	234	318	21.00	42.00	
HDL - Cholesterol	mmol/l	3.49	2.97	4.01	0.26	0.52	Direct HDL PPD
	mg/dl	135	115	155	10.00	20.00	

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ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Iron	µmol/l	39.4	32.3	46.5	3.55	7.10	Colorimetric without ppt.
	µg/dl	220	181	259	19.50	39.00	
Lactate	mmol/l	5.41	4.44	6.38	0.49	0.97	Colorimetric Lactate Oxidase
	mg/dl	48.7	40.0	57.4	4.35	8.70	
LD (LDH)	U/l	310	264	356	23.00	46.00	L->P 37℃
	U/l	963	819	1107	72.00	144.00	Pyruvate 1.4 mM - Beckman LD-P 37℃
	U/l	289	245	333	22.00	44.00	L->P IFCC 37℃
Lipase	U/l	67	54	80	6.50	13.00	Other Colorimetric 37℃
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	
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	
Potassium	mmol/l	6.21	5.71	6.71	0.25	0.50	ISE method - indirect
Protein Total	g/l	42.8	34.2	51.4	4.30	8.60	Biuret reaction CX4/5/7
	g/dl	4.28	3.42	5.14	0.43	0.86	
	g/l	44.3	35.5	53.1	4.40	8.80	Biuret reaction end point
	g/dl	4.43	3.55	5.31	0.44	0.88	
	g/l	42.4	33.9	50.9	4.25	8.50	Biuret reaction kinetic
	g/dl	4.24	3.39	5.09	0.43	0.85	
Sodium	mmol/l	158	150	166	4.00	8.00	ISE method - indirect
Thyroid Stimulating Hormone	µU/ml =	1.17	0.93	1.41	0.12	0.24	Beckman DxI800 Hyper TSH
TIBC	µmol/l	62.7	49.5	75.9	6.60	13.20	Removal of excess free iron
	µg/dl	350	277	423	36.50	73.00	
Triglycerides	mmol/l	3.01	2.52	3.50	0.25	0.49	Lipase/GPO-PAP no correction
	mg/dl	266	223	309	21.50	43.00	

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Beckman CX4/5/7/9/LX20®/DxC600/800®

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Triglycerides	mmol/l	3.01	2.53	3.49	0.24	0.48	L/G Kinase EP. no correction
	mg/dl	266	224	308	21.00	42.00	
Uric Acid (Urate)	mmol/l	0.53	0.46	0.60	0.03	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	8.90	7.74	10.1	0.58	1.16	
Urea	mmol/l	19.5	16.5	22.5	1.50	3.00	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	

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BIOSYSTEMS A15

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			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	
Alkaline Phosphatase	U/l	338	287	389	25.50	51.00	AMP optimised to IFCC 37℃
	U/l	263	224	302	19.50	39.00	AMP optimised to IFCC 30℃
	U/l	216	183	249	16.50	33.00	AMP optimised to IFCC 25℃
ALT (GPT)	U/l	153	123	183	15.00	30.00	Tris buffer without P5P 37℃
	U/l	113	91	135	11.00	22.00	Tris buffer without P5P 30℃
	U/l	86	69	103	8.50	17.00	Tris buffer without P5P 25℃
AST (GOT)	U/l	193	154	232	19.50	39.00	Tris buffer without P5P 37℃
	U/l	130	104	156	13.00	26.00	Tris buffer without P5P 30℃
	U/l	92	73	111	9.50	19.00	Tris buffer without P5P 25℃
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	
Cholesterol	mmol/l	7.53	6.55	8.51	0.49	0.98	Cholesterol Oxidase
	mg/dl	291	253	329	19.00	38.00	
Creatinine	µmol/l	326	260	392	33.00	66.00	Alkaline picrate no deproteinization
	mg/dl	3.68	2.94	4.42	0.37	0.74	
Glucose	mmol/l	16.5	14.0	19.0	1.25	2.50	Glucose oxidase
	mg/dl	297	252	342	22.50	45.00	
Protein Total	g/l	47.2	37.7	56.7	4.75	9.50	Biuret reaction end point
	g/dl	4.72	3.77	5.67	0.48	0.95	

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BIOSYSTEMS A15

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
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	
Uric Acid (Urate)	mmol/l	0.59	0.51	0.66	0.04	0.08	Uricase peroxidase with ascorbate oxidase
	mg/dl	9.88	8.60	11.2	0.64	1.28	
Urea	mmol/l	18.5	15.7	21.3	1.40	2.80	Urease kinetic
	mg/dl	111	94.4	128	8.30	16.60	
	mmol/l	18.5	15.7	21.3	1.40	2.80	BUN
	mg/dl	51.9	44.1	59.7	3.90	7.80	

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BIOSYSTEMS A25

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Alkaline Phosphatase	U/l	314	267	361	23.50	47.00	AMP optimised to IFCC 37℃
	U/l	245	208	282	18.50	37.00	AMP optimised to IFCC 30℃
	U/l	201	171	231	15.00	30.00	AMP optimised to IFCC 25℃
ALT (GPT)	U/l	149	119	179	15.00	30.00	Tris buffer without P5P 37℃
	U/l	110	88	132	11.00	22.00	Tris buffer without P5P 30℃
	U/l	84	67	101	8.50	17.00	Tris buffer without P5P 25℃
Bilirubin Total	µmol/l	86.3	68.2	104	9.05	18.10	Diazo with Sulphanilic Acid
	mg/dl	5.05	3.99	6.11	0.53	1.06	
Cholesterol	mmol/l	7.48	6.51	8.45	0.49	0.97	Cholesterol Oxidase
	mg/dl	289	251	327	19.00	38.00	
CK Total	U/l	568	466	670	51.00	102.00	CK-NAC (IFCC) 37℃
	U/l	356	292	420	32.00	64.00	CK-NAC (IFCC) 30℃
	U/l	241	198	284	21.50	43.00	CK-NAC (IFCC) 25℃
Creatinine	µmol/l	331	265	397	33.00	66.00	Alkaline picrate no deproteinization
	mg/dl	3.74	2.99	4.49	0.38	0.75	
gamma-GT	U/l	160	136	184	12.00	24.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37℃
	U/l	126	107	145	9.50	19.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30℃
	U/l	99	84	114	7.50	15.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25℃
Glucose	mmol/l	16.0	13.6	18.4	1.20	2.40	Glucose oxidase
	mg/dl	288	245	331	21.50	43.00	
LD (LDH)	U/l	814	692	936	61.00	122.00	P->L Scandinavian & Dutch 37℃
	U/l	588	500	676	44.00	88.00	P->L Scandinavian & Dutch 30°C
	U/l	413	351	475	31.00	62.00	P->L Scandinavian & Dutch 25°C

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BIOSYSTEMS A25

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Phosphate Inorganic	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	
Protein Total	g/l	44.8	35.8	53.8	4.50	9.00	Biuret reaction end point
	g/dl	4.48	3.58	5.38	0.45	0.90	
Triglycerides	mmol/l	2.80	2.35	3.25	0.23	0.45	Lipase/GPO-PAP no correction
	mg/dl	248	208	288	20.00	40.00	
Uric Acid (Urate)	mmol/l	0.58	0.50	0.65	0.04	0.08	Uricase peroxidase with ascorbate oxidase
	mg/dl	9.71	8.45	11.0	0.63	1.26	
	mmol/l	0.57	0.50	0.65	0.04	0.08	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.64	8.38	10.9	0.63	1.26	
Urea	mmol/l	18.0	15.3	20.7	1.35	2.70	Urease end point
	mg/dl	108	92.0	124	8.00	16.00	
	mmol/l	18.1	15.4	20.8	1.35	2.70	Urease kinetic
	mg/dl	109	92.6	125	8.20	16.40	
	mmol/l	18.1	15.4	20.8	1.35	2.70	BUN
	mg/dl	50.8	43.2	58.4	3.80	7.60	

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Biotechnica/Weiner BT Series/CB 350i

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Albumin	g/l	28.3	24.0	32.6	2.15	4.30	Bromocresol Green
	g/dl	2.83	2.40	3.26	0.22	0.43	
Alkaline Phosphatase	U/l	493	419	567	37.00	74.00	Diethanolamine buffer DEA 37°C
	U/l	384	326	442	29.00	58.00	Diethanolamine buffer DEA 30°C
	U/l	315	268	362	23.50	47.00	Diethanolamine buffer DEA 25°C
AST (GOT)	U/l	165	132	198	16.50	33.00	Tris buffer without P5P 37℃
	U/l	112	89	135	11.50	23.00	Tris buffer without P5P 30℃
	U/l	79	63	95	8.00	16.00	Tris buffer without P5P 25℃
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	7.43	6.46	8.40	0.49	0.97	Cholesterol Oxidase
	mg/dl	287	249	325	19.00	38.00	
Creatinine	µmol/l	337	270	404	33.50	67.00	Alkaline picrate no deproteinization
	mg/dl	3.81	3.05	4.57	0.38	0.76	
	µmol/l	369	296	442	36.50	73.00	Creatinine PAP method
	mg/dl	4.17	3.34	5.00	0.42	0.83	
Glucose	mmol/l	15.5	13.2	17.8	1.15	2.30	Glucose oxidase
	mg/dl	279	238	320	20.50	41.00	
HDL - Cholesterol	mmol/l	2.50	2.13	2.87	0.19	0.37	Direct HDL Immunoseparation
	mg/dl	96.5	82.2	111	7.15	14.30	
Iron	µmol/l	38.9	31.9	45.9	3.50	7.00	Colorimetric without ppt.
	µg/dl	217	178	256	19.50	39.00	

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Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Phosphate Inorganic	mmol/l	2.35	2.00	2.70	0.18	0.35	Phosphomolybdate UV
	mg/dl	7.29	6.20	8.38	0.55	1.09	
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	
Triglycerides	mmol/l	2.82	2.37	3.27	0.23	0.45	Lipase/GPO-PAP no correction
	mg/dl	250	210	290	20.00	40.00	
Uric Acid (Urate)	mmol/l	0.55	0.48	0.62	0.04	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.17	7.98	10.4	0.60	1.19	
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	

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COBAS INTEGRA®

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Albumin	g/l	30.0	25.5	34.5	2.25	4.50	Bromocresol Green
	g/dl	3.00	2.55	3.45	0.23	0.45	
	g/l	26.5	22.5	30.5	2.00	4.00	Turbidimetric Assays
	g/dl	2.65	2.25	3.05	0.20	0.40	
Alkaline Phosphatase	U/l	241	205	277	18.00	36.00	Roche Integra AMP buffer 37℃
	U/l	188	160	216	14.00	28.00	Roche Integra AMP buffer 30℃
	U/l	154	131	177	11.50	23.00	Roche Integra AMP buffer 25℃
	U/l	238	203	273	17.50	35.00	AMP optimised to IFCC 37℃
	U/l	185	158	212	13.50	27.00	AMP optimised to IFCC 30℃
	U/l	152	130	174	11.00	22.00	AMP optimised to IFCC 25℃
ALT (GPT)	U/l	128	102	154	13.00	26.00	Tris buffer without P5P 37℃
	U/l	95	75	115	10.00	20.00	Tris buffer without P5P 30℃
	U/l	72	57	87	7.50	15.00	Tris buffer without P5P 25℃
Amylase Pancreatic	U/l	257	218	296	19.50	39.00	Immunoinhibition EPS substrate 37℃
	U/l	257	218	296	19.50	39.00	Randox EPS Liquid and BM/Roche EPS Liquid 37℃
Amylase Total	U/l	274	233	315	20.50	41.00	BM/Roche Colorimetric pNPG7 37℃
	U/l	280	238	322	21.00	42.00	Roche Integra 2-chloro-pNPG7 37℃
	U/l	277	235	319	21.00	42.00	Roche liquid stable pNPG7 37°C
AST (GOT)	U/l	163	130	196	16.50	33.00	Tris buffer without P5P 37℃
	U/l	110	88	132	11.00	22.00	Tris buffer without P5P 30℃
	U/l	78	62	94	8.00	16.00	Tris buffer without P5P 25℃

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ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Bicarbonate	mmol/l	15.3	12.2	18.4	1.55	3.10	Enzymatic
Bilirubin Direct	µmol/l	26.7	21.1	32.3	2.80	5.60	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.56	1.23	1.89	0.17	0.33	
	µmol/l	26.8	21.2	32.4	2.80	5.60	Diazo with Sulphanilic Acid
	mg/dl	1.57	1.24	1.90	0.17	0.33	
	µmol/l	26.2	20.7	31.7	2.75	5.50	Diazo with Dichloroaniline (DCA)
	mg/dl	1.53	1.21	1.85	0.16	0.32	
Bilirubin Total	µmol/l	76.9	60.8	93.0	8.05	16.10	Diazo with Sulphanilic Acid
	mg/dl	4.50	3.56	5.44	0.47	0.94	
	µmol/l	77.9	61.6	94.2	8.15	16.30	Dichlorophenyl Diazonium (DPD)
	mg/dl	4.56	3.60	5.52	0.48	0.96	
	µmol/l	76.4	60.4	92.4	8.00	16.00	Diazonium ion
	mg/dl	4.47	3.53	5.41	0.47	0.94	
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	3.19	2.87	3.51	0.16	0.32	NM-BAPTA
	mg/dl	12.8	11.5	14.1	0.65	1.30	
Cholesterol	mmol/l	7.53	6.55	8.51	0.49	0.98	Cholesterol Oxidase
	mg/dl	291	253	329	19.00	38.00	
Chloride	mmol/l	116	106	126	5.00	10.00	ISE indirect
CK Total	U/l	581	476	686	52.50	105.00	CK-NAC (IFCC) 37℃
	U/l	364	298	430	33.00	66.00	CK-NAC (IFCC) 30℃
	U/l	247	202	292	22.50	45.00	CK-NAC (IFCC) 25℃
Creatinine	µmol/l	343	274	412	34.50	69.00	Alkaline picrate with deproteinization
	mg/dl	3.88	3.10	4.66	0.39	0.78	

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COBAS INTEGRA®

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Creatinine	µmol/l	349	280	418	34.50	69.00	Alkaline picrate no deproteinization
	mg/dl	3.94	3.16	4.72	0.39	0.78	
	µmol/l	368	294	442	37.00	74.00	Roche Creatinine Plus
	mg/dl	4.16	3.32	5.00	0.42	0.84	
	µmol/l	345	276	414	34.50	69.00	Jaffe rate blanked
	mg/dl	3.90	3.12	4.68	0.39	0.78	
	µmol/l	360	288	432	36.00	72.00	Jaffe rate blanked comp. (-26 µmol/l)
	mg/dl	4.07	3.25	4.89	0.41	0.82	
	µmol/l	348	278	418	35.00	70.00	Jaffe rate blanked compensated (-18 µmol/l)
	mg/dl	3.93	3.14	4.72	0.40	0.79	
gamma-GT	U/l	149	127	171	11.00	22.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 37℃
	U/l	117	100	134	8.50	17.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 30℃
	U/l	92	78	106	7.00	14.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 25℃
	U/l	171	145	197	13.00	26.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37℃
	U/l	135	114	156	10.50	21.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30℃
	U/l	106	89	123	8.50	17.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25℃
Glucose	mmol/l	15.9	13.5	18.3	1.20	2.40	Hexokinase
	mg/dl	287	243	331	22.00	44.00	
	mmol/l	16.1	13.7	18.5	1.20	2.40	Glucose oxidase
	mg/dl	290	247	333	21.50	43.00	
HDL - Cholesterol	mmol/l	3.37	2.86	3.88	0.26	0.51	Direct HDL PEGME
	mg/dl	130	110	150	10.00	20.00	
	mmol/l	3.42	2.90	3.94	0.26	0.52	Direct HDL Roche 3rd generation
	mg/dl	132	112	152	10.00	20.00	
Iron	µmol/l	39.3	32.2	46.4	3.55	7.10	Colorimetric with ppt.
	µg/dl	220	180	260	20.00	40.00	

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ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Iron	µmol/l	39.4	32.3	46.5	3.55	7.10	Colorimetric without ppt.
	µg/dl	220	181	259	19.50	39.00	
Lactate	mmol/l	5.97	4.90	7.04	0.54	1.07	Colorimetric Lactate Oxidase
	mg/dl	53.8	44.1	63.5	4.85	9.70	
LD (LDH)	U/l	721	613	829	54.00	108.00	P->L German methods 37℃
	U/l	521	443	599	39.00	78.00	P->L German methods 30℃
	U/l	366	311	421	27.50	55.00	P->L German methods 25℃
	U/l	392	333	451	29.50	59.00	L->P IFCC 37℃
	U/l	283	240	326	21.50	43.00	L->P IFCC 30℃
	U/l	199	169	229	15.00	30.00	L->P IFCC 25℃
Lipase	U/l	68	54	82	7.00	14.00	Roche Colorimetric 37℃
Lithium	mmol/l	2.07	1.82	2.32	0.13	0.25	Ion selective electrode
	mg/dl	1.44	1.26	1.62	0.09	0.18	
Magnesium	mmol/l	1.80	1.58	2.02	0.11	0.22	Methylthymol blue
	mg/dl	4.37	3.84	4.90	0.27	0.53	
	mmol/l	1.77	1.55	1.99	0.11	0.22	Chlorphosphonazo III
	mg/dl	4.30	3.77	4.83	0.27	0.53	
Phosphate Inorganic	mmol/l	2.36	2.01	2.71	0.18	0.35	Phosphomolybdate enzymatic
	mg/dl	7.32	6.23	8.41	0.55	1.09	
	mmol/l	2.34	1.99	2.69	0.18	0.35	Phosphomolybdate UV
	mg/dl	7.25	6.17	8.33	0.54	1.08	
Potassium	mmol/l	6.28	5.77	6.79	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	

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ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Protein Total	g/l	42.6	34.1	51.1	4.25	8.50	Biuret reaction kinetic
	g/dl	4.26	3.41	5.11	0.43	0.85	
Sodium	mmol/l	158	150	166	4.00	8.00	ISE method - indirect
TIBC	µmol/l	64.2	50.7	77.7	6.75	13.50	FE+UIBC(saturation with iron)
	µg/dl	359	283	435	38.00	76.00	
Triglycerides	mmol/l	2.84	2.38	3.30	0.23	0.46	Lipase/GPO-PAP no correction
	mg/dl	251	211	291	20.00	40.00	
	mmol/l	2.82	2.37	3.27	0.23	0.45	Lipase/GPO-PAP 0.11mmol/l correction
	mg/dl	250	210	290	20.00	40.00	
	mmol/l	2.87	2.41	3.33	0.23	0.46	L/G Kinase EP. no correction
	mg/dl	254	213	295	20.50	41.00	
	mmol/l	2.85	2.39	3.31	0.23	0.46	Lipase/Glycerol Dehydrogenase
	mg/dl	252	212	292	20.00	40.00	
Uric Acid (Urate)	mmol/l	0.56	0.49	0.64	0.04	0.07	Uricase peroxidase with ascorbate oxidase
	mg/dl	9.48	8.25	10.7	0.62	1.23	
	mmol/l	0.56	0.49	0.63	0.04	0.07	Uricase peroxidase no 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 with ascorbate oxidase @ 546nm
	mg/dl	9.41	8.18	10.6	0.62	1.23	
Urea	mmol/l	18.8	16.0	21.6	1.40	2.80	Urease kinetic
	mg/dl	113	96.2	130	8.40	16.80	
	mmol/l	18.8	16.0	21.6	1.40	2.80	BUN
	mg/dl	52.8	44.9	60.7	3.95	7.90	

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ELITech/Vitalab Selectra Pro/E/XL/Jnr

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Albumin	g/l	30.0	25.5	34.5	2.25	4.50	Bromocresol Green
	g/dl	3.00	2.55	3.45	0.23	0.45	
Alkaline Phosphatase	U/l	499	424	574	37.50	75.00	Diethanolamine buffer DEA 37°C
ALT (GPT)	U/l	141	112	170	14.50	29.00	Tris buffer without P5P 37℃
AST (GOT)	U/l	166	133	199	16.50	33.00	Tris buffer without P5P 37℃
Bilirubin Total	µmol/l	88.1	69.6	107	9.25	18.50	Diazo with Sulphanilic Acid
	mg/dl	5.15	4.07	6.23	0.54	1.08	
Calcium	mmol/l	3.14	2.82	3.46	0.16	0.32	Arsenazo III
	mg/dl	12.6	11.3	13.9	0.65	1.30	
Cholesterol	mmol/l	7.41	6.44	8.38	0.49	0.97	Cholesterol Oxidase
	mg/dl	286	249	323	18.50	37.00	
CK Total	U/l	570	467	673	51.50	103.00	CK-NAC (IFCC) 37℃
Creatinine	µmol/l	344	275	413	34.50	69.00	Alkaline picrate no deproteinization
	mg/dl	3.89	3.11	4.67	0.39	0.78	
	µmol/l	355	284	426	35.50	71.00	Jaffe rate blanked
	mg/dl	4.01	3.21	4.81	0.40	0.80	
Glucose	mmol/l	16.0	13.6	18.4	1.20	2.40	Glucose oxidase
	mg/dl	288	245	331	21.50	43.00	
Phosphate Inorganic	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	
Protein Total	g/l	48.8	39.0	58.6	4.90	9.80	Biuret reaction end point
	g/dl	4.88	3.90	5.86	0.49	0.98	

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Size 20 x 5ml / 5 x 5ml Expiry 2019-05

Analyte	unit	Target	Range low	Range high	1SD	2SD	methods
Triglycerides	mmol/l	2.79	2.35	3.23	0.22	0.44	Lipase/GPO-PAP no correction
	mg/dl	247	208	286	19.50	39.00	
Uric Acid (Urate)	mmol/l	0.55	0.48	0.62	0.04	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.19	8.00	10.4	0.60	1.19	
	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	
Urea	mmol/l	18.9	16.0	21.8	1.45	2.90	Urease kinetic
	mg/dl	114	96.2	132	8.90	17.80	
	mmol/l	18.9	16.1	21.7	1.40	2.80	BUN
	mg/dl	53.0	45.1	60.9	3.95	7.90	

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ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Albumin	g/l	29.9	25.4	34.4	2.25	4.50	Bromocresol Green
	g/dl	2.99	2.54	3.44	0.23	0.45	
Alkaline Phosphatase	U/l	213	181	245	16.00	32.00	Roche Integra AMP buffer 37℃
	U/l	166	141	191	12.50	25.00	Roche Integra AMP buffer 30℃
	U/l	136	116	156	10.00	20.00	Roche Integra AMP buffer 25℃
	U/l	356	303	409	26.50	53.00	Randox AMP 37℃
	U/l	277	236	318	20.50	41.00	Randox AMP 30℃
	U/l	227	194	260	16.50	33.00	Randox AMP 25℃
ALT (GPT)	U/l	134	108	160	13.00	26.00	Tris buffer without P5P 37℃
	U/l	99	80	118	9.50	19.00	Tris buffer without P5P 30℃
	U/l	75	61	89	7.00	14.00	Tris buffer without P5P 25℃
Amylase Pancreatic	U/l	243	207	279	18.00	36.00	Roche liquid stable pNPG7 37°C
	U/l	283	241	325	21.00	42.00	Randox liquid stable pNPG7 37℃
Amylase Total	U/l	267	227	307	20.00	40.00	Roche liquid stable pNPG7 37°C
	U/l	309	263	355	23.00	46.00	Randox liquid stable pNPG7 37℃
Acid Phosphatase (non-prostatic)	U/l	8.30	5.56	11.0	1.37	2.74	1-Naphthyl Phosphate, Kinetic with Pentane diol Activation 37℃
	U/l	13.4	8.98	17.8	2.21	4.42	1-Naphthyl Phosphate substrate Kinetic 37℃
Acid Phosphatase (Prostatic)	U/l	27.6	18.5	36.7	4.55	9.10	1-Naphthyl Phosphate, Kinetic with Pentane diol Activation 37℃
	U/l	20.3	13.6	27.0	3.35	6.70	1-Naphthyl Phosphate substrate Kinetic 37℃
Acid Phosphatase (Total)	U/l	35.9	24.1	47.7	5.90	11.80	1-Naphthyl Phosphate, Kinetic with Pentane diol Activation 37℃
	U/l	33.7	22.6	44.8	5.55	11.10	1-Naphthyl Phosphate substrate Kinetic 37℃

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ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
AST (GOT)	U/l	167	133	201	17.00	34.00	Tris buffer without P5P 37℃
	U/l	113	90	136	11.50	23.00	Tris buffer without P5P 30℃
	U/l	79	63	95	8.00	16.00	Tris buffer without P5P 25℃
Bile Acids	µmol/l	48.6	38.9	58.3	4.85	9.70	5th Generation Colorimetric
Bicarbonate	mmol/l	15.4	12.2	18.6	1.60	3.20	Colorimetric
	mmol/l	15.7	12.4	19.0	1.65	3.30	Enzymatic
Bilirubin Direct	µmol/l	23.4	18.5	28.3	2.45	4.90	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.37	1.08	1.66	0.15	0.29	
	µmol/l	23.8	18.8	28.8	2.50	5.00	Diazo with Sulphanilic Acid
	mg/dl	1.39	1.10	1.68	0.15	0.29	
Bilirubin Total	µmol/l	78.6	62.1	95.1	8.25	16.50	Diazo with Sulphanilic Acid
	mg/dl	4.60	3.63	5.57	0.49	0.97	
	µmol/l	76.5	60.5	92.5	8.00	16.00	Dichlorophenyl Diazonium (DPD)
	mg/dl	4.48	3.54	5.42	0.47	0.94	
	µmol/l	77.6	61.3	93.9	8.15	16.30	Diazonium ion
	mg/dl	4.54	3.59	5.49	0.48	0.95	
Calcium	mmol/l	3.19	2.87	3.51	0.16	0.32	Cresolphthalein complexone
	mg/dl	12.8	11.5	14.1	0.65	1.30	
	mmol/l	3.16	2.85	3.47	0.16	0.31	NM-BAPTA
	mg/dl	12.7	11.4	14.0	0.65	1.30	
Cholesterol	mmol/l	7.37	6.41	8.33	0.48	0.96	Cholesterol Oxidase
	mg/dl	284	247	321	18.50	37.00	
Chloride	mmol/l	112	103	121	4.50	9.00	ISE indirect
Cholinesterase	U/l	4870	3896	5844	487.00	974.00	Colorimetric Butyrylthiocholine 37℃
CK Total	U/l	541	444	638	48.50	97.00	CK-NAC substrate start (DGKC) 37℃
	U/l	339	278	400	30.50	61.00	CK-NAC substrate start (DGKC) 30℃
	U/l	230	189	271	20.50	41.00	CK-NAC substrate start (DGKC) 25℃

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Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
CK Total	U/l	521	427	615	47.00	94.00	CK-NAC (IFCC) 37℃
	U/l	326	267	385	29.50	59.00	CK-NAC (IFCC) 30℃
	U/l	221	181	261	20.00	40.00	CK-NAC (IFCC) 25℃
Creatinine	µmol/l	341	273	409	34.00	68.00	Alkaline picrate no deproteinization
	mg/dl	3.85	3.08	4.62	0.39	0.77	
	µmol/l	374	299	449	37.50	75.00	Randox Enzymatic UV method
	mg/dl	4.23	3.38	5.08	0.43	0.85	
	µmol/l	374	299	449	37.50	75.00	Roche Creatinine Plus
	mg/dl	4.23	3.38	5.08	0.43	0.85	
	µmol/l	373	298	448	37.50	75.00	Jaffe rate blanked comp. (-26 µmol/l)
	mg/dl	4.21	3.37	5.05	0.42	0.84	
D-3-Hydroxybutyrate	mmol/l	1.16	0.99	1.33	0.09	0.17	Tris buffer 100mmol pH 8.5
gamma-GT	U/l	142	121	163	10.50	21.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 37℃
	U/l	112	95	129	8.50	17.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 30℃
	U/l	88	75	101	6.50	13.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 25℃
	U/l	158	134	182	12.00	24.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37℃
	U/l	125	106	144	9.50	19.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30℃
	U/l	97	83	111	7.00	14.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25℃
	U/l	173	147	199	13.00	26.00	Randox Gamma glutamyl.-3-carboxy-4-nitroanilide 37℃
	U/l	136	116	156	10.00	20.00	Randox Gamma glutamyl.-3-carboxy-4-nitroanilide 30℃
	U/l	107	91	123	8.00	16.00	Randox Gamma glutamyl.-3-carboxy-4-nitroanilide 25℃
GLDH	U/l	37	29	45	4.00	8.00	Triethanolamine buffer 50 mmol 37℃
	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

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Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Glucose	mmol/l	15.8	13.4	18.2	1.20	2.40	Hexokinase
	mg/dl	285	241	329	22.00	44.00	
	mmol/l	16.1	13.7	18.5	1.20	2.40	Glucose oxidase
	mg/dl	290	247	333	21.50	43.00	
alpha-HBDH	U/l	450	356	544	47.00	94.00	Oxobutyrate < 10 mmol/l 37℃
	U/l	340	269	411	35.50	71.00	Oxobutyrate < 10 mmol/l 30℃
	U/l	255	201	309	27.00	54.00	Oxobutyrate < 10 mmol/l 25℃
HDL - Cholesterol	mmol/l	3.27	2.78	3.76	0.25	0.49	Direct HDL PEGME
	mg/dl	126	107	145	9.50	19.00	
	mmol/l	3.31	2.82	3.80	0.25	0.49	Direct HDL Roche 3rd generation
	mg/dl	128	109	147	9.50	19.00	
Iron	µmol/l	38.8	31.8	45.8	3.50	7.00	Colorimetric without ppt.
	µg/dl	217	178	256	19.50	39.00	
Lactate	mmol/l	5.90	4.84	6.96	0.53	1.06	Colorimetric Lactate Oxidase
	mg/dl	53.2	43.6	62.8	4.80	9.60	
LD (LDH)	U/l	730	620	840	55.00	110.00	P->L German methods 37℃
	U/l	527	448	606	39.50	79.00	P->L German methods 30℃
	U/l	370	314	426	28.00	56.00	P->L German methods 25℃
	U/l	364	310	418	27.00	54.00	L->P IFCC 37℃
	U/l	263	224	302	19.50	39.00	L->P IFCC 30℃
	U/l	185	157	213	14.00	28.00	L->P IFCC 25℃
Lipase	U/l	64	51	77	6.50	13.00	Roche Colorimetric 37℃
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	

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RANDOX

HITACHI SERIES®

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
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	
Phosphate Inorganic	mmol/l	2.29	1.95	2.63	0.17	0.34	Phosphomolybdate UV
	mg/dl	7.10	6.05	8.15	0.53	1.05	
Potassium	mmol/l	6.31	5.80	6.82	0.26	0.51	ISE method - indirect
Protein Total	g/l	44.6	35.7	53.5	4.45	8.90	Biuret reaction end point
	g/dl	4.46	3.57	5.35	0.45	0.89	
Sodium	mmol/l	161	153	169	4.00	8.00	ISE method - indirect
TIBC	µmol/l	57.8	45.7	69.9	6.05	12.10	FE+UIBC(saturation with iron)
	µg/dl	323	255	391	34.00	68.00	
Triglycerides	mmol/l	2.80	2.35	3.25	0.23	0.45	Lipase/GPO-PAP no correction
	mg/dl	248	208	288	20.00	40.00	
	mmol/l	2.78	2.34	3.22	0.22	0.44	Lipase/GPO-PAP 0.11mmol/l correction
	mg/dl	246	207	285	19.50	39.00	
	mmol/l	2.79	2.34	3.24	0.23	0.45	L/G Kinase EP. no correction
	mg/dl	247	207	287	20.00	40.00	
Uric Acid (Urate)	mmol/l	0.56	0.49	0.63	0.04	0.07	Uricase peroxidase with ascorbate oxidase
	mg/dl	9.36	8.15	10.6	0.61	1.21	
	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	0.56	0.48	0.63	0.04	0.07	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	9.34	8.13	10.6	0.61	1.21	
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	

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RANDOX

ILab 600®/650®/Aries/Taurus

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

Analyte	unit	Target	Range low	Range 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	
Alkaline Phosphatase	U/l	336	285	387	25.50	51.00	AMP optimised to IFCC 37℃
	U/l	262	222	302	20.00	40.00	AMP optimised to IFCC 30℃
	U/l	215	182	248	16.50	33.00	AMP optimised to IFCC 25℃
ALT (GPT)	U/l	127	101	153	13.00	26.00	Tris buffer without P5P 37℃
	U/l	94	75	113	9.50	19.00	Tris buffer without P5P 30℃
	U/l	72	57	87	7.50	15.00	Tris buffer without P5P 25℃
Amylase Total	U/l	295	250	340	22.50	45.00	I.L. 2-chloro-pNPG3 37℃
AST (GOT)	U/l	157	126	188	15.50	31.00	Tris buffer without P5P 37℃
	U/l	106	85	127	10.50	21.00	Tris buffer without P5P 30℃
	U/l	75	60	90	7.50	15.00	Tris buffer without P5P 25℃
Bile Acids	µmol/l	44.9	35.9	53.9	4.50	9.00	Enzymatic Colorimetric
Bilirubin Total	µmol/l	82.0	64.8	99.2	8.60	17.20	Diazo with Sulphanilic Acid
	mg/dl	4.80	3.79	5.81	0.51	1.01	
Calcium	mmol/l	3.28	2.95	3.61	0.17	0.33	Cresolphthalein complexone
	mg/dl	13.1	11.8	14.4	0.65	1.30	
Cholesterol	mmol/l	7.35	6.39	8.31	0.48	0.96	Cholesterol Oxidase
	mg/dl	284	247	321	18.50	37.00	
Chloride	mmol/l	112	103	121	4.50	9.00	ISE indirect
CK Total	U/l	489	401	577	44.00	88.00	CK-NAC (IFCC) 37℃
	U/l	306	251	361	27.50	55.00	CK-NAC (IFCC) 30℃
	U/l	208	170	246	19.00	38.00	CK-NAC (IFCC) 25℃

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ILab 600®/650®/Aries/Taurus

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Creatinine	µmol/l	341	273	409	34.00	68.00	Alkaline picrate no deproteinization
	mg/dl	3.85	3.08	4.62	0.39	0.77	
D-3-Hydroxybutyrate	mmol/l	1.18	1.00	1.36	0.09	0.18	Tris buffer 100mmol pH 8.5
gamma-GT	U/l	152	129	175	11.50	23.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 37℃
	U/l	120	102	138	9.00	18.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 30℃
	U/l	94	80	108	7.00	14.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 25℃
	U/l	151	128	174	11.50	23.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37℃
	U/l	119	101	137	9.00	18.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30℃
	U/l	93	79	107	7.00	14.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25℃
Glucose	mmol/l	16.1	13.7	18.5	1.20	2.40	Hexokinase
	mg/dl	290	247	333	21.50	43.00	
	mmol/l	15.6	13.3	17.9	1.15	2.30	Glucose oxidase
	mg/dl	281	240	322	20.50	41.00	
Iron	µmol/l	40.5	33.2	47.8	3.65	7.30	Colorimetric without ppt.
	µg/dl	226	186	266	20.00	40.00	
LD (LDH)	U/l	750	638	862	56.00	112.00	P->L German methods 37℃
	U/l	542	461	623	40.50	81.00	P->L German methods 30℃
	U/l	380	323	437	28.50	57.00	P->L German methods 25℃
Magnesium	mmol/l	1.95	1.71	2.19	0.12	0.24	Enzymatic
	mg/dl	4.74	4.16	5.32	0.29	0.58	
Phosphate Inorganic	mmol/l	2.30	1.95	2.65	0.18	0.35	Phosphomolybdate enzymatic
	mg/dl	7.13	6.05	8.21	0.54	1.08	
	mmol/l	2.31	1.97	2.65	0.17	0.34	Phosphomolybdate UV
	mg/dl	7.16	6.11	8.21	0.53	1.05	

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ILab 600®/650®/Aries/Taurus

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Potassium	mmol/l	6.31	5.81	6.81	0.25	0.50	ISE method - indirect
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	
Sodium	mmol/l	160	152	168	4.00	8.00	ISE method - indirect
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	2.97	2.49	3.45	0.24	0.48	L/G Kinase EP. no correction
	mg/dl	263	220	306	21.50	43.00	
Uric Acid (Urate)	mmol/l	0.57	0.50	0.65	0.04	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.59	8.35	10.8	0.62	1.24	
Urea	mmol/l	19.7	16.7	22.7	1.50	3.00	Urease end point
	mg/dl	118	100	136	9.00	18.00	
	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	

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JOHNSON AND JOHNSON VITROS®

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Albumin	g/l	26.5	22.5	30.5	2.00	4.00	Ortho Vitros Microslide Systems
	g/dl	2.65	2.25	3.05	0.20	0.40	
	g/l	25.8	21.9	29.7	1.95	3.90	Vitros DT60/DT60 II/DTSC II
	g/dl	2.58	2.19	2.97	0.20	0.39	
Alkaline Phosphatase	U/l	193	164	222	14.50	29.00	Ortho Vitros Microslide Systems 37℃
	U/l	202	172	232	15.00	30.00	Vitros DT60/DT60 II/DTSC II 37℃
ALT (GPT)	U/l	144	115	173	14.50	29.00	Ortho Vitros Microslide Systems 37℃
	U/l	141	113	169	14.00	28.00	Vitros DT60/DT60 II/DTSC II 37℃
Amylase Total	U/l	170	144	196	13.00	26.00	Ortho Vitros Microslide Systems 37℃
AST (GOT)	U/l	195	156	234	19.50	39.00	Ortho Vitros Microslide visible slide 37℃
	U/l	188	150	226	19.00	38.00	Vitros DT60/DT60 II/DTSC II 37℃
Bicarbonate	mmol/l	17.5	13.8	21.2	1.85	3.70	Ortho Vitros Microslide Systems
Bilirubin Total	µmol/l	74.3	58.7	89.9	7.80	15.60	Vitros 250/500/700/950 Total Bilirubin
	mg/dl	4.35	3.43	5.27	0.46	0.92	
	µmol/l	73.6	58.2	89.0	7.70	15.40	Vitros 250/500/700/950 Total BUBC
	mg/dl	4.31	3.40	5.22	0.46	0.91	
Calcium	mmol/l	3.17	2.85	3.49	0.16	0.32	Ortho Vitros Microslide Systems
	mg/dl	12.7	11.4	14.0	0.65	1.30	
	mmol/l	3.17	2.85	3.49	0.16	0.32	Vitros DT60/DT60 II/DTSC II
	mg/dl	12.7	11.4	14.0	0.65	1.30	
Cholesterol	mmol/l	6.77	5.89	7.65	0.44	0.88	Ortho Vitros Microslide Systems
	mg/dl	261	227	295	17.00	34.00	

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ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

Analyte	unit	Target	Range low	Range high	1SD	2SD	methods
Cholesterol	mmol/l	7.34	6.38	8.30	0.48	0.96	Vitros DT60/DT60 II
	mg/dl	283	246	320	18.50	37.00	
Chloride	mmol/l	115	106	124	4.50	9.00	Ortho Vitros Microslide Systems
	mmol/l	115	106	124	4.50	9.00	Vitros DT60/DT60 II/DTE II
Cholinesterase	U/l	4771	3817	5725	477.00	954.00	Ortho Vitros Microslide Systems 37℃
CK Total	U/l	459	377	541	41.00	82.00	Ortho Vitros Microslide Systems 37℃
	U/l	433	355	511	39.00	78.00	Vitros DT60/DT60 II/DTSC II 37℃
Creatinine	µmol/l	373	298	448	37.50	75.00	Vitros DT60/DT60 II/DTSC II
	mg/dl	4.21	3.37	5.05	0.42	0.84	
	µmol/l	385	308	462	38.50	77.00	Vitros IDMS Traceable
	mg/dl	4.35	3.48	5.22	0.44	0.87	
gamma-GT	U/l	196	166	226	15.00	30.00	Ortho Vitros Microslide Systems 37℃
	U/l	193	164	222	14.50	29.00	Vitros DT60/DT60 II/DTSC II 37℃
Glucose	mmol/l	14.6	12.4	16.8	1.10	2.20	Ortho Vitros Microslide Systems
	mg/dl	263	223	303	20.00	40.00	
	mmol/l	14.9	12.7	17.1	1.10	2.20	Vitros DT60/DT60 II
	mg/dl	268	229	307	19.50	39.00	
HDL - Cholesterol	mmol/l	2.51	2.14	2.88	0.19	0.37	Vitros Magnetic HDL
	mg/dl	96.9	82.6	111	7.15	14.30	
	mmol/l	2.34	1.98	2.70	0.18	0.36	Vitros 5.1 FS microtip assay
	mg/dl	90.3	76.4	104	6.95	13.90	
	mmol/l	2.50	2.12	2.88	0.19	0.38	Vitros dHDL PTA/MgCl2 direct precipitation
	mg/dl	96.5	81.8	111	7.35	14.70	
Iron	µmol/l	41.4	33.9	48.9	3.75	7.50	Ortho Vitros Microslide Systems
	µg/dl	231	190	272	20.50	41.00	

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JOHNSON AND JOHNSON VITROS®

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

Analyte	unit	Target	Range low	Range high	1SD	2SD	methods
Lactate	mmol/l	5.27	4.32	6.22	0.48	0.95	Ortho Vitros Microslide Systems
	mg/dl	47.5	38.9	56.1	4.30	8.60	
LD (LDH)	U/l	1117	949	1285	84.00	168.00	Ortho Vitros Microslide Systems 37℃
	U/l	1079	917	1241	81.00	162.00	Vitros DT60/DT60 II/DTSC II 37℃
Lipase	U/l	738	592	884	73.00	146.00	Ortho Vitros Microslide Systems 37℃
Lithium	mmol/l	2.45	2.16	2.74	0.15	0.29	Ortho Vitros Microslide Systems
	mg/dl	1.70	1.50	1.90	0.10	0.20	
Magnesium	mmol/l	1.83	1.61	2.05	0.11	0.22	Ortho Vitros Microslide Systems
	mg/dl	4.45	3.91	4.99	0.27	0.54	
	mmol/l	1.90	1.68	2.12	0.11	0.22	Vitros DT60/DT60 II
	mg/dl	4.62	4.08	5.16	0.27	0.54	
Phosphate Inorganic	mmol/l	2.31	1.96	2.66	0.18	0.35	Ortho Vitros Microslide Systems
	mg/dl	7.16	6.08	8.24	0.54	1.08	
	mmol/l	2.34	1.99	2.69	0.18	0.35	Vitros DT60/DT60 II
	mg/dl	7.25	6.17	8.33	0.54	1.08	
Potassium	mmol/l	6.21	5.71	6.71	0.25	0.50	Ortho Vitros Microslide Systems
	mmol/l	6.16	5.67	6.65	0.25	0.49	Vitros DT60/DT60 II/DTE II
Protein Total	g/l	44.9	35.9	53.9	4.50	9.00	Ortho Vitros Microslide Systems
	g/dl	4.49	3.59	5.39	0.45	0.90	
	g/l	44.3	35.5	53.1	4.40	8.80	Vitros DT60/DT60 II
	g/dl	4.43	3.55	5.31	0.44	0.88	
PSA Total	ng/ml =	32.4	24.3	40.5	4.05	8.10	Ortho Vitros 3600/5600/ECi PSA II
Sodium	mmol/l	157	149	165	4.00	8.00	Ortho Vitros Microslide Systems
	mmol/l	159	151	167	4.00	8.00	Vitros DT60/DT60 II/DTE II

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JOHNSON AND JOHNSON VITROS®

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Thyroid Stimulating Hormone	µU/ml =	1.10	0.88	1.32	0.11	0.22	Vitros ECi
Triglycerides	mmol/l	3.29	2.76	3.82	0.27	0.53	Ortho Vitros Microslide Systems
	mg/dl	291	244	338	23.50	47.00	
	mmol/l	3.30	2.77	3.83	0.27	0.53	Vitros DT60/DT60 II
	mg/dl	292	245	339	23.50	47.00	
Uric Acid (Urate)	mmol/l	0.53	0.46	0.60	0.03	0.07	Ortho Vitros Microslide Systems
	mg/dl	8.90	7.74	10.1	0.58	1.16	
	mmol/l	0.55	0.48	0.62	0.04	0.07	Vitros DT60/DT60 II
	mg/dl	9.24	8.03	10.5	0.61	1.21	
Urea	mmol/l	17.9	15.2	20.6	1.35	2.70	Ortho Vitros Microslide Systems
	mg/dl	108	91.4	125	8.30	16.60	
	mmol/l	19.1	16.2	22.0	1.45	2.90	Vitros DT60/DT60 II
	mg/dl	115	97.4	133	8.80	17.60	
	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	

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Konelab 20/30/60®/Thermo Scientific Indiko Plus ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Albumin	g/l	28.4	24.1	32.7	2.15	4.30	Bromocresol Green
	g/dl	2.84	2.41	3.27	0.22	0.43	
Alkaline Phosphatase	U/l	516	438	594	39.00	78.00	Diethanolamine buffer DEA 37°C
	U/l	402	341	463	30.50	61.00	Diethanolamine buffer DEA 30°C
	U/l	330	280	380	25.00	50.00	Diethanolamine buffer DEA 25°C
	U/l	333	283	383	25.00	50.00	AMP optimised to IFCC 37℃
	U/l	259	220	298	19.50	39.00	AMP optimised to IFCC 30℃
	U/l	213	181	245	16.00	32.00	AMP optimised to IFCC 25℃
ALT (GPT)	U/l	145	116	174	14.50	29.00	Tris buffer without P5P 37℃
	U/l	107	86	128	10.50	21.00	Tris buffer without P5P 30℃
	U/l	82	65	99	8.50	17.00	Tris buffer without P5P 25℃
Amylase Total	U/l	249	212	286	18.50	37.00	bioMerieux 2-chloro-pNPG3 37°C
AST (GOT)	U/l	183	147	219	18.00	36.00	Tris buffer without P5P 37℃
	U/l	124	99	149	12.50	25.00	Tris buffer without P5P 30℃
	U/l	87	70	104	8.50	17.00	Tris buffer without P5P 25℃
Bilirubin Total	µmol/l	79.0	62.4	95.6	8.30	16.60	Diazo with Sulphanilic Acid
	mg/dl	4.62	3.65	5.59	0.49	0.97	
	µmol/l	79.6	62.9	96.3	8.35	16.70	Nitrobenzenediazonium salt
	mg/dl	4.66	3.68	5.64	0.49	0.98	
Calcium	mmol/l	3.32	2.99	3.65	0.17	0.33	Arsenazo III
	mg/dl	13.3	12.0	14.6	0.65	1.30	

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RANDOX

Konelab 20/30/60®/Thermo Scientific Indiko Plus ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

Analyte	unit	Target	Range low	Range high	1SD	2SD	methods
Cholesterol	mmol/l	7.36	6.41	8.31	0.48	0.95	Cholesterol Oxidase
	mg/dl	284	247	321	18.50	37.00	
Chloride	mmol/l	116	107	125	4.50	9.00	ISE direct
CK Total	U/l	547	448	646	49.50	99.00	CK-NAC (IFCC) 37℃
	U/l	342	280	404	31.00	62.00	CK-NAC (IFCC) 30℃
	U/l	232	190	274	21.00	42.00	CK-NAC (IFCC) 25℃
Creatinine	µmol/l	374	299	449	37.50	75.00	Alkaline picrate no deproteinization
	mg/dl	4.23	3.38	5.08	0.43	0.85	
	µmol/l	373	299	447	37.00	74.00	Creatinine PAP method
	mg/dl	4.21	3.38	5.04	0.42	0.83	
gamma-GT	U/l	160	136	184	12.00	24.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37℃
	U/l	126	107	145	9.50	19.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30℃
	U/l	99	84	114	7.50	15.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25℃
Glucose	mmol/l	16.1	13.7	18.5	1.20	2.40	Hexokinase
	mg/dl	290	247	333	21.50	43.00	
	mmol/l	15.8	13.4	18.2	1.20	2.40	Glucose oxidase
	mg/dl	285	241	329	22.00	44.00	
HDL - Cholesterol	mmol/l	3.05	2.59	3.51	0.23	0.46	Direct HDL PEGME
	mg/dl	118	100	136	9.00	18.00	
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	
LD (LDH)	U/l	758	644	872	57.00	114.00	P->L German methods 37℃
	U/l	547	465	629	41.00	82.00	P->L German methods 30℃
	U/l	384	327	441	28.50	57.00	P->L German methods 25℃
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	

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Konelab 20/30/60®/Thermo Scientific Indiko Plus ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Magnesium	mmol/l	1.61	1.42	1.80	0.10	0.19	Xylidyl Blue
	mg/dl	3.91	3.45	4.37	0.23	0.46	
Phosphate Inorganic	mmol/l	2.42	2.06	2.78	0.18	0.36	Phosphomolybdate UV
	mg/dl	7.50	6.39	8.61	0.56	1.11	
Potassium	mmol/l	6.10	5.61	6.59	0.25	0.49	ISE method - direct
Protein Total	g/l	46.2	37.0	55.4	4.60	9.20	Biuret reaction end point
	g/dl	4.62	3.70	5.54	0.46	0.92	
Sodium	mmol/l	156	148	164	4.00	8.00	ISE method - direct
Triglycerides	mmol/l	2.96	2.48	3.44	0.24	0.48	Lipase/GPO-PAP no correction
	mg/dl	262	219	305	21.50	43.00	
Uric Acid (Urate)	mmol/l	0.60	0.52	0.67	0.04	0.08	Uricase peroxidase with ascorbate oxidase
	mg/dl	10.0	8.70	11.3	0.65	1.30	
	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	9.64	8.40	10.9	0.62	1.24	
Urea	mmol/l	18.1	15.4	20.8	1.35	2.70	Urease kinetic
	mg/dl	109	92.6	125	8.20	16.40	
	mmol/l	18.1	15.4	20.8	1.35	2.70	BUN
	mg/dl	50.8	43.2	58.4	3.80	7.60	

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RANDOX

MEAN OF ALL INSTRUMENTS (Elec.)

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
alpha-1-globulin		6.8	5.2	8.4	0.82	1.63	% of total Protein (Beckman Capillary)
alpha-2-globulin		6.8	5.2	8.4	0.82	1.63	% of total Protein (Beckman Capillary)
Albumin (electrophoresis)		61.3	55.2	67.4	3.05	6.10	% of total Protein (Beckman Capillary)
beta-globulin		13.7	10.4	17.0	1.65	3.30	% of total Protein (Beckman Capillary)
gamma-globulin		11.4	8.7	14.1	1.37	2.74	% of total Protein (Beckman Capillary)

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RANDOX

MEAN OF ALL INSTRUMENTS

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Albumin	g/l	28.9	24.6	33.2	2.15	4.30	Bromocresol Green
	g/dl	2.89	2.46	3.32	0.22	0.43	
	g/l	26.9	22.9	30.9	2.00	4.00	Bromocresol Purple
	g/dl	2.69	2.29	3.09	0.20	0.40	
	g/l	26.5	22.5	30.5	2.00	4.00	Ortho Vitros Microslide Systems
	g/dl	2.65	2.25	3.05	0.20	0.40	
	g/l	25.8	21.9	29.7	1.95	3.90	Turbidimetric Assays
	g/dl	2.58	2.19	2.97	0.20	0.39	
Alkaline Phosphatase	U/l	353	300	406	26.50	53.00	p-Nitrophenylphosphate AMP 37℃
	U/l	275	234	316	20.50	41.00	p-Nitrophenylphosphate AMP 30℃
	U/l	226	192	260	17.00	34.00	p-Nitrophenylphosphate AMP 25℃
	U/l	193	164	222	14.50	29.00	Ortho Vitros Microslide Systems 37℃
	U/l	509	433	585	38.00	76.00	Diethanolamine buffer DEA 37°C
	U/l	397	337	457	30.00	60.00	Diethanolamine buffer DEA 30°C
	U/l	325	277	373	24.00	48.00	Diethanolamine buffer DEA 25°C
	U/l	350	298	402	26.00	52.00	AMP optimised to IFCC 37℃
	U/l	273	232	314	20.50	41.00	AMP optimised to IFCC 30℃
	U/l	224	190	258	17.00	34.00	AMP optimised to IFCC 25℃
ALT (GPT)	U/l	144	115	173	14.50	29.00	Ortho Vitros Microslide Systems 37℃
	U/l	164	131	197	16.50	33.00	Tris buffer with P5P 37℃
	U/l	121	97	145	12.00	24.00	Tris buffer with P5P 30℃
	U/l	92	74	110	9.00	18.00	Tris buffer with P5P 25℃

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MEAN OF ALL INSTRUMENTS

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
ALT (GPT)	U/l	133	106	160	13.50	27.00	Tris buffer without P5P 37℃
	U/l	98	78	118	10.00	20.00	Tris buffer without P5P 30℃
	U/l	75	60	90	7.50	15.00	Tris buffer without P5P 25℃
	U/l	127	102	152	12.50	25.00	Tris buffer SCE 37℃
	U/l	94	75	113	9.50	19.00	Tris buffer SCE 30℃
	U/l	72	57	87	7.50	15.00	Tris buffer SCE 25℃
Amylase Pancreatic	U/l	260	221	299	19.50	39.00	Immunoinhibition EPS substrate 37℃
	U/l	248	211	285	18.50	37.00	Roche liquid stable pNPG7 37°C
	U/l	283	241	325	21.00	42.00	Randox liquid stable pNPG7 37℃
Amylase Total	U/l	280	238	322	21.00	42.00	pNP Maltotrioside substrates 37℃
	U/l	279	237	321	21.00	42.00	Siemens - blocked pNPG7 37℃
	U/l	282	239	325	21.50	43.00	Biotrol - blocked pNPG7 37℃
	U/l	233	198	268	17.50	35.00	Randox - Ethylidene pNPG7 37°C
	U/l	308	262	354	23.00	46.00	Randox liquid stable pNPG7 37℃
	U/l	274	232	316	21.00	42.00	BM/Roche Colorimetric pNPG7 37℃
	U/l	290	247	333	21.50	43.00	Beckman Synchron CX4/CX5/CX7 37℃
	U/l	329	280	378	24.50	49.00	Siemens - maltopenta/hexaoside 37℃
	U/l	266	226	306	20.00	40.00	Saccharogenic 37℃
	U/l	311	264	358	23.50	47.00	Siemens 2-chloro-pNP linked substrate 37℃
	U/l	278	236	320	21.00	42.00	Roche Integra 2-chloro-pNPG7 37℃
	U/l	170	144	196	13.00	26.00	Ortho Vitros Microslide Systems 37℃
	U/l	277	235	319	21.00	42.00	Other Roche 2-chloro-pNPG7 37℃
	U/l	270	230	310	20.00	40.00	Roche liquid stable pNPG7 37°C
	U/l	336	286	386	25.00	50.00	Siemens 2-chloro-pNPG3 37℃

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MEAN OF ALL INSTRUMENTS

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Amylase Total	U/l	255	217	293	19.00	38.00	bioMerieux 2-chloro-pNPG3 37°C
	U/l	285	242	328	21.50	43.00	Beckman Olympus - blocked pNPG7 37℃
	U/l	296	251	341	22.50	45.00	Beckman Synchron AMY7 37℃
	U/l	289	246	332	21.50	43.00	I.L. 2-chloro-pNPG3 37℃
	U/l	317	270	364	23.50	47.00	Abbott Architect Non-IFCC Cal. 37℃
Apolipoprotein A-1	g/l	1.00	0.82	1.18	0.09	0.18	Immunoturbidimetric
	mg/dl	100	82.0	118	9.00	18.00	
Apolipoprotein B	g/l	0.55	0.45	0.64	0.05	0.10	Immunoturbidimetric
	mg/dl	54.6	44.8	64.4	4.90	9.80	
Acid Phosphatase (non-prostatic)	U/l	13.4	8.98	17.8	2.21	4.42	1-Naphthyl Phosphate substrate Kinetic 37℃
	U/l	8.30	5.56	11.0	1.37	2.74	1-Naphthyl Phosphate, Kinetic with Pentane diol Activation 37℃
Acid Phosphatase (Prostatic)	U/l	20.3	13.6	27.0	3.35	6.70	1-Naphthyl Phosphate substrate Kinetic 37℃
	U/l	27.6	18.5	36.7	4.55	9.10	1-Naphthyl Phosphate, Kinetic with Pentane diol Activation 37℃
Acid Phosphatase (Total)	U/l	33.7	22.6	44.8	5.55	11.10	1-Naphthyl Phosphate substrate Kinetic 37℃
	U/l	35.9	24.1	47.7	5.90	11.80	1-Naphthyl Phosphate, Kinetic with Pentane diol Activation 37℃
AST (GOT)	U/l	195	156	234	19.50	39.00	Ortho Vitros Microslide visible slide 37℃
	U/l	227	182	272	22.50	45.00	Tris buffer with P5P 37℃
	U/l	153	123	183	15.00	30.00	Tris buffer with P5P 30℃
	U/l	108	87	129	10.50	21.00	Tris buffer with P5P 25℃
	U/l	167	133	201	17.00	34.00	Tris buffer without P5P 37℃
	U/l	113	90	136	11.50	23.00	Tris buffer without P5P 30℃
	U/l	79	63	95	8.00	16.00	Tris buffer without P5P 25℃
	U/l	163	130	196	16.50	33.00	Tris buffer SCE 37℃
	U/l	110	88	132	11.00	22.00	Tris buffer SCE 30℃
	U/l	78	62	94	8.00	16.00	Tris buffer SCE 25℃

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MEAN OF ALL INSTRUMENTS

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Bile Acids	µmol/l	47.2	37.8	56.6	4.70	9.40	4th Generation Colorimetric
	µmol/l	48.6	38.9	58.3	4.85	9.70	5th Generation Colorimetric
Bicarbonate	mmol/l	15.6	12.4	18.8	1.60	3.20	Colorimetric
	mmol/l	17.5	13.8	21.2	1.85	3.70	Ortho Vitros Microslide Systems
	mmol/l	15.7	12.4	19.0	1.65	3.30	Differential rate pH change
	mmol/l	15.7	12.5	18.9	1.60	3.20	Enzymatic
	mmol/l	16.4	13.0	19.8	1.70	3.40	Ion selective electrode
Bilirubin Direct	µmol/l	24.6	19.4	29.8	2.60	5.20	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.44	1.13	1.75	0.16	0.31	
	µmol/l	27.2	21.5	32.9	2.85	5.70	Diazo with Sulphanilic Acid
	mg/dl	1.59	1.26	1.92	0.17	0.33	
	µmol/l	26.0	20.6	31.4	2.70	5.40	Roche JG factored
	mg/dl	1.52	1.21	1.83	0.16	0.31	
	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	28.5	22.5	34.5	3.00	6.00	Oxidation to Biliverdin
	mg/dl	1.67	1.32	2.02	0.18	0.35	
	µmol/l	29.0	22.9	35.1	3.05	6.10	Modified Jendrassik
	mg/dl	1.70	1.34	2.06	0.18	0.36	
Bilirubin Total	µmol/l	74.3	58.7	89.9	7.80	15.60	Vitros 250/500/700/950 Total Bilirubin
	mg/dl	4.35	3.43	5.27	0.46	0.92	
	µmol/l	73.6	58.2	89.0	7.70	15.40	Vitros 250/500/700/950 Total BUBC
	mg/dl	4.31	3.40	5.22	0.46	0.91	
	µmol/l	94.9	75.0	115	9.95	19.90	Diazo with Dichloroaniline (DCA)
	mg/dl	5.55	4.39	6.71	0.58	1.16	

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RANDOX

MEAN OF ALL INSTRUMENTS

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Bilirubin Total	µmol/l	81.8	64.6	99.0	8.60	17.20	Diazo with Sulphanilic Acid
	mg/dl	4.79	3.78	5.80	0.51	1.01	
	µmol/l	94.7	74.8	115	9.95	19.90	Dichlorophenyl Diazonium (DPD)
	mg/dl	5.54	4.38	6.70	0.58	1.16	
	µmol/l	80.2	63.4	97.0	8.40	16.80	Nitrobenzenediazonium salt
	mg/dl	4.69	3.71	5.67	0.49	0.98	
	µmol/l	77.8	61.5	94.1	8.15	16.30	Diazonium ion
	mg/dl	4.55	3.60	5.50	0.48	0.95	
	µmol/l	89.8	71.0	109	9.40	18.80	Oxidation to Biliverdin
	mg/dl	5.25	4.15	6.35	0.55	1.10	
	µmol/l	96.3	76.1	117	10.10	20.20	Modified Jendrassik
	mg/dl	5.63	4.45	6.81	0.59	1.18	
Calcium	mmol/l	3.14	2.83	3.45	0.16	0.31	Cresolphthalein complexone
	mg/dl	12.6	11.3	13.9	0.65	1.30	
	mmol/l	3.17	2.85	3.49	0.16	0.32	Ortho Vitros Microslide Systems
	mg/dl	12.7	11.4	14.0	0.65	1.30	
	mmol/l	3.08	2.77	3.39	0.16	0.31	Ion selective electrode
	mg/dl	12.3	11.1	13.5	0.60	1.20	
	mmol/l	3.00	2.70	3.30	0.15	0.30	Methylthymol blue
	mg/dl	12.0	10.8	13.2	0.60	1.20	
	mmol/l	3.16	2.84	3.48	0.16	0.32	Arsenazo III
	mg/dl	12.7	11.4	14.0	0.65	1.30	
	mmol/l	3.19	2.87	3.51	0.16	0.32	NM-BAPTA
	mg/dl	12.8	11.5	14.1	0.65	1.30	
Cholesterol	mmol/l	6.77	5.89	7.65	0.44	0.88	Ortho Vitros Microslide Systems
	mg/dl	261	227	295	17.00	34.00	

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MEAN OF ALL INSTRUMENTS

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Cholesterol	mmol/l	7.39	6.43	8.35	0.48	0.96	Cholesterol Oxidase
	mg/dl	285	248	322	18.50	37.00	
Chloride	mmol/l	115	106	124	4.50	9.00	Colorimetric
	mmol/l	115	106	124	4.50	9.00	Ortho Vitros Microslide Systems
	mmol/l	113	104	122	4.50	9.00	ISE indirect
	mmol/l	115	106	124	4.50	9.00	ISE direct
Cholinesterase	U/l	4771	3817	5725	477.00	954.00	Ortho Vitros Microslide Systems 37℃
	U/l	4970	3976	5964	497.00	994.00	Colorimetric Butyrylthiocholine 37℃
CK Total	U/l	459	377	541	41.00	82.00	Ortho Vitros Microslide Systems 37℃
	U/l	563	461	665	51.00	102.00	CK-NAC serum start (DGKC) 37℃
	U/l	352	289	415	31.50	63.00	CK-NAC serum start (DGKC) 30°C
	U/l	239	196	282	21.50	43.00	CK-NAC serum start (DGKC) 25°C
	U/l	555	455	655	50.00	100.00	CK-NAC substrate start (DGKC) 37℃
	U/l	347	285	409	31.00	62.00	CK-NAC substrate start (DGKC) 30℃
	U/l	236	193	279	21.50	43.00	CK-NAC substrate start (DGKC) 25℃
	U/l	561	460	662	50.50	101.00	CK-NAC (IFCC) 37℃
	U/l	351	288	414	31.50	63.00	CK-NAC (IFCC) 30℃
	U/l	238	196	280	21.00	42.00	CK-NAC (IFCC) 25℃
	U/l	561	460	662	50.50	101.00	Monothioglycerol 37℃
	U/l	351	288	414	31.50	63.00	Monothioglycerol 30℃
	U/l	238	196	280	21.00	42.00	Monothioglycerol 25℃
	U/l	512	420	604	46.00	92.00	Dithioerythritol 37℃
	U/l	321	263	379	29.00	58.00	Dithioerythritol 30℃
	U/l	218	179	257	19.50	39.00	Dithioerythritol 25℃

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RANDOX

MEAN OF ALL INSTRUMENTS

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
CK Total	U/l	504	413	595	45.50	91.00	Dithioerythritol (DTE) IFCC correlated 37℃
	U/l	316	259	373	28.50	57.00	Dithioerythritol (DTE) IFCC correlated 30℃
	U/l	214	176	252	19.00	38.00	Dithioerythritol (DTE) IFCC correlated 25℃
Copper	µmol/l	27.4	21.9	32.9	2.75	5.50	Atomic absorption
	µg/dl	174	139	209	17.50	35.00	
	µmol/l	26.1	20.9	31.3	2.60	5.20	Colorimetric
	µg/dl	166	133	199	16.50	33.00	
Cortisol	nmol/l	1021	766	1276	127.50	255.00	Roche Cobas E411
	µg/dl	36.8	27.6	46.0	4.60	9.20	
Creatinine	µmol/l	336	269	403	33.50	67.00	Alkaline picrate with deproteinization
	mg/dl	3.80	3.04	4.56	0.38	0.76	
	µmol/l	353	282	424	35.50	71.00	Alkaline picrate no deproteinization
	mg/dl	3.99	3.19	4.79	0.40	0.80	
	µmol/l	373	298	448	37.50	75.00	Randox Enzymatic UV method
	mg/dl	4.21	3.37	5.05	0.42	0.84	
	µmol/l	376	301	451	37.50	75.00	Creatinine PAP method
	mg/dl	4.25	3.40	5.10	0.43	0.85	
	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	367	294	440	36.50	73.00	Jaffe rate blanked
	mg/dl	4.15	3.32	4.98	0.42	0.83	
	µmol/l	368	295	441	36.50	73.00	Jaffe rate blanked comp. (-26 µmol/l)
	mg/dl	4.16	3.33	4.99	0.42	0.83	
	µmol/l	358	287	429	35.50	71.00	Jaffe rate blanked compensated (-18 µmol/l)
	mg/dl	4.05	3.24	4.86	0.41	0.81	

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ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Creatinine	µmol/l	385	308	462	38.50	77.00	Vitros IDMS Traceable
	mg/dl	4.35	3.48	5.22	0.44	0.87	
	µmol/l	371	297	445	37.00	74.00	IDMS traceable
	mg/dl	4.19	3.36	5.02	0.42	0.83	
D-3-Hydroxybutyrate	mmol/l	1.19	1.01	1.37	0.09	0.18	Tris buffer 100mmol pH 8.5
Digoxin	nmol/l	3.53	2.82	4.24	0.36	0.71	Immunoturbidimetric
	ng/ml	2.76	2.20	3.32	0.28	0.56	
Folate	nmol/l	24.7	18.8	30.6	2.95	5.90	Roche Cobas E411
	ng/ml	10.9	8.29	13.5	1.31	2.61	
Free T4	pmol/l	49.8	37.4	62.2	6.20	12.40	Abbott Architect
	ng/dl	3.88	2.92	4.84	0.48	0.96	
	pg/ml	38.8	29.2	48.4	4.80	9.60	Abbott Architect
	pmol/l	66.2	49.6	82.8	8.30	16.60	Siemens Centaur XP/XPT/Classic
	ng/dl	5.16	3.87	6.45	0.65	1.29	
	pg/ml	51.6	38.7	64.5	6.45	12.90	Siemens Centaur XP/XPT/Classic
	pmol/l	64.7	48.5	80.9	8.10	16.20	Beckman DxI800
	ng/dl	5.05	3.78	6.32	0.64	1.27	
	pg/ml	50.5	37.8	63.2	6.35	12.70	Beckman DxI800
	pmol/l	74.6	55.9	93.3	9.35	18.70	BioMerieux Vidas
	ng/dl	5.82	4.36	7.28	0.73	1.46	
	pg/ml	58.2	43.6	72.8	7.30	14.60	BioMerieux Vidas
	pmol/l	76.3	57.2	95.4	9.55	19.10	Roche Elecsys
	ng/dl	5.95	4.46	7.44	0.75	1.49	
	pg/ml	59.5	44.6	74.4	7.45	14.90	Roche Elecsys
	pmol/l	75.2	56.4	94.0	9.40	18.80	Roche Modular E170
	ng/dl	5.87	4.40	7.34	0.74	1.47	
	pg/ml	58.7	44.0	73.4	7.35	14.70	Roche Modular E170

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MEAN OF ALL INSTRUMENTS

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Free T4	pmol/l	71.8	53.8	89.8	9.00	18.00	Roche Cobas E411
	ng/dl	5.60	4.20	7.00	0.70	1.40	
	pg/ml	56.0	42.0	70.0	7.00	14.00	Roche Cobas E411
	pmol/l	73.7	55.3	92.1	9.20	18.40	Roche Cobas 6000/8000
	ng/dl	5.75	4.31	7.19	0.72	1.44	
	pg/ml	57.5	43.1	71.9	7.20	14.40	Roche Cobas 6000/8000
Gentamicin	µmol/l	19.3	15.4	23.2	1.95	3.90	Immunoturbidimetric
	µg/ml	9.23	7.36	11.1	0.94	1.87	
gamma-GT	U/l	155	132	178	11.50	23.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 37℃
	U/l	122	104	140	9.00	18.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 30℃
	U/l	96	81	111	7.50	15.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 25℃
	U/l	196	166	226	15.00	30.00	Ortho Vitros Microslide Systems 37℃
	U/l	135	115	155	10.00	20.00	Gamma glutamyl-4-nitroanilide 37℃
	U/l	106	91	121	7.50	15.00	Gamma glutamyl-4-nitroanilide 30℃
	U/l	83	71	95	6.00	12.00	Gamma glutamyl-4-nitroanilide 25°C
	U/l	167	142	192	12.50	25.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37℃
	U/l	132	112	152	10.00	20.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30℃
	U/l	103	88	118	7.50	15.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25℃
	U/l	173	147	199	13.00	26.00	Randox Gamma glutamyl.-3-carboxy-4-nitroanilide 37℃
	U/l	136	116	156	10.00	20.00	Randox Gamma glutamyl.-3-carboxy-4-nitroanilide 30℃
	U/l	107	91	123	8.00	16.00	Randox Gamma glutamyl.-3-carboxy-4-nitroanilide 25℃
GLDH	U/l	30	24	36	3.00	6.00	Triethanolamine buffer 50 mmol 37℃
	U/l	23	18	28	2.50	5.00	Triethanolamine buffer 50 mmol 30°C
	U/l	19	15	23	2.00	4.00	Triethanolamine buffer 50 mmol 25°C

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MEAN OF ALL INSTRUMENTS

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Glucose	mmol/l	14.6	12.4	16.8	1.10	2.20	Ortho Vitros Microslide Systems
	mg/dl	263	223	303	20.00	40.00	
	mmol/l	16.2	13.8	18.6	1.20	2.40	Glucose dehydrogenase
	mg/dl	292	249	335	21.50	43.00	
	mmol/l	15.8	13.5	18.1	1.15	2.30	Hexokinase
	mg/dl	285	243	327	21.00	42.00	
	mmol/l	15.6	13.2	18.0	1.20	2.40	Oxygen electrode
	mg/dl	281	238	324	21.50	43.00	
	mmol/l	15.6	13.2	18.0	1.20	2.40	Glucose oxidase
	mg/dl	281	238	324	21.50	43.00	
alpha-HBDH	U/l	450	356	544	47.00	94.00	Oxobutyrate < 10 mmol/l 37℃
	U/l	340	269	411	35.50	71.00	Oxobutyrate < 10 mmol/l 30℃
	U/l	255	201	309	27.00	54.00	Oxobutyrate < 10 mmol/l 25℃
HDL - Cholesterol	mmol/l	3.10	2.64	3.56	0.23	0.46	Direct HDL PPD
	mg/dl	120	102	138	9.00	18.00	
	mmol/l	2.67	2.27	3.07	0.20	0.40	Direct HDL Immunoseparation
	mg/dl	103	87.6	118	7.70	15.40	
	mmol/l	2.51	2.14	2.88	0.19	0.37	Vitros Magnetic HDL
	mg/dl	96.9	82.6	111	7.15	14.30	
	mmol/l	3.14	2.67	3.61	0.24	0.47	Direct HDL PEGME
	mg/dl	121	103	139	9.00	18.00	
	mmol/l	2.64	2.25	3.03	0.20	0.39	Direct Clearance Method
	mg/dl	102	86.9	117	7.55	15.10	
	mmol/l	2.50	2.12	2.88	0.19	0.38	Vitros dHDL PTA/MgCl2 direct precipitation
	mg/dl	96.5	81.8	111	7.35	14.70	

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Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
HDL - Cholesterol	mmol/l	3.27	2.78	3.76	0.25	0.49	Direct HDL Roche 3rd generation
	mg/dl	126	107	145	9.50	19.00	
	mmol/l	2.65	2.26	3.04	0.20	0.39	HDL - Ultra
	mg/dl	102	87.2	117	7.40	14.80	
Immunoglobulin A	g/l	1.57	1.18	1.96	0.20	0.39	Immunoturbidimetric
	mg/dl	157	118	196	19.50	39.00	
Immunoglobulin G	g/l	5.75	4.72	6.78	0.52	1.03	Immunoturbidimetric
	mg/dl	575	472	678	51.50	103.00	
Immunoglobulin M	g/l	0.75	0.60	0.90	0.07	0.15	Immunoturbidimetric
	mg/dl	74.6	59.7	89.5	7.45	14.90	
Iron	µmol/l	38.9	31.9	45.9	3.50	7.00	Colorimetric with ppt.
	µg/dl	217	178	256	19.50	39.00	
	µmol/l	38.8	31.8	45.8	3.50	7.00	Colorimetric without ppt.
	µg/dl	217	178	256	19.50	39.00	
	µmol/l	41.4	33.9	48.9	3.75	7.50	Ortho Vitros Microslide Systems
	µg/dl	231	190	272	20.50	41.00	
Lactate	mmol/l	5.75	4.72	6.78	0.52	1.03	Ion selective electrode
	mg/dl	51.8	42.5	61.1	4.65	9.30	
	mmol/l	5.72	4.69	6.75	0.52	1.03	Colorimetric Lactate Oxidase
	mg/dl	51.5	42.3	60.7	4.60	9.20	
	mmol/l	5.27	4.32	6.22	0.48	0.95	Ortho Vitros Microslide Systems
	mg/dl	47.5	38.9	56.1	4.30	8.60	
	mmol/l	5.93	4.87	6.99	0.53	1.06	Enzymatic Electrode
	mg/dl	53.4	43.9	62.9	4.75	9.50	

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Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Lactate	mmol/l	5.29	4.34	6.24	0.48	0.95	UV LDH
	mg/dl	47.7	39.1	56.3	4.30	8.60	
LAP	U/l	14	12	16	1.00	2.00	NAGEL 37℃
LD (LDH)	U/l	1117	949	1285	84.00	168.00	Ortho Vitros Microslide Systems 37℃
	U/l	337	286	388	25.50	51.00	L->P 37℃
	U/l	243	206	280	18.50	37.00	L->P 30℃
	U/l	171	145	197	13.00	26.00	L->P 25℃
	U/l	850	723	977	63.50	127.00	P->L Scandinavian & Dutch 37℃
	U/l	614	522	706	46.00	92.00	P->L Scandinavian & Dutch 30°C
	U/l	431	367	495	32.00	64.00	P->L Scandinavian & Dutch 25°C
	U/l	733	623	843	55.00	110.00	P->L German methods 37℃
	U/l	529	450	608	39.50	79.00	P->L German methods 30℃
	U/l	372	316	428	28.00	56.00	P->L German methods 25℃
	U/l	742	631	853	55.50	111.00	P->L SFBC 37℃
	U/l	536	456	616	40.00	80.00	P->L SFBC 30℃
	U/l	376	320	432	28.00	56.00	P->L SFBC 25℃
	U/l	372	316	428	28.00	56.00	L->P IFCC 37℃
	U/l	269	228	310	20.50	41.00	L->P IFCC 30℃
	U/l	189	160	218	14.50	29.00	L->P IFCC 25℃
Lipase	U/l	71	57	85	7.00	14.00	Other Colorimetric 37℃
	U/l	738	592	884	73.00	146.00	Ortho Vitros Microslide Systems 37℃
	U/l	62	50	74	6.00	12.00	Roche Colorimetric 37℃
	U/l	420	337	503	41.50	83.00	Randox Turbidimetric with colipase 37℃
	U/l	79	64	94	7.50	15.00	Randox Colorimetric 37℃
Lithium	mmol/l	2.45	2.16	2.74	0.15	0.29	Ortho Vitros Microslide Systems
	mg/dl	1.70	1.50	1.90	0.10	0.20	

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ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Lithium	mmol/l	1.98	1.74	2.22	0.12	0.24	Flame photometry
	mg/dl	1.37	1.21	1.53	0.08	0.16	
	mmol/l	2.07	1.82	2.32	0.13	0.25	Ion selective electrode
	mg/dl	1.44	1.26	1.62	0.09	0.18	
	mmol/l	2.03	1.79	2.27	0.12	0.24	Spectrophotometric
	mg/dl	1.41	1.24	1.58	0.09	0.17	
	mmol/l	1.97	1.73	2.21	0.12	0.24	Randox Colorimetric
	mg/dl	1.37	1.20	1.54	0.09	0.17	
Magnesium	mmol/l	1.80	1.59	2.01	0.11	0.21	Arsenazo III
	mg/dl	4.37	3.86	4.88	0.26	0.51	
	mmol/l	1.83	1.61	2.05	0.11	0.22	Ortho Vitros Microslide Systems
	mg/dl	4.45	3.91	4.99	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	1.80	1.58	2.02	0.11	0.22	Xylidyl Blue
	mg/dl	4.37	3.84	4.90	0.27	0.53	
	mmol/l	1.80	1.58	2.02	0.11	0.22	Methylthymol blue
	mg/dl	4.37	3.84	4.90	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	
	mmol/l	1.80	1.59	2.01	0.11	0.21	Enzymatic
	mg/dl	4.37	3.86	4.88	0.26	0.51	
NEFA	mmol/l	0.57	0.49	0.66	0.04	0.09	Colorimetric
Osmolality	mOsm/kg	342	274	410	34.00	68.00	Calculated

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Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Osmolality	mOsm/kg	379	303	455	38.00	76.00	Freezing point depression
	mOsm/kg	377	301	453	38.00	76.00	Vapour pressure
Paracetamol	mmol/l	0.62	0.50	0.75	0.06	0.13	Colorimetric
	mg/l	94.3	75.3	113	9.50	19.00	
Phosphate Inorganic	mmol/l	2.31	1.96	2.66	0.18	0.35	Ortho Vitros Microslide Systems
	mg/dl	7.16	6.08	8.24	0.54	1.08	
	mmol/l	2.31	1.96	2.66	0.18	0.35	Phosphomolybdate enzymatic
	mg/dl	7.16	6.08	8.24	0.54	1.08	
	mmol/l	2.29	1.95	2.63	0.17	0.34	Phosphomolybdate UV
	mg/dl	7.10	6.05	8.15	0.53	1.05	
Potassium	mmol/l	6.21	5.71	6.71	0.25	0.50	Ortho Vitros Microslide Systems
	mmol/l	6.39	5.88	6.90	0.26	0.51	Enzymatic
	mmol/l	5.99	5.51	6.47	0.24	0.48	Flame photometry
	mmol/l	6.18	5.68	6.68	0.25	0.50	ISE method - direct
	mmol/l	6.26	5.76	6.76	0.25	0.50	ISE method - indirect
	mmol/l	6.26	5.76	6.76	0.25	0.50	Colorimetric
Protein Total	g/l	44.9	35.9	53.9	4.50	9.00	Ortho Vitros Microslide Systems
	g/dl	4.49	3.59	5.39	0.45	0.90	
	g/l	44.8	35.9	53.7	4.45	8.90	Biuret reaction end point
	g/dl	4.48	3.59	5.37	0.45	0.89	
	g/l	43.6	34.9	52.3	4.35	8.70	Biuret reaction kinetic
	g/dl	4.36	3.49	5.23	0.44	0.87	
PSA Total	ng/ml =	22.8	17.1	28.5	2.85	5.70	Tosoh AIA360
	ng/ml =	33.4	25.1	41.7	4.15	8.30	Roche Elecsys Modular E170
	ng/ml =	33.3	25.0	41.6	4.15	8.30	Beckman Access standardised to Hybritech

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MEAN OF ALL INSTRUMENTS

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
PSA Total	ng/ml =	27.9	20.9	34.9	3.50	7.00	Siemens Centaur XP/XPT/Classic
	ng/ml =	27.9	20.9	34.9	3.50	7.00	Abbott Architect
	ng/ml =	35.3	26.5	44.1	4.40	8.80	Cobas E411
	ng/ml =	34.4	25.8	43.0	4.30	8.60	Roche Cobas 6000/8000
	ng/ml =	32.4	24.3	40.5	4.05	8.10	Ortho Vitros 3600/5600/ECi PSA II
Salicylate	mmol/l	0.87	0.70	1.04	0.09	0.17	Enzymatic
	mg/dl	12.0	9.59	14.4	1.21	2.41	
Sodium	mmol/l	157	149	165	4.00	8.00	Ortho Vitros Microslide Systems
	mmol/l	156	148	164	4.00	8.00	Enzymatic
	mmol/l	156	148	164	4.00	8.00	Flame photometry
	mmol/l	157	149	165	4.00	8.00	ISE method - direct
	mmol/l	159	151	167	4.00	8.00	ISE method - indirect
	mmol/l	156	148	164	4.00	8.00	Colorimetric
Theophylline	µmol/l	118	94.4	142	11.80	23.60	Immunoturbidimetric
	µg/ml	21.3	17.0	25.6	2.15	4.30	
Thyroid Stimulating Hormone	µU/ml =	0.96	0.77	1.15	0.10	0.19	Abbott Architect
	µU/ml =	1.19	0.95	1.43	0.12	0.24	bioMerieux VIDAS TSH
	µU/ml =	1.10	0.88	1.32	0.11	0.22	Vitros ECi
	µU/ml =	1.25	1.00	1.50	0.13	0.25	Roche Elecsys
	µU/ml =	1.25	1.00	1.50	0.13	0.25	Roche Modular E170
	µU/ml =	1.07	0.86	1.28	0.11	0.21	Tosoh AIA360
	µU/ml =	1.25	1.00	1.50	0.13	0.25	Roche Cobas E411
	µU/ml =	1.24	0.99	1.49	0.12	0.25	Roche Cobas 6000/8000
	µU/ml =	1.18	0.94	1.42	0.12	0.24	Beckman DxI800 Hyper TSH
	µU/ml =	1.06	0.85	1.27	0.10	0.21	Siemens Centaur XP/XPT/Classic TSH3-Ultra

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RANDOX

MEAN OF ALL INSTRUMENTS

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
TIBC	µmol/l	56.6	44.7	68.5	5.95	11.90	Removal of excess free iron
	µg/dl	316	250	382	33.00	66.00	
	µmol/l	61.0	48.2	73.8	6.40	12.80	FE+UIBC(saturation with iron)
	µg/dl	341	269	413	36.00	72.00	
	µmol/l	55.5	43.9	67.1	5.80	11.60	Direct Colorimetric
	µg/dl	310	245	375	32.50	65.00	
	µmol/l	59.0	46.6	71.4	6.20	12.40	Randox Direct
	µg/dl	330	260	400	35.00	70.00	
Tobramycin	µmol/l	15.7	12.6	18.8	1.55	3.10	Immunoturbidimetric
	µg/ml	7.35	5.90	8.80	0.73	1.45	
Total T3	nmol/l	3.35	2.51	4.19	0.42	0.84	Abbott Architect
	ng/ml	2.18	1.63	2.73	0.28	0.55	
	ng/dl	218	163	273	27.50	55.00	Abbott Architect
	nmol/l	5.21	3.90	6.52	0.66	1.31	Siemens Centaur XP/XPT/Classic
	ng/ml	3.39	2.54	4.24	0.43	0.85	
	ng/dl	339	254	424	42.50	85.00	Siemens Centaur XP/XPT/Classic
	nmol/l	3.95	2.96	4.94	0.50	0.99	BioMerieux Vidas
	ng/ml	2.57	1.93	3.21	0.32	0.64	
	ng/dl	257	193	321	32.00	64.00	BioMerieux Vidas
	nmol/l	4.60	3.45	5.75	0.58	1.15	Roche Cobas E411
	ng/ml	2.99	2.25	3.73	0.37	0.74	
	ng/dl	299	225	373	37.00	74.00	Roche Cobas E411
	nmol/l	4.35	3.26	5.44	0.55	1.09	Roche Cobas 6000/8000
	ng/ml	2.83	2.12	3.54	0.36	0.71	
	ng/dl	283	212	354	35.50	71.00	Roche Cobas 6000/8000

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MEAN OF ALL INSTRUMENTS

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Total T4	nmol/l	227	170	284	28.50	57.00	Abbott Architect
	µg/dl	17.7	13.3	22.1	2.20	4.40	
	ng/ml	177	133	221	22.00	44.00	Abbott Architect
	nmol/l	217	162	272	27.50	55.00	Siemens Centaur XP/XPT/Classic
	µg/dl	16.9	12.6	21.2	2.15	4.30	
	ng/ml	169	126	212	21.50	43.00	Siemens Centaur XP/XPT/Classic
	nmol/l	211	158	264	26.50	53.00	BioMerieux Vidas
	µg/dl	16.5	12.3	20.7	2.10	4.20	
	ng/ml	165	123	207	21.00	42.00	BioMerieux Vidas
	nmol/l	211	158	264	26.50	53.00	Siemens Immulite 1000
	µg/dl	16.5	12.3	20.7	2.10	4.20	
	ng/ml	165	123	207	21.00	42.00	Siemens Immulite 1000
	nmol/l	198	149	247	24.50	49.00	Siemens Immulite 2000/2500
	µg/dl	15.4	11.6	19.2	1.90	3.80	
	ng/ml	154	116	192	19.00	38.00	Siemens Immulite 2000/2500
	nmol/l	185	139	231	23.00	46.00	Roche Modular E170
	µg/dl	14.4	10.8	18.0	1.80	3.60	
	ng/ml	144	108	180	18.00	36.00	Roche Modular E170
	nmol/l	192	144	240	24.00	48.00	Roche Cobas E411
	µg/dl	15.0	11.2	18.8	1.90	3.80	
	ng/ml	150	112	188	19.00	38.00	Roche Cobas E411
	nmol/l	189	142	236	23.50	47.00	Roche Cobas 6000/8000
	µg/dl	14.7	11.1	18.3	1.80	3.60	
	ng/ml	147	111	183	18.00	36.00	Roche Cobas 6000/8000
Transferrin	g/l	1.80	1.44	2.16	0.18	0.36	Immunoturbidimetric
	mg/dl	180	144	216	18.00	36.00	

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MEAN OF ALL INSTRUMENTS

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Triglycerides	mmol/l	2.84	2.39	3.29	0.23	0.45	Lipase/GPO-PAP no correction
	mg/dl	251	212	290	19.50	39.00	
	mmol/l	2.83	2.38	3.28	0.23	0.45	Lipase/GPO-PAP 0.11mmol/l correction
	mg/dl	250	211	289	19.50	39.00	
	mmol/l	2.92	2.45	3.39	0.24	0.47	L/G Kinase EP. no correction
	mg/dl	258	217	299	20.50	41.00	
	mmol/l	2.78	2.33	3.23	0.23	0.45	L/G kinase EP. 0.11 mmol/l correction
	mg/dl	246	206	286	20.00	40.00	
	mmol/l	2.87	2.41	3.33	0.23	0.46	Lipase/Glycerol Dehydrogenase
	mg/dl	254	213	295	20.50	41.00	
	mmol/l	3.29	2.76	3.82	0.27	0.53	Ortho Vitros Microslide Systems
	mg/dl	291	244	338	23.50	47.00	
Uric Acid (Urate)	mmol/l	0.53	0.46	0.60	0.03	0.07	Ortho Vitros Microslide Systems
	mg/dl	8.90	7.74	10.1	0.58	1.16	
	mmol/l	0.55	0.48	0.62	0.04	0.07	Uricase catalase 340nm
	mg/dl	9.27	8.08	10.5	0.60	1.19	
	mmol/l	0.56	0.49	0.64	0.04	0.07	Uricase peroxidase with ascorbate oxidase
	mg/dl	9.48	8.23	10.7	0.63	1.25	
	mmol/l	0.55	0.48	0.62	0.04	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.26	8.05	10.5	0.61	1.21	
	mmol/l	0.55	0.48	0.62	0.04	0.07	Spectrophotometric at 280-290
	mg/dl	9.26	8.05	10.5	0.61	1.21	
	mmol/l	0.55	0.48	0.62	0.04	0.07	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	9.26	8.06	10.5	0.60	1.20	

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MEAN OF ALL INSTRUMENTS

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Urea	mmol/l	17.9	15.2	20.6	1.35	2.70	Ortho Vitros Microslide Systems
	mg/dl	108	91.4	125	8.30	16.60	
	mmol/l	18.7	15.9	21.5	1.40	2.80	Urease end point
	mg/dl	112	95.6	128	8.20	16.40	
	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	18.4	15.7	21.1	1.35	2.70	Urease hypochlorite
	mg/dl	111	94.4	128	8.30	16.60	
	mmol/l	19.5	16.6	22.4	1.45	2.90	Urease Berthelot
	mg/dl	117	99.8	134	8.60	17.20	
	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	
Vitamin B12	pmol/l	204	163	245	20.50	41.00	Roche Cobas E411
	pg/ml	276	221	331	27.50	55.00	
Zinc	µmol/l	34.5	27.6	41.4	3.45	6.90	Atomic absorption
	µg/dl	225	180	270	22.50	45.00	
	µmol/l	34.7	27.8	41.6	3.45	6.90	Colorimetric with deproteinisation
	µg/dl	227	182	272	22.50	45.00	

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RANDOX

MINDRAY BS-200/300/400

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Albumin	g/l	29.8	25.4	34.2	2.20	4.40	Bromocresol Green
	g/dl	2.98	2.54	3.42	0.22	0.44	
Alkaline Phosphatase	U/l	426	362	490	32.00	64.00	Agappe - DGKC-SCE 37℃
	U/l	332	282	382	25.00	50.00	Agappe - DGKC-SCE 30℃
	U/l	272	231	313	20.50	41.00	Agappe - DGKC-SCE 25℃
ALT (GPT)	U/l	140	112	168	14.00	28.00	Tris buffer without P5P 37℃
	U/l	104	83	125	10.50	21.00	Tris buffer without P5P 30℃
	U/l	79	63	95	8.00	16.00	Tris buffer without P5P 25℃
AST (GOT)	U/l	170	136	204	17.00	34.00	Tris buffer without P5P 37℃
	U/l	115	92	138	11.50	23.00	Tris buffer without P5P 30℃
	U/l	81	65	97	8.00	16.00	Tris buffer without P5P 25℃
Bilirubin Direct	µmol/l	27.2	21.5	32.9	2.85	5.70	Oxidation to Biliverdin
	mg/dl	1.59	1.26	1.92	0.17	0.33	
Bilirubin Total	µmol/l	86.3	68.1	105	9.10	18.20	Oxidation to Biliverdin
	mg/dl	5.05	3.98	6.12	0.54	1.07	
Calcium	mmol/l	3.15	2.83	3.47	0.16	0.32	Arsenazo III
	mg/dl	12.6	11.3	13.9	0.65	1.30	
Cholesterol	mmol/l	7.39	6.43	8.35	0.48	0.96	Cholesterol Oxidase
	mg/dl	285	248	322	18.50	37.00	
CK Total	U/l	532	436	628	48.00	96.00	CK-NAC (IFCC) 37℃
	U/l	333	273	393	30.00	60.00	CK-NAC (IFCC) 30℃
	U/l	226	185	267	20.50	41.00	CK-NAC (IFCC) 25℃

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MINDRAY BS-200/300/400

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Creatinine	µmol/l	317	254	380	31.50	63.00	Alkaline picrate with deproteinization
	mg/dl	3.58	2.87	4.29	0.36	0.71	
	µmol/l	333	267	399	33.00	66.00	Alkaline picrate no deproteinization
	mg/dl	3.76	3.02	4.50	0.37	0.74	
	µmol/l	358	286	430	36.00	72.00	Randox Enzymatic UV method
	mg/dl	4.05	3.23	4.87	0.41	0.82	
gamma-GT	U/l	148	126	170	11.00	22.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 37℃
	U/l	117	99	135	9.00	18.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 30℃
	U/l	91	78	104	6.50	13.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 25℃
	U/l	160	136	184	12.00	24.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37℃
	U/l	126	107	145	9.50	19.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30℃
	U/l	99	84	114	7.50	15.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25℃
Glucose	mmol/l	15.9	13.5	18.3	1.20	2.40	Glucose oxidase
	mg/dl	287	243	331	22.00	44.00	
Iron	µmol/l	37.8	31.0	44.6	3.40	6.80	Colorimetric without ppt.
	µg/dl	211	173	249	19.00	38.00	
LD (LDH)	U/l	741	630	852	55.50	111.00	P->L German methods 37℃
	U/l	535	455	615	40.00	80.00	P->L German methods 30℃
	U/l	376	319	433	28.50	57.00	P->L German methods 25℃
	U/l	725	616	834	54.50	109.00	P->L SFBC 37℃
	U/l	523	445	601	39.00	78.00	P->L SFBC 30℃
	U/l	368	312	424	28.00	56.00	P->L SFBC 25℃
	U/l	367	312	422	27.50	55.00	L->P IFCC 37℃
	U/l	265	225	305	20.00	40.00	L->P IFCC 30℃
	U/l	186	158	214	14.00	28.00	L->P IFCC 25℃

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RANDOX

MINDRAY BS-200/300/400

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Phosphate Inorganic	mmol/l	2.36	2.00	2.72	0.18	0.36	Phosphomolybdate UV
	mg/dl	7.32	6.20	8.44	0.56	1.12	
Potassium	mmol/l	6.05	5.57	6.53	0.24	0.48	ISE method - direct
Protein Total	g/l	47.2	37.8	56.6	4.70	9.40	Biuret reaction end point
	g/dl	4.72	3.78	5.66	0.47	0.94	
Sodium	mmol/l	158	150	166	4.00	8.00	ISE method - direct
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	
Uric Acid (Urate)	mmol/l	0.59	0.51	0.66	0.04	0.08	Uricase peroxidase with ascorbate oxidase
	mg/dl	9.88	8.60	11.2	0.64	1.28	
	mmol/l	0.56	0.49	0.64	0.04	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.48	8.25	10.7	0.62	1.23	
	mmol/l	0.55	0.48	0.62	0.04	0.07	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	9.17	7.98	10.4	0.60	1.19	
Urea	mmol/l	20.5	17.4	23.6	1.55	3.10	Urease end point
	mg/dl	123	105	141	9.00	18.00	
	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	18.6	15.8	21.4	1.40	2.80	Urease hypochlorite
	mg/dl	112	95.0	129	8.50	17.00	
	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	

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RANDOX

PRESTIGE 24i

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Albumin	g/l	28.2	23.9	32.5	2.15	4.30	Bromocresol Green
	g/dl	2.82	2.39	3.25	0.22	0.43	
Alkaline Phosphatase	U/l	458	389	527	34.50	69.00	Diethanolamine buffer DEA 37°C
	U/l	357	303	411	27.00	54.00	Diethanolamine buffer DEA 30°C
	U/l	293	249	337	22.00	44.00	Diethanolamine buffer DEA 25°C
ALT (GPT)	U/l	145	116	174	14.50	29.00	Tris buffer without P5P 37℃
	U/l	107	86	128	10.50	21.00	Tris buffer without P5P 30℃
	U/l	82	65	99	8.50	17.00	Tris buffer without P5P 25℃
AST (GOT)	U/l	173	138	208	17.50	35.00	Tris buffer without P5P 37℃
	U/l	117	93	141	12.00	24.00	Tris buffer without P5P 30℃
	U/l	82	66	98	8.00	16.00	Tris buffer without P5P 25℃
Bilirubin Total	µmol/l	81.0	64.0	98.0	8.50	17.00	Diazo with Dichloroaniline (DCA)
	mg/dl	4.74	3.74	5.74	0.50	1.00	
Calcium	mmol/l	3.40	3.06	3.74	0.17	0.34	Arsenazo III
	mg/dl	13.6	12.3	14.9	0.65	1.30	
Cholesterol	mmol/l	7.50	6.53	8.47	0.49	0.97	Cholesterol Oxidase
	mg/dl	290	252	328	19.00	38.00	
CK Total	U/l	563	462	664	50.50	101.00	CK-NAC (IFCC) 37℃
	U/l	352	289	415	31.50	63.00	CK-NAC (IFCC) 30℃
	U/l	239	196	282	21.50	43.00	CK-NAC (IFCC) 25℃
Creatinine	µmol/l	339	271	407	34.00	68.00	Alkaline picrate no deproteinization
	mg/dl	3.83	3.06	4.60	0.39	0.77	

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RANDOX

PRESTIGE 24i

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Creatinine	µmol/l	369	295	443	37.00	74.00	Jaffe rate blanked comp. (-26 µmol/l)
	mg/dl	4.17	3.33	5.01	0.42	0.84	
Glucose	mmol/l	16.1	13.7	18.5	1.20	2.40	Glucose oxidase
	mg/dl	290	247	333	21.50	43.00	
HDL - Cholesterol	mmol/l	2.11	1.79	2.43	0.16	0.32	Direct HDL Immunoseparation
	mg/dl	81.4	69.1	93.7	6.15	12.30	
Phosphate Inorganic	mmol/l	2.38	2.02	2.74	0.18	0.36	Phosphomolybdate UV
	mg/dl	7.38	6.26	8.50	0.56	1.12	
Protein Total	g/l	44.6	35.7	53.5	4.45	8.90	Biuret reaction end point
	g/dl	4.46	3.57	5.35	0.45	0.89	
Triglycerides	mmol/l	2.79	2.34	3.24	0.23	0.45	Lipase/GPO-PAP no correction
	mg/dl	247	207	287	20.00	40.00	
Uric Acid (Urate)	mmol/l	0.56	0.49	0.64	0.04	0.07	Uricase peroxidase with ascorbate oxidase
	mg/dl	9.48	8.25	10.7	0.62	1.23	
	mmol/l	0.53	0.46	0.60	0.03	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	8.95	7.80	10.1	0.58	1.15	
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	

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Roche Cobas 6000 c501 e601

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Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Albumin	g/l	29.8	25.3	34.3	2.25	4.50	Bromocresol Green
	g/dl	2.98	2.53	3.43	0.23	0.45	
	g/l	26.3	22.4	30.2	1.95	3.90	Bromocresol Purple
	g/dl	2.63	2.24	3.02	0.20	0.39	
	g/l	25.7	21.8	29.6	1.95	3.90	Turbidimetric Assays
	g/dl	2.57	2.18	2.96	0.20	0.39	
Alkaline Phosphatase	U/l	245	208	282	18.50	37.00	Roche Integra AMP buffer 37℃
	U/l	191	162	220	14.50	29.00	Roche Integra AMP buffer 30℃
	U/l	157	133	181	12.00	24.00	Roche Integra AMP buffer 25℃
ALT (GPT)	U/l	128	103	153	12.50	25.00	Tris buffer without P5P 37℃
	U/l	95	76	114	9.50	19.00	Tris buffer without P5P 30℃
	U/l	72	58	86	7.00	14.00	Tris buffer without P5P 25℃
Amylase Pancreatic	U/l	247	210	284	18.50	37.00	Randox EPS Liquid and BM/Roche EPS Liquid 37℃
Amylase Total	U/l	269	229	309	20.00	40.00	BM/Roche Colorimetric pNPG7 37℃
	U/l	268	228	308	20.00	40.00	Roche Integra 2-chloro-pNPG7 37℃
	U/l	268	228	308	20.00	40.00	Roche liquid stable pNPG7 37°C
AST (GOT)	U/l	162	130	194	16.00	32.00	Tris buffer without P5P 37℃
	U/l	110	88	132	11.00	22.00	Tris buffer without P5P 30℃
	U/l	77	62	92	7.50	15.00	Tris buffer without P5P 25℃
Bile Acids	µmol/l	49.3	39.4	59.2	4.95	9.90	Enzymatic Colorimetric
Bicarbonate	mmol/l	15.6	12.3	18.9	1.65	3.30	Colorimetric

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Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Bicarbonate	mmol/l	15.3	12.2	18.4	1.55	3.10	Enzymatic
Bilirubin Direct	µmol/l	26.3	20.8	31.8	2.75	5.50	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.54	1.22	1.86	0.16	0.32	
	µmol/l	26.4	20.9	31.9	2.75	5.50	Diazo with Sulphanilic Acid
	mg/dl	1.54	1.22	1.86	0.16	0.32	
	µmol/l	26.0	20.5	31.5	2.75	5.50	Roche JG factored
	mg/dl	1.52	1.20	1.84	0.16	0.32	
	µmol/l	26.2	20.7	31.7	2.75	5.50	Diazo with Dichloroaniline (DCA)
	mg/dl	1.53	1.21	1.85	0.16	0.32	
Bilirubin Total	µmol/l	76.9	60.7	93.1	8.10	16.20	Diazo with Sulphanilic Acid
	mg/dl	4.50	3.55	5.45	0.48	0.95	
	µmol/l	76.9	60.8	93.0	8.05	16.10	Dichlorophenyl Diazonium (DPD)
	mg/dl	4.50	3.56	5.44	0.47	0.94	
	µmol/l	77.2	61.0	93.4	8.10	16.20	Diazonium ion
	mg/dl	4.52	3.57	5.47	0.48	0.95	
Calcium	mmol/l	3.20	2.88	3.52	0.16	0.32	Cresolphthalein complexone
	mg/dl	12.8	11.5	14.1	0.65	1.30	
	mmol/l	3.19	2.87	3.51	0.16	0.32	NM-BAPTA
	mg/dl	12.8	11.5	14.1	0.65	1.30	
Cholesterol	mmol/l	7.39	6.43	8.35	0.48	0.96	Cholesterol Oxidase
	mg/dl	285	248	322	18.50	37.00	
Chloride	mmol/l	110	101	119	4.50	9.00	ISE indirect
Cholinesterase	U/l	4883	3907	5859	488.00	976.00	Colorimetric Butyrylthiocholine 37℃
CK Total	U/l	580	476	684	52.00	104.00	CK-NAC substrate start (DGKC) 37℃
	U/l	363	298	428	32.50	65.00	CK-NAC substrate start (DGKC) 30℃
	U/l	247	202	292	22.50	45.00	CK-NAC substrate start (DGKC) 25℃

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			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
CK Total	U/l	585	480	690	52.50	105.00	CK-NAC (IFCC) 37℃
	U/l	366	300	432	33.00	66.00	CK-NAC (IFCC) 30℃
	U/l	249	204	294	22.50	45.00	CK-NAC (IFCC) 25℃
Creatinine	µmol/l	376	301	451	37.50	75.00	Alkaline picrate no deproteinization
	mg/dl	4.25	3.40	5.10	0.43	0.85	
	µmol/l	379	303	455	38.00	76.00	Randox Enzymatic UV method
	mg/dl	4.28	3.42	5.14	0.43	0.86	
	µmol/l	379	303	455	38.00	76.00	Roche Creatinine Plus
	mg/dl	4.28	3.42	5.14	0.43	0.86	
	µmol/l	369	295	443	37.00	74.00	Jaffe rate blanked
	mg/dl	4.17	3.33	5.01	0.42	0.84	
	µmol/l	364	291	437	36.50	73.00	Jaffe rate blanked comp. (-26 µmol/l)
	mg/dl	4.11	3.29	4.93	0.41	0.82	
	µmol/l	362	290	434	36.00	72.00	Jaffe rate blanked compensated (-18 µmol/l)
	mg/dl	4.09	3.28	4.90	0.41	0.81	
D-3-Hydroxybutyrate	mmol/l	1.23	1.04	1.42	0.10	0.19	Tris buffer 100mmol pH 8.5
Free T4	pmol/l	73.7	55.3	92.1	9.20	18.40	Roche Cobas 6000/8000
	ng/dl	5.75	4.31	7.19	0.72	1.44	
	pg/ml	57.5	43.1	71.9	7.20	14.40	Roche Cobas 6000/8000
gamma-GT	U/l	148	126	170	11.00	22.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 37℃
	U/l	117	99	135	9.00	18.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 30℃
	U/l	91	78	104	6.50	13.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 25℃
	U/l	168	143	193	12.50	25.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37℃
	U/l	132	113	151	9.50	19.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30℃
	U/l	104	88	120	8.00	16.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25℃

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Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
GLDH	U/l	29	23	35	3.00	6.00	Triethanolamine buffer 50 mmol 37℃
	U/l	22	18	26	2.00	4.00	Triethanolamine buffer 50 mmol 30°C
	U/l	18	14	22	2.00	4.00	Triethanolamine buffer 50 mmol 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	13.4	18.0	1.15	2.30	Glucose oxidase
	mg/dl	283	241	325	21.00	42.00	
HDL - Cholesterol	mmol/l	3.27	2.78	3.76	0.25	0.49	Direct HDL Roche 3rd generation
	mg/dl	126	107	145	9.50	19.00	
Iron	µmol/l	38.6	31.7	45.5	3.45	6.90	Colorimetric with ppt.
	µg/dl	216	177	255	19.50	39.00	
	µmol/l	38.7	31.7	45.7	3.50	7.00	Colorimetric without ppt.
	µg/dl	216	177	255	19.50	39.00	
Lactate	mmol/l	5.72	4.69	6.75	0.52	1.03	Colorimetric Lactate Oxidase
	mg/dl	51.5	42.3	60.7	4.60	9.20	
LD (LDH)	U/l	711	604	818	53.50	107.00	P->L German methods 37℃
	U/l	513	436	590	38.50	77.00	P->L German methods 30℃
	U/l	360	306	414	27.00	54.00	P->L German methods 25℃
	U/l	369	314	424	27.50	55.00	L->P IFCC 37℃
	U/l	266	227	305	19.50	39.00	L->P IFCC 30℃
	U/l	187	159	215	14.00	28.00	L->P IFCC 25℃
Lipase	U/l	61	49	73	6.00	12.00	Roche Colorimetric 37℃
Lithium	mmol/l	2.06	1.81	2.31	0.13	0.25	Spectrophotometric
	mg/dl	1.43	1.26	1.60	0.09	0.17	

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Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Magnesium	mmol/l	1.79	1.58	2.00	0.11	0.21	Xylidyl Blue
	mg/dl	4.35	3.84	4.86	0.26	0.51	
	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	
Osmolality	mOsm/kg	346	276	416	35.00	70.00	Calculated
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	2.27	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	6.30	5.80	6.80	0.25	0.50	ISE method - indirect
Protein Total	g/l	44.2	35.4	53.0	4.40	8.80	Biuret reaction end point
	g/dl	4.42	3.54	5.30	0.44	0.88	
	g/l	43.4	34.7	52.1	4.35	8.70	Biuret reaction kinetic
	g/dl	4.34	3.47	5.21	0.44	0.87	
PSA Total	ng/ml =	34.5	25.9	43.1	4.30	8.60	Roche Cobas 6000/8000
Sodium	mmol/l	160	152	168	4.00	8.00	ISE method - indirect
Thyroid Stimulating Hormone	µU/ml =	1.24	0.99	1.49	0.12	0.25	Roche Cobas 6000/8000
TIBC	µmol/l	60.4	47.7	73.1	6.35	12.70	FE+UIBC(saturation with iron)
	µg/dl	338	267	409	35.50	71.00	
Total T3	nmol/l	4.35	3.26	5.44	0.55	1.09	Roche Cobas 6000/8000
	ng/ml	2.83	2.12	3.54	0.36	0.71	
	ng/dl	283	212	354	35.50	71.00	Roche Cobas 6000/8000
Total T4	nmol/l	189	142	236	23.50	47.00	Roche Cobas 6000/8000
	µg/dl	14.7	11.1	18.3	1.80	3.60	
	ng/ml	147	111	183	18.00	36.00	Roche Cobas 6000/8000

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Triglycerides	mmol/l	2.78	2.33	3.23	0.23	0.45	Lipase/GPO-PAP no correction
	mg/dl	246	206	286	20.00	40.00	
	mmol/l	2.80	2.35	3.25	0.23	0.45	Lipase/GPO-PAP 0.11mmol/l correction
	mg/dl	248	208	288	20.00	40.00	
	mmol/l	2.76	2.32	3.20	0.22	0.44	L/G Kinase EP. no correction
	mg/dl	244	205	283	19.50	39.00	
Uric Acid (Urate)	mmol/l	0.55	0.47	0.62	0.04	0.07	Uricase peroxidase with ascorbate oxidase
	mg/dl	9.16	7.96	10.4	0.60	1.20	
	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	9.21	8.01	10.4	0.60	1.20	
Urea	mmol/l	19.2	16.4	22.0	1.40	2.80	Urease kinetic
	mg/dl	115	98.6	131	8.20	16.40	
	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	

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Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Albumin	g/l	29.5	25.0	34.0	2.25	4.50	Bromocresol Green
	g/dl	2.95	2.50	3.40	0.23	0.45	
Alkaline Phosphatase	U/l	240	204	276	18.00	36.00	Roche Integra AMP buffer 37℃
	U/l	187	159	215	14.00	28.00	Roche Integra AMP buffer 30℃
	U/l	153	130	176	11.50	23.00	Roche Integra AMP buffer 25℃
ALT (GPT)	U/l	126	101	151	12.50	25.00	Tris buffer without P5P 37℃
	U/l	93	75	111	9.00	18.00	Tris buffer without P5P 30℃
	U/l	71	57	85	7.00	14.00	Tris buffer without P5P 25℃
Amylase Total	U/l	281	238	324	21.50	43.00	pNP Maltotrioside substrates 37℃
	U/l	276	235	317	20.50	41.00	Roche liquid stable pNPG7 37°C
AST (GOT)	U/l	160	128	192	16.00	32.00	Tris buffer without P5P 37℃
	U/l	108	87	129	10.50	21.00	Tris buffer without P5P 30℃
	U/l	76	61	91	7.50	15.00	Tris buffer without P5P 25℃
Bicarbonate	mmol/l	14.8	11.7	17.9	1.55	3.10	Enzymatic
Bilirubin Direct	µmol/l	27.6	21.8	33.4	2.90	5.80	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.61	1.28	1.94	0.17	0.33	
	µmol/l	29.1	23.0	35.2	3.05	6.10	Diazo with Sulphanilic Acid
	mg/dl	1.70	1.35	2.05	0.18	0.35	
Bilirubin Total	µmol/l	77.6	61.3	93.9	8.15	16.30	Diazo with Sulphanilic Acid
	mg/dl	4.54	3.59	5.49	0.48	0.95	
	µmol/l	76.3	60.3	92.3	8.00	16.00	Dichlorophenyl Diazonium (DPD)
	mg/dl	4.46	3.53	5.39	0.47	0.93	

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Bilirubin Total	µmol/l	79.7	62.9	96.5	8.40	16.80	Diazonium ion
	mg/dl	4.66	3.68	5.64	0.49	0.98	
Calcium	mmol/l	3.15	2.83	3.47	0.16	0.32	Cresolphthalein complexone
	mg/dl	12.6	11.3	13.9	0.65	1.30	
	mmol/l	3.23	2.91	3.55	0.16	0.32	NM-BAPTA
	mg/dl	12.9	11.7	14.1	0.60	1.20	
Cholesterol	mmol/l	7.59	6.60	8.58	0.50	0.99	Cholesterol Oxidase
	mg/dl	293	255	331	19.00	38.00	
Chloride	mmol/l	116	106	126	5.00	10.00	ISE indirect
CK Total	U/l	580	475	685	52.50	105.00	CK-NAC (IFCC) 37℃
	U/l	363	297	429	33.00	66.00	CK-NAC (IFCC) 30℃
	U/l	247	202	292	22.50	45.00	CK-NAC (IFCC) 25℃
Creatinine	µmol/l	339	272	406	33.50	67.00	Alkaline picrate with deproteinization
	mg/dl	3.83	3.07	4.59	0.38	0.76	
	µmol/l	331	264	398	33.50	67.00	Alkaline picrate no deproteinization
	mg/dl	3.74	2.98	4.50	0.38	0.76	
	µmol/l	369	295	443	37.00	74.00	Roche Creatinine Plus
	mg/dl	4.17	3.33	5.01	0.42	0.84	
	µmol/l	333	267	399	33.00	66.00	Jaffe rate blanked
	mg/dl	3.76	3.02	4.50	0.37	0.74	
	µmol/l	359	287	431	36.00	72.00	Jaffe rate blanked compensated (-18 µmol/l)
	mg/dl	4.06	3.24	4.88	0.41	0.82	
gamma-GT	U/l	162	138	186	12.00	24.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37℃
	U/l	128	109	147	9.50	19.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30℃
	U/l	100	85	115	7.50	15.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25℃

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Roche Cobas C111®

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Glucose	mmol/l	16.0	13.6	18.4	1.20	2.40	Hexokinase
	mg/dl	288	245	331	21.50	43.00	
	mmol/l	15.5	13.1	17.9	1.20	2.40	Glucose oxidase
	mg/dl	279	236	322	21.50	43.00	
HDL - Cholesterol	mmol/l	3.08	2.61	3.55	0.24	0.47	Direct HDL Roche 3rd generation
	mg/dl	119	101	137	9.00	18.00	
Iron	µmol/l	38.1	31.2	45.0	3.45	6.90	Colorimetric without ppt.
	µg/dl	213	174	252	19.50	39.00	
LD (LDH)	U/l	385	327	443	29.00	58.00	L->P IFCC 37℃
	U/l	278	236	320	21.00	42.00	L->P IFCC 30℃
	U/l	195	166	224	14.50	29.00	L->P IFCC 25℃
Magnesium	mmol/l	1.81	1.60	2.02	0.11	0.21	Xylidyl Blue
	mg/dl	4.40	3.89	4.91	0.26	0.51	
	mmol/l	1.77	1.56	1.98	0.11	0.21	Chlorphosphonazo III
	mg/dl	4.30	3.79	4.81	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	2.32	1.98	2.66	0.17	0.34	Phosphomolybdate UV
	mg/dl	7.19	6.14	8.24	0.53	1.05	
Potassium	mmol/l	6.14	5.65	6.63	0.25	0.49	ISE method - indirect
Protein Total	g/l	44.7	35.8	53.6	4.45	8.90	Biuret reaction end point
	g/dl	4.47	3.58	5.36	0.45	0.89	
Sodium	mmol/l	154	146	162	4.00	8.00	ISE method - indirect
Triglycerides	mmol/l	2.83	2.38	3.28	0.23	0.45	Lipase/GPO-PAP no correction
	mg/dl	250	211	289	19.50	39.00	

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Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Triglycerides	mmol/l	2.79	2.34	3.24	0.23	0.45	Lipase/GPO-PAP 0.11mmol/l correction
	mg/dl	247	207	287	20.00	40.00	
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	9.42	8.20	10.6	0.61	1.22	
	mmol/l	0.53	0.47	0.60	0.03	0.07	Spectrophotometric at 280-290
	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 with ascorbate oxidase @ 546nm
	mg/dl	9.11	7.93	10.3	0.59	1.18	
Urea	mmol/l	18.7	15.9	21.5	1.40	2.80	Urease kinetic
	mg/dl	112	95.6	128	8.20	16.40	
	mmol/l	18.3	15.5	21.1	1.40	2.80	Urease hypochlorite
	mg/dl	110	93.2	127	8.40	16.80	
	mmol/l	18.7	15.9	21.5	1.40	2.80	BUN
	mg/dl	52.5	44.6	60.4	3.95	7.90	

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Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Albumin	g/l	29.8	25.3	34.3	2.25	4.50	Bromocresol Green
	g/dl	2.98	2.53	3.43	0.23	0.45	
	g/l	26.5	22.5	30.5	2.00	4.00	Bromocresol Purple
	g/dl	2.65	2.25	3.05	0.20	0.40	
Alkaline Phosphatase	U/l	242	206	278	18.00	36.00	Roche Integra AMP buffer 37℃
	U/l	189	160	218	14.50	29.00	Roche Integra AMP buffer 30℃
	U/l	155	132	178	11.50	23.00	Roche Integra AMP buffer 25℃
ALT (GPT)	U/l	129	103	155	13.00	26.00	Tris buffer without P5P 37℃
	U/l	95	76	114	9.50	19.00	Tris buffer without P5P 30℃
	U/l	73	58	88	7.50	15.00	Tris buffer without P5P 25℃
Amylase Total	U/l	272	231	313	20.50	41.00	Roche liquid stable pNPG7 37°C
AST (GOT)	U/l	163	130	196	16.50	33.00	Tris buffer without P5P 37℃
	U/l	110	88	132	11.00	22.00	Tris buffer without P5P 30℃
	U/l	78	62	94	8.00	16.00	Tris buffer without P5P 25℃
Bicarbonate	mmol/l	15.3	12.1	18.5	1.60	3.20	Enzymatic
Bilirubin Direct	µmol/l	25.4	20.0	30.8	2.70	5.40	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.49	1.17	1.81	0.16	0.32	
	µmol/l	25.5	20.2	30.8	2.65	5.30	Diazo with Sulphanilic Acid
	mg/dl	1.49	1.18	1.80	0.16	0.31	
	µmol/l	25.1	19.9	30.3	2.60	5.20	Diazo with Dichloroaniline (DCA)
	mg/dl	1.47	1.16	1.78	0.16	0.31	

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			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Bilirubin Total	µmol/l	77.3	61.0	93.6	8.15	16.30	Diazo with Sulphanilic Acid
	mg/dl	4.52	3.57	5.47	0.48	0.95	
	µmol/l	76.9	60.8	93.0	8.05	16.10	Dichlorophenyl Diazonium (DPD)
	mg/dl	4.50	3.56	5.44	0.47	0.94	
	µmol/l	76.8	60.7	92.9	8.05	16.10	Diazonium ion
	mg/dl	4.49	3.55	5.43	0.47	0.94	
Calcium	mmol/l	3.19	2.87	3.51	0.16	0.32	Cresolphthalein complexone
	mg/dl	12.8	11.5	14.1	0.65	1.30	
	mmol/l	3.16	2.85	3.47	0.16	0.31	Arsenazo III
	mg/dl	12.7	11.4	14.0	0.65	1.30	
	mmol/l	3.21	2.89	3.53	0.16	0.32	NM-BAPTA
	mg/dl	12.9	11.6	14.2	0.65	1.30	
Cholesterol	mmol/l	7.42	6.45	8.39	0.49	0.97	Cholesterol Oxidase
	mg/dl	286	249	323	18.50	37.00	
Chloride	mmol/l	111	102	120	4.50	9.00	ISE indirect
Cholinesterase	U/l	5014	4012	6016	501.00	1002.00	Colorimetric Butyrylthiocholine 37℃
CK Total	U/l	586	481	691	52.50	105.00	CK-NAC (IFCC) 37℃
	U/l	367	301	433	33.00	66.00	CK-NAC (IFCC) 30℃
	U/l	249	204	294	22.50	45.00	CK-NAC (IFCC) 25℃
Creatinine	µmol/l	367	294	440	36.50	73.00	Alkaline picrate no deproteinization
	mg/dl	4.15	3.32	4.98	0.42	0.83	
	µmol/l	388	311	465	38.50	77.00	Randox Enzymatic UV method
	mg/dl	4.38	3.51	5.25	0.44	0.87	
	µmol/l	384	308	460	38.00	76.00	Roche Creatinine Plus
	mg/dl	4.34	3.48	5.20	0.43	0.86	

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Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Creatinine	µmol/l	369	295	443	37.00	74.00	Jaffe rate blanked
	mg/dl	4.17	3.33	5.01	0.42	0.84	
	µmol/l	371	297	445	37.00	74.00	Jaffe rate blanked comp. (-26 µmol/l)
	mg/dl	4.19	3.36	5.02	0.42	0.83	
gamma-GT	U/l	150	128	172	11.00	22.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 37℃
	U/l	118	101	135	8.50	17.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 30℃
	U/l	93	79	107	7.00	14.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 25℃
	U/l	171	145	197	13.00	26.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37℃
	U/l	135	114	156	10.50	21.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30℃
	U/l	106	89	123	8.50	17.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25℃
Glucose	mmol/l	15.8	13.4	18.2	1.20	2.40	Hexokinase
	mg/dl	285	241	329	22.00	44.00	
	mmol/l	15.7	13.4	18.0	1.15	2.30	Glucose oxidase
	mg/dl	283	241	325	21.00	42.00	
HDL - Cholesterol	mmol/l	3.03	2.57	3.49	0.23	0.46	Direct HDL PEGME
	mg/dl	117	99.2	135	8.90	17.80	
	mmol/l	3.07	2.61	3.53	0.23	0.46	Direct HDL Roche 3rd generation
	mg/dl	119	101	137	9.00	18.00	
Iron	µmol/l	38.5	31.5	45.5	3.50	7.00	Colorimetric without ppt.
	µg/dl	215	176	254	19.50	39.00	
Lactate	mmol/l	5.80	4.75	6.85	0.53	1.05	Colorimetric Lactate Oxidase
	mg/dl	52.3	42.8	61.8	4.75	9.50	
LD (LDH)	U/l	717	609	825	54.00	108.00	P->L German methods 37℃
	U/l	518	440	596	39.00	78.00	P->L German methods 30℃
	U/l	364	309	419	27.50	55.00	P->L German methods 25℃

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			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
LD (LDH)	U/l	369	313	425	28.00	56.00	L->P IFCC 37℃
	U/l	266	226	306	20.00	40.00	L->P IFCC 30℃
	U/l	187	159	215	14.00	28.00	L->P IFCC 25℃
Lipase	U/l	60	48	72	6.00	12.00	Roche Colorimetric 37℃
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	1.80	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	2.27	1.93	2.61	0.17	0.34	Phosphomolybdate enzymatic
	mg/dl	7.04	5.98	8.10	0.53	1.06	
	mmol/l	2.29	1.95	2.63	0.17	0.34	Phosphomolybdate UV
	mg/dl	7.10	6.05	8.15	0.53	1.05	
Potassium	mmol/l	6.33	5.82	6.84	0.26	0.51	ISE method - indirect
Protein Total	g/l	44.3	35.4	53.2	4.45	8.90	Biuret reaction end point
	g/dl	4.43	3.54	5.32	0.45	0.89	
	g/l	44.5	35.6	53.4	4.45	8.90	Biuret reaction kinetic
	g/dl	4.45	3.56	5.34	0.45	0.89	
Sodium	mmol/l	160	152	168	4.00	8.00	ISE method - indirect
Triglycerides	mmol/l	2.79	2.34	3.24	0.23	0.45	Lipase/GPO-PAP no correction
	mg/dl	247	207	287	20.00	40.00	
	mmol/l	2.75	2.31	3.19	0.22	0.44	L/G Kinase EP. no correction
	mg/dl	243	204	282	19.50	39.00	
	mmol/l	2.76	2.32	3.20	0.22	0.44	L/G kinase EP. 0.11 mmol/l correction
	mg/dl	244	205	283	19.50	39.00	
Uric Acid (Urate)	mmol/l	0.55	0.48	0.63	0.04	0.07	Uricase peroxidase with ascorbate oxidase
	mg/dl	9.31	8.10	10.5	0.61	1.21	

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Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Uric Acid (Urate)	mmol/l	0.55	0.48	0.62	0.04	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.27	8.06	10.5	0.61	1.21	
	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	
Urea	mmol/l	19.4	16.5	22.3	1.45	2.90	Urease kinetic
	mg/dl	117	99.2	135	8.90	17.80	
	mmol/l	19.4	16.5	22.3	1.45	2.90	BUN
	mg/dl	54.4	46.2	62.6	4.10	8.20	

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Roche Cobas c701 / c702 / c711

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			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	
Alkaline Phosphatase	U/l	207	176	238	15.50	31.00	Roche Integra AMP buffer 37℃
	U/l	161	137	185	12.00	24.00	Roche Integra AMP buffer 30℃
	U/l	132	112	152	10.00	20.00	Roche Integra AMP buffer 25℃
ALT (GPT)	U/l	130	104	156	13.00	26.00	Tris buffer without P5P 37℃
	U/l	96	77	115	9.50	19.00	Tris buffer without P5P 30℃
	U/l	73	59	87	7.00	14.00	Tris buffer without P5P 25℃
Amylase Pancreatic	U/l	248	211	285	18.50	37.00	Randox EPS Liquid and BM/Roche EPS Liquid 37℃
Amylase Total	U/l	275	234	316	20.50	41.00	BM/Roche Colorimetric pNPG7 37℃
	U/l	267	227	307	20.00	40.00	Roche liquid stable pNPG7 37°C
AST (GOT)	U/l	164	131	197	16.50	33.00	Tris buffer without P5P 37℃
	U/l	111	89	133	11.00	22.00	Tris buffer without P5P 30℃
	U/l	78	62	94	8.00	16.00	Tris buffer without P5P 25℃
Bicarbonate	mmol/l	15.6	12.3	18.9	1.65	3.30	Enzymatic
Bilirubin Direct	µmol/l	27.4	21.7	33.1	2.85	5.70	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.60	1.27	1.93	0.17	0.33	
Bilirubin Total	µmol/l	76.3	60.3	92.3	8.00	16.00	Diazo with Sulphanilic Acid
	mg/dl	4.46	3.53	5.39	0.47	0.93	
	µmol/l	75.3	59.5	91.1	7.90	15.80	Dichlorophenyl Diazonium (DPD)
	mg/dl	4.41	3.48	5.34	0.47	0.93	

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Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Bilirubin Total	µmol/l	75.7	59.8	91.6	7.95	15.90	Diazonium ion
	mg/dl	4.43	3.50	5.36	0.47	0.93	
Calcium	mmol/l	3.18	2.86	3.50	0.16	0.32	Cresolphthalein complexone
	mg/dl	12.7	11.5	13.9	0.60	1.20	
	mmol/l	3.16	2.84	3.48	0.16	0.32	NM-BAPTA
	mg/dl	12.7	11.4	14.0	0.65	1.30	
Cholesterol	mmol/l	7.31	6.36	8.26	0.48	0.95	Cholesterol Oxidase
	mg/dl	282	245	319	18.50	37.00	
Chloride	mmol/l	111	102	120	4.50	9.00	ISE indirect
CK Total	U/l	511	419	603	46.00	92.00	CK-NAC (IFCC) 37℃
	U/l	320	262	378	29.00	58.00	CK-NAC (IFCC) 30℃
	U/l	217	178	256	19.50	39.00	CK-NAC (IFCC) 25℃
Creatinine	µmol/l	382	306	458	38.00	76.00	Roche Creatinine Plus
	mg/dl	4.32	3.46	5.18	0.43	0.86	
	µmol/l	368	295	441	36.50	73.00	Jaffe rate blanked comp. (-26 µmol/l)
	mg/dl	4.16	3.33	4.99	0.42	0.83	
gamma-GT	U/l	147	125	169	11.00	22.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 37℃
	U/l	116	99	133	8.50	17.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 30℃
	U/l	91	77	105	7.00	14.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 25℃
	U/l	165	140	190	12.50	25.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37℃
	U/l	130	110	150	10.00	20.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30℃
	U/l	102	86	118	8.00	16.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25℃
Glucose	mmol/l	15.7	13.3	18.1	1.20	2.40	Hexokinase
	mg/dl	283	240	326	21.50	43.00	
HDL - Cholesterol	mmol/l	3.21	2.73	3.69	0.24	0.48	Direct HDL Roche 3rd generation
	mg/dl	124	105	143	9.50	19.00	

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			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Iron	µmol/l	37.8	31.0	44.6	3.40	6.80	Colorimetric without ppt.
	µg/dl	211	173	249	19.00	38.00	
Lactate	mmol/l	5.78	4.74	6.82	0.52	1.04	Colorimetric Lactate Oxidase
	mg/dl	52.1	42.7	61.5	4.70	9.40	
LD (LDH)	U/l	366	311	421	27.50	55.00	L->P IFCC 37℃
	U/l	264	225	303	19.50	39.00	L->P IFCC 30℃
	U/l	186	158	214	14.00	28.00	L->P IFCC 25℃
Lipase	U/l	62	50	74	6.00	12.00	Roche Colorimetric 37℃
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	
Magnesium	mmol/l	1.74	1.53	1.95	0.11	0.21	Xylidyl Blue
	mg/dl	4.23	3.72	4.74	0.26	0.51	
Phosphate Inorganic	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	6.35	5.84	6.86	0.26	0.51	ISE method - indirect
Protein Total	g/l	44.2	35.3	53.1	4.45	8.90	Biuret reaction end point
	g/dl	4.42	3.53	5.31	0.45	0.89	
Sodium	mmol/l	160	152	168	4.00	8.00	ISE method - indirect
TIBC	µmol/l	60.5	47.8	73.2	6.35	12.70	FE+UIBC(saturation with iron)
	µg/dl	338	267	409	35.50	71.00	
Triglycerides	mmol/l	2.72	2.28	3.16	0.22	0.44	Lipase/GPO-PAP no correction
	mg/dl	241	202	280	19.50	39.00	
	mmol/l	2.73	2.29	3.17	0.22	0.44	L/G Kinase EP. no correction
	mg/dl	242	203	281	19.50	39.00	

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RANDOX

Roche Cobas c701 / c702 / c711

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			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
	mg/dl	9.07	7.90	10.2	0.59	1.17	
	mmol/l	0.54	0.47	0.62	0.04	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.14	7.95	10.3	0.60	1.19	
	mmol/l	0.54	0.47	0.61	0.04	0.07	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	9.04	7.86	10.2	0.59	1.18	
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	

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RX SERIES®

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Albumin	g/l	29.3	24.9	33.7	2.20	4.40	Bromocresol Green
	g/dl	2.93	2.49	3.37	0.22	0.44	
Alkaline Phosphatase	U/l	536	455	617	40.50	81.00	Diethanolamine buffer DEA 37°C
	U/l	356	303	409	26.50	53.00	AMP optimised to IFCC 37℃
ALT (GPT)	U/l	150	120	180	15.00	30.00	Tris buffer without P5P 37℃
Amylase Pancreatic	U/l	283	241	325	21.00	42.00	Randox liquid stable pNPG7 37℃
Amylase Total	U/l	309	263	355	23.00	46.00	Randox liquid stable pNPG7 37℃
AST (GOT)	U/l	181	145	217	18.00	36.00	Tris buffer without P5P 37℃
Bile Acids	µmol/l	48.6	38.9	58.3	4.85	9.70	5th Generation Colorimetric
Bicarbonate	mmol/l	15.6	12.4	18.8	1.60	3.20	Enzymatic
Bilirubin Direct	µmol/l	27.4	21.6	33.2	2.90	5.80	Diazo with Sulphanilic Acid
	mg/dl	1.60	1.26	1.94	0.17	0.34	
	µmol/l	28.3	22.4	34.2	2.95	5.90	Vanadate Oxidation
	mg/dl	1.66	1.31	2.01	0.18	0.35	
Bilirubin Total	µmol/l	85.8	67.8	104	9.00	18.00	Diazo with Sulphanilic Acid
	mg/dl	5.02	3.97	6.07	0.53	1.05	
	µmol/l	90.8	71.7	110	9.55	19.10	Vanadate Oxidation
	mg/dl	5.31	4.19	6.43	0.56	1.12	
Calcium	mmol/l	3.16	2.84	3.48	0.16	0.32	Arsenazo III
	mg/dl	12.7	11.4	14.0	0.65	1.30	
Cholesterol	mmol/l	7.63	6.64	8.62	0.50	0.99	Cholesterol Oxidase
	mg/dl	295	256	334	19.50	39.00	

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ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

Analyte	unit	Target	Range low	Range high	1SD	2SD	methods
Chloride	mmol/l	112	103	121	4.50	9.00	ISE direct
CK Total	U/l	553	453	653	50.00	100.00	CK-NAC substrate start (DGKC) 37℃
	U/l	565	464	666	50.50	101.00	CK-NAC (IFCC) 37℃
Creatinine	µmol/l	313	250	376	31.50	63.00	Alkaline picrate no deproteinization
	mg/dl	3.54	2.83	4.25	0.36	0.71	
	µmol/l	365	292	438	36.50	73.00	Randox Enzymatic UV method
	mg/dl	4.12	3.30	4.94	0.41	0.82	
gamma-GT	U/l	173	147	199	13.00	26.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37℃
Glucose	mmol/l	15.8	13.4	18.2	1.20	2.40	Hexokinase
	mg/dl	285	241	329	22.00	44.00	
	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	41.4	33.9	48.9	3.75	7.50	Colorimetric without ppt.
	µg/dl	231	190	272	20.50	41.00	
Lactate	mmol/l	5.66	4.64	6.68	0.51	1.02	Colorimetric Lactate Oxidase
	mg/dl	51.0	41.8	60.2	4.60	9.20	
LD (LDH)	U/l	788	670	906	59.00	118.00	P->L German methods 37℃
	U/l	376	320	432	28.00	56.00	L->P IFCC 37℃
Lipase	U/l	82	66	98	8.00	16.00	Randox Colorimetric 37℃
Lithium	mmol/l	1.97	1.73	2.21	0.12	0.24	Colorimetric
	mg/dl	1.37	1.20	1.54	0.09	0.17	
Magnesium	mmol/l	1.78	1.56	2.00	0.11	0.22	Xylidyl Blue
	mg/dl	4.33	3.79	4.87	0.27	0.54	
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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ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Potassium	mmol/l	6.39	5.88	6.90	0.26	0.51	Enzymatic
	mmol/l	6.12	5.63	6.61	0.25	0.49	ISE method - direct
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	
Sodium	mmol/l	156	148	164	4.00	8.00	Enzymatic
	mmol/l	157	150	164	3.50	7.00	ISE method - direct
TIBC	µmol/l	59.0	46.6	71.4	6.20	12.40	Direct Colorimetric
	µg/dl	330	260	400	35.00	70.00	
Triglycerides	mmol/l	2.83	2.38	3.28	0.23	0.45	Lipase/GPO-PAP no correction
	mg/dl	250	211	289	19.50	39.00	
Uric Acid (Urate)	mmol/l	0.57	0.49	0.64	0.04	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.54	8.30	10.8	0.62	1.24	
	mmol/l	0.56	0.49	0.64	0.04	0.07	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	9.48	8.25	10.7	0.62	1.23	
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	
	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	

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ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Albumin	g/l	27.9	23.7	32.1	2.10	4.20	Bromocresol Green
	g/dl	2.79	2.37	3.21	0.21	0.42	
	g/l	26.4	22.4	30.4	2.00	4.00	Bromocresol Purple
	g/dl	2.64	2.24	3.04	0.20	0.40	
Alkaline Phosphatase	U/l	477	405	549	36.00	72.00	Diethanolamine buffer DEA 37°C
	U/l	348	296	400	26.00	52.00	AMP optimised to IFCC 37℃
	U/l	349	296	402	26.50	53.00	AMP non-optimised 37℃
ALT (GPT)	U/l	137	110	164	13.50	27.00	Tris buffer without P5P 37℃
Amylase Pancreatic	U/l	266	226	306	20.00	40.00	Immunoinhibition EPS substrate 37℃
Amylase Total	U/l	279	238	320	20.50	41.00	Siemens - blocked pNPG7 37℃
AST (GOT)	U/l	171	137	205	17.00	34.00	Tris buffer without P5P 37℃
Bile Acids	µmol/l	47.1	37.7	56.5	4.70	9.40	Enzymatic Colorimetric
Bicarbonate	mmol/l	17.3	13.7	20.9	1.80	3.60	Enzymatic
Bilirubin Direct	µmol/l	28.9	22.8	35.0	3.05	6.10	Oxidation to Biliverdin
	mg/dl	1.69	1.33	2.05	0.18	0.36	
Bilirubin Total	µmol/l	92.1	72.8	111	9.65	19.30	Oxidation to Biliverdin
	mg/dl	5.39	4.26	6.52	0.57	1.13	
Calcium	mmol/l	3.21	2.89	3.53	0.16	0.32	Cresolphthalein complexone
	mg/dl	12.9	11.6	14.2	0.65	1.30	
	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	

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ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Cholesterol	mmol/l	7.29	6.34	8.24	0.48	0.95	Cholesterol Oxidase
	mg/dl	281	245	317	18.00	36.00	
Chloride	mmol/l	116	106	126	5.00	10.00	ISE indirect
Cholinesterase	U/l	5092	4074	6110	509.00	1018.00	Colorimetric Butyrylthiocholine 37℃
CK Total	U/l	530	435	625	47.50	95.00	CK-NAC (IFCC) 37℃
Creatinine	µmol/l	362	289	435	36.50	73.00	Alkaline picrate no deproteinization
	mg/dl	4.09	3.27	4.91	0.41	0.82	
	µmol/l	366	293	439	36.50	73.00	Randox Enzymatic UV method
	mg/dl	4.14	3.31	4.97	0.42	0.83	
	µmol/l	359	288	430	35.50	71.00	Jaffe rate blanked
	mg/dl	4.06	3.25	4.87	0.41	0.81	
	µmol/l	366	292	440	37.00	74.00	Jaffe rate blanked comp. (-26 µmol/l)
	mg/dl	4.14	3.30	4.98	0.42	0.84	
gamma-GT	U/l	166	141	191	12.50	25.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37℃
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	15.5	13.2	17.8	1.15	2.30	Glucose oxidase
	mg/dl	279	238	320	20.50	41.00	
HDL - Cholesterol	mmol/l	2.17	1.85	2.49	0.16	0.32	Direct Clearance Method
	mg/dl	83.8	71.4	96.2	6.20	12.40	
Iron	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	5.79	4.75	6.83	0.52	1.04	Colorimetric Lactate Oxidase
	mg/dl	52.2	42.8	61.6	4.70	9.40	
LD (LDH)	U/l	370	315	425	27.50	55.00	L->P 37℃

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ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
LD (LDH)	U/l	756	642	870	57.00	114.00	P->L German methods 37℃
	U/l	376	320	432	28.00	56.00	L->P IFCC 37℃
Lipase	U/l	74	60	88	7.00	14.00	Other Colorimetric 37℃
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	1.80	1.59	2.01	0.11	0.21	Xylidyl Blue
	mg/dl	4.37	3.86	4.88	0.26	0.51	
Osmolality	mOsm/kg	338	270	406	34.00	68.00	Calculated
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	6.30	5.80	6.80	0.25	0.50	ISE method - indirect
Protein Total	g/l	45.1	36.1	54.1	4.50	9.00	Biuret reaction end point
	g/dl	4.51	3.61	5.41	0.45	0.90	
Sodium	mmol/l	160	152	168	4.00	8.00	ISE method - indirect
TIBC	µmol/l	58.4	46.2	70.6	6.10	12.20	Direct Colorimetric
	µg/dl	326	258	394	34.00	68.00	
Triglycerides	mmol/l	2.91	2.44	3.38	0.24	0.47	Lipase/GPO-PAP no correction
	mg/dl	258	216	300	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	
Uric Acid (Urate)	mmol/l	0.56	0.49	0.63	0.04	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.42	8.20	10.6	0.61	1.22	
	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	
Urea	mmol/l	19.6	16.7	22.5	1.45	2.90	Urease kinetic
	mg/dl	118	100	136	9.00	18.00	

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ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Urea	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	

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RANDOX

Siemens/Dade Dimension EXL

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Albumin	g/l	26.3	22.3	30.3	2.00	4.00	Bromocresol Purple
	g/dl	2.63	2.23	3.03	0.20	0.40	
Alkaline Phosphatase	U/l	295	250	340	22.50	45.00	Siemens Dimension AMP buffer 37℃
	U/l	301	255	347	23.00	46.00	AMP optimised to IFCC 37℃
ALT (GPT)	U/l	146	117	175	14.50	29.00	Tris buffer with P5P 37℃
	U/l	143	114	172	14.50	29.00	Siemens Dade Standard Non IFCC Correlated 37℃
Amylase Total	U/l	333	283	383	25.00	50.00	Siemens 2-chloro-pNPG3 37℃
AST (GOT)	U/l	188	150	226	19.00	38.00	Tris buffer with P5P 37℃
	U/l	189	151	227	19.00	38.00	Siemens Dade Standard Non IFCC Correlated 37℃
Bicarbonate	mmol/l	16.8	13.3	20.3	1.75	3.50	Enzymatic
Bilirubin Direct	µmol/l	14.7	11.6	17.8	1.55	3.10	Diazo with Sulphanilic Acid
	mg/dl	0.860	0.679	1.04	0.09	0.18	
Bilirubin Total	µmol/l	80.2	63.4	97.0	8.40	16.80	Diazo with Sulphanilic Acid
	mg/dl	4.69	3.71	5.67	0.49	0.98	
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	
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	
Chloride	mmol/l	114	105	123	4.50	9.00	ISE indirect
CK Total	U/l	513	421	605	46.00	92.00	CK-NAC (IFCC) 37℃
	U/l	507	416	598	45.50	91.00	Dithioerythritol (DTE) IFCC correlated 37℃

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RANDOX

Siemens/Dade Dimension EXL

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Creatinine	µmol/l	377	302	452	37.50	75.00	Alkaline picrate no deproteinization
	mg/dl	4.26	3.41	5.11	0.43	0.85	
	µmol/l	381	305	457	38.00	76.00	IDMS traceable
	mg/dl	4.31	3.45	5.17	0.43	0.86	
gamma-GT	U/l	172	146	198	13.00	26.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37℃
	U/l	198	168	228	15.00	30.00	Siemens Dimension (non IFCC) 37℃
Glucose	mmol/l	15.6	13.3	17.9	1.15	2.30	Hexokinase
	mg/dl	281	240	322	20.50	41.00	
HDL - Cholesterol	mmol/l	3.26	2.77	3.75	0.25	0.49	Direct HDL PEGME
	mg/dl	126	107	145	9.50	19.00	
Iron	µmol/l	36.7	30.1	43.3	3.30	6.60	Colorimetric without ppt.
	µg/dl	205	168	242	18.50	37.00	
Lactate	mmol/l	5.43	4.45	6.41	0.49	0.98	Colorimetric Lactate Oxidase
	mg/dl	48.9	40.1	57.7	4.40	8.80	
	mmol/l	5.48	4.49	6.47	0.50	0.99	UV LDH
	mg/dl	49.4	40.5	58.3	4.45	8.90	
LD (LDH)	U/l	379	322	436	28.50	57.00	Siemens Dimension L-P Non IFCC 37℃
	U/l	358	304	412	27.00	54.00	L->P IFCC 37℃
Lipase	U/l	287	230	344	28.50	57.00	Siemens Dimension Colorimetric (LIP Kit) 37℃
	U/l	283	227	339	28.00	56.00	Colorimetric Siemens Dimension (LIPL Kit) 37℃
Magnesium	mmol/l	1.79	1.57	2.01	0.11	0.22	Methylthymol blue
	mg/dl	4.35	3.82	4.88	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	6.26	5.76	6.76	0.25	0.50	ISE method - indirect

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RANDOX

Siemens/Dade Dimension EXL

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
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	
Sodium	mmol/l	159	151	167	4.00	8.00	ISE method - indirect
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	
	mmol/l	2.90	2.43	3.37	0.24	0.47	L/G Kinase EP. no correction
	mg/dl	257	215	299	21.00	42.00	
	mmol/l	2.89	2.42	3.36	0.24	0.47	Lipase/Glycerol Dehydrogenase
	mg/dl	256	214	298	21.00	42.00	
Uric Acid (Urate)	mmol/l	0.55	0.48	0.63	0.04	0.07	Spectrophotometric at 280-290
	mg/dl	9.29	8.08	10.5	0.61	1.21	
Urea	mmol/l	19.4	16.5	22.3	1.45	2.90	Urease kinetic
	mg/dl	117	99.2	135	8.90	17.80	
	mmol/l	18.9	16.1	21.7	1.40	2.80	Agappe - Urease GLDH
	mg/dl	114	96.8	131	8.60	17.20	
	mmol/l	19.4	16.5	22.3	1.45	2.90	BUN
	mg/dl	54.4	46.2	62.6	4.10	8.20	

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SIEMENS DIMENSION RxL/Max/Xpand®

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Albumin	g/l	27.0	22.9	31.1	2.05	4.10	Bromocresol Green
	g/dl	2.70	2.29	3.11	0.21	0.41	
	g/l	26.8	22.8	30.8	2.00	4.00	Bromocresol Purple
	g/dl	2.68	2.28	3.08	0.20	0.40	
Alkaline Phosphatase	U/l	303	258	348	22.50	45.00	Siemens Dimension AMP buffer 37℃
	U/l	301	256	346	22.50	45.00	AMP optimised to IFCC 37℃
	U/l	286	243	329	21.50	43.00	Randox AMP 37℃
ALT (GPT)	U/l	149	119	179	15.00	30.00	Tris buffer with P5P 37℃
	U/l	143	115	171	14.00	28.00	Siemens Dade Standard Non IFCC Correlated 37℃
Amylase Total	U/l	330	281	379	24.50	49.00	Siemens - maltopenta/hexaoside 37℃
	U/l	340	289	391	25.50	51.00	Siemens 2-chloro-pNPG3 37℃
AST (GOT)	U/l	191	153	229	19.00	38.00	Tris buffer with P5P 37℃
	U/l	193	154	232	19.50	39.00	Siemens Dade Standard Non IFCC Correlated 37℃
Bicarbonate	mmol/l	16.4	13.0	19.8	1.70	3.40	Enzymatic
Bilirubin Direct	µmol/l	14.6	11.6	17.6	1.50	3.00	Diazo with Sulphanilic Acid
	mg/dl	0.854	0.679	1.03	0.09	0.18	
Bilirubin Total	µmol/l	81.1	64.1	98.1	8.50	17.00	Diazo with Sulphanilic Acid
	mg/dl	4.74	3.75	5.73	0.50	0.99	
Calcium	mmol/l	3.14	2.83	3.45	0.16	0.31	Cresolphthalein complexone
	mg/dl	12.6	11.3	13.9	0.65	1.30	
Cholesterol	mmol/l	6.90	6.00	7.80	0.45	0.90	Dimension-Siemens reagents
	mg/dl	266	232	300	17.00	34.00	

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SIEMENS DIMENSION RxL/Max/Xpand®

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Chloride	mmol/l	115	106	124	4.50	9.00	ISE indirect
CK Total	U/l	513	421	605	46.00	92.00	CK-NAC (IFCC) 37℃
	U/l	518	424	612	47.00	94.00	Dithioerythritol 37℃
Creatinine	µmol/l	379	303	455	38.00	76.00	Alkaline picrate no deproteinization
	mg/dl	4.28	3.42	5.14	0.43	0.86	
	µmol/l	367	294	440	36.50	73.00	Randox Enzymatic UV method
	mg/dl	4.15	3.32	4.98	0.42	0.83	
	µmol/l	382	305	459	38.50	77.00	Creatinine PAP method
	mg/dl	4.32	3.45	5.19	0.44	0.87	
	µmol/l	383	306	460	38.50	77.00	Jaffe rate blanked
	mg/dl	4.33	3.46	5.20	0.44	0.87	
	µmol/l	377	302	452	37.50	75.00	IDMS traceable
	mg/dl	4.26	3.41	5.11	0.43	0.85	
gamma-GT	U/l	179	152	206	13.50	27.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37℃
	U/l	203	172	234	15.50	31.00	Siemens Dimension (non IFCC) 37℃
Glucose	mmol/l	15.8	13.4	18.2	1.20	2.40	Hexokinase
	mg/dl	285	241	329	22.00	44.00	
HDL - Cholesterol	mmol/l	3.24	2.75	3.73	0.25	0.49	Direct HDL PPD
	mg/dl	125	106	144	9.50	19.00	
	mmol/l	3.15	2.68	3.62	0.24	0.47	Direct HDL PEGME
	mg/dl	122	103	141	9.50	19.00	
	mmol/l	3.10	2.64	3.56	0.23	0.46	Direct Clearance Method
	mg/dl	120	102	138	9.00	18.00	
Iron	µmol/l	36.9	30.2	43.6	3.35	6.70	Colorimetric with ppt.
	µg/dl	206	169	243	18.50	37.00	

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SIEMENS DIMENSION RxL/Max/Xpand®

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Iron	µmol/l	37.1	30.4	43.8	3.35	6.70	Colorimetric without ppt.
	µg/dl	207	170	244	18.50	37.00	
Lactate	mmol/l	5.30	4.34	6.26	0.48	0.96	UV LDH
	mg/dl	47.8	39.1	56.5	4.35	8.70	
LD (LDH)	U/l	364	309	419	27.50	55.00	Siemens Dimension L-P Non IFCC 37℃
	U/l	360	306	414	27.00	54.00	L->P IFCC 37℃
Lipase	U/l	281	225	337	28.00	56.00	Colorimetric Siemens Dimension (LIPL Kit) 37℃
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	
	mmol/l	1.81	1.59	2.03	0.11	0.22	Methylthymol blue
	mg/dl	4.40	3.86	4.94	0.27	0.54	
Phosphate Inorganic	mmol/l	2.28	1.93	2.63	0.18	0.35	Phosphomolybdate enzymatic
	mg/dl	7.07	5.98	8.16	0.55	1.09	
	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	6.23	5.73	6.73	0.25	0.50	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	159	151	167	4.00	8.00	ISE method - indirect
TIBC	µmol/l	53.0	41.9	64.1	5.55	11.10	Removal of excess free iron
	µg/dl	296	234	358	31.00	62.00	
	µmol/l	54.1	42.7	65.5	5.70	11.40	Direct Colorimetric
	µg/dl	302	239	365	31.50	63.00	
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	

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SIEMENS DIMENSION RxL/Max/Xpand®

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Triglycerides	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	
	mmol/l	2.91	2.44	3.38	0.24	0.47	Lipase/Glycerol Dehydrogenase
	mg/dl	258	216	300	21.00	42.00	
Uric Acid (Urate)	mmol/l	0.56	0.48	0.63	0.04	0.07	Uricase catalase 340nm
	mg/dl	9.34	8.13	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	9.34	8.13	10.6	0.61	1.21	
	mmol/l	0.55	0.48	0.62	0.04	0.07	Spectrophotometric at 280-290
	mg/dl	9.22	8.01	10.4	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	
Urea	mmol/l	19.7	16.7	22.7	1.50	3.00	Urease end point
	mg/dl	118	100	136	9.00	18.00	
	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	17.8	15.2	20.4	1.30	2.60	Urease hypochlorite
	mg/dl	107	91.4	123	7.80	15.60	
	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	

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RANDOX

Siemens/Dade Dimension Vista

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Albumin	g/l	27.5	23.4	31.6	2.05	4.10	Bromocresol Purple
	g/dl	2.75	2.34	3.16	0.21	0.41	
Alkaline Phosphatase	U/l	300	255	345	22.50	45.00	AMP optimised to IFCC 37℃
ALT (GPT)	U/l	147	117	177	15.00	30.00	Tris buffer with P5P 37℃
Amylase Total	U/l	332	282	382	25.00	50.00	Siemens 2-chloro-pNPG3 37℃
AST (GOT)	U/l	193	155	231	19.00	38.00	Tris buffer with P5P 37℃
Bicarbonate	mmol/l	16.0	12.7	19.3	1.65	3.30	Enzymatic
Bilirubin Direct	µmol/l	15.8	12.5	19.1	1.65	3.30	Diazo with Sulphanilic Acid
	mg/dl	0.924	0.731	1.12	0.10	0.19	
Bilirubin Total	µmol/l	79.1	62.5	95.7	8.30	16.60	Diazo with Sulphanilic Acid
	mg/dl	4.63	3.66	5.60	0.49	0.97	
Calcium	mmol/l	3.17	2.86	3.48	0.16	0.31	Cresolphthalein complexone
	mg/dl	12.7	11.5	13.9	0.60	1.20	
Cholesterol	mmol/l	6.94	6.03	7.85	0.46	0.91	Dimension-Siemens reagents
	mg/dl	268	233	303	17.50	35.00	
Chloride	mmol/l	120	110	130	5.00	10.00	ISE indirect
CK Total	U/l	505	414	596	45.50	91.00	Dithioerythritol (DTE) IFCC correlated 37℃
Creatinine	µmol/l	386	308	464	39.00	78.00	IDMS traceable
	mg/dl	4.36	3.48	5.24	0.44	0.88	
gamma-GT	U/l	203	172	234	15.50	31.00	Siemens Dimension (non IFCC) 37℃
Glucose	mmol/l	15.7	13.3	18.1	1.20	2.40	Hexokinase
	mg/dl	283	240	326	21.50	43.00	

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RANDOX

Siemens/Dade Dimension Vista

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 791UE Cat. No. HE1532/HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2019-05

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
HDL - Cholesterol	mmol/l	2.91	2.48	3.34	0.22	0.43	Direct HDL PEGME
	mg/dl	112	95.7	128	8.15	16.30	
Lactate	mmol/l	5.19	4.26	6.12	0.47	0.93	UV LDH
	mg/dl	46.8	38.4	55.2	4.20	8.40	
LD (LDH)	U/l	369	313	425	28.00	56.00	L->P IFCC 37℃
Lipase	U/l	328	263	393	32.50	65.00	Colorimetric Siemens Dimension (LIPL Kit) 37℃
Magnesium	mmol/l	1.78	1.56	2.00	0.11	0.22	Methylthymol blue
	mg/dl	4.33	3.79	4.87	0.27	0.54	
Phosphate Inorganic	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	6.17	5.68	6.66	0.25	0.49	ISE method - indirect
Protein Total	g/l	44.8	35.8	53.8	4.50	9.00	Biuret reaction end point
	g/dl	4.48	3.58	5.38	0.45	0.90	
Sodium	mmol/l	158	150	166	4.00	8.00	ISE method - indirect
Triglycerides	mmol/l	3.20	2.69	3.71	0.26	0.51	Lipase/GPO-PAP no correction
	mg/dl	283	238	328	22.50	45.00	
Uric Acid (Urate)	mmol/l	0.55	0.48	0.62	0.04	0.07	Spectrophotometric at 280-290
	mg/dl	9.24	8.03	10.5	0.61	1.21	
Urea	mmol/l	20.0	17.0	23.0	1.50	3.00	Urease kinetic
	mg/dl	120	102	138	9.00	18.00	
	mmol/l	20.0	17.0	23.0	1.50	3.00	BUN
	mg/dl	56.1	47.7	64.5	4.20	8.40	

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