

# **CONTROL LEVEL 1 HUMAN SERA**

**CAT. NO. HNC200  
LOT NO.1088UN**





Carefully reconstitute each vial of lyophilized serum with exactly 5 mL of distilled water.

## INTENDED USE

**MedTest DX** Control Level 1 is lyophilized human based control sera for use in the quality control of diagnostic assays. Human-sera can be supplied as an assayed serum for control of accuracy or as a precision serum for control of reproducibility. Constituent concentrations are available at 2 levels.

## VALUE ASSIGNMENTS

Values are also collected from approximately 3000 laboratories worldwide and a value is assigned using a unique statistical analysis. With each batch a control range is provided for individual parameters and each parameter method. The control range is equivalent to the assigned mean  $\pm$  2 S.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.

## PREPARATION

### Procedure

1. Open the vial carefully, avoiding any loss of material.
2. Reconstitute in the appropriate accurately measured volume of distilled water at +20 to +25° C.
3. Replace the rubber stopper, close vial and let stand for 30 minutes out of bright light before use.
4. Ensure that contents are completely dissolved by swirling gently.
5. After 30 minutes, invert vial to ensure that all traces of dry material are dissolved.
6. Do not shake the vial.

The serum can then be used with the manual tests or with automated instruments. The serum should only be reconstituted using this procedure.

## STABILITY

The serum is stable for 4 years after date of manufacture when stored at a constant +4° C. The expiration date is illustrated on the side of each pack.

Once reconstituted, the components of the serum are stable for 8 hours at +25° C or 7 days at +4° C, and at least 1 month when frozen once at -20° C (see limitations).

## LIMITATIONS

For Total & Prostatic Acid Phosphatase, the material should be stabilized by adding 1 drop (25-30  $\mu$ l) of 0.7 M Acetic acid solution to 1 mL of the serum. After stabilization, Total & Prostatic Acid Phosphatase is stable for at least 2 hours at +25° C, at least 2 days at +4° C, and at least 1 month when frozen once at -20° 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 +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 at least 4 hours at +25° C, at least 8 hours at +4° C. **DO NOT FREEZE.**

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.

## WARNINGS/PRECAUTIONS

Human source material from which this product has been derived has been tested at donor level for the Human Immunodeficiency Virus (HIV 1, HIV 2) antibody, Hepatitis B Surface Antigen (HbsAg), and Hepatitis C Virus (HCV) antibody and found to be NON-REACTIVE. FDA approved methods have been used to conduct these tests.

However, since no method can offer complete assurance as to the absence of infectious agents, this material and all patient samples should be handled as though capable of transmitting infectious diseases and disposed of accordingly.

For **IN VITRO** diagnostic use only.

Manufactured in the U.K. for



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Component	Units	Target	Mean of All Instruments		Method
			Range		
			Low	High	
Albumin	g/l	42.1	35.8	48.4	Bromocresol Green
	g/dl	4.21	3.58	4.84	
	g/l	43.4	36.9	49.9	Bromocresol Purple
	g/dl	4.34	3.69	4.99	
	g/l	39.3	33.4	45.2	Dry Chemistry
	g/dl	3.93	3.34	4.52	
Bicarbonate (CO2)	mmol/l	14.2	11.2	17.2	Differential Rate pH change
	mmol/l	14.5	11.5	17.5	Enzymatic
	mmol/l	14.4	11.5	17.3	ISE
	mmol/l	15.7	12.5	18.9	Dry Chemistry
Bile Acids	μmol/l	23.5	18.8	28.2	4th Generation Colorimetric
	μmol/l	22.5	18.0	27.0	5th Generation Colorimetric
Direct Bilirubin	μmol/l	18.0	14.2	21.8	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.05	0.831	1.27	
	μmol/l	18.9	14.9	22.9	Diazo with Sulphanilic Acid
	mg/dl	1.11	0.872	1.35	
	μmol/l	11.5	9.11	13.9	Dry Chemistry
	mg/dl	0.673	0.533	0.813	
Total Bilirubin	μmol/l	27.1	21.4	32.8	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.59	1.25	1.93	
	μmol/l	27.7	21.9	33.5	Diazo with Sulphanilic acid
	mg/dl	1.62	1.28	1.96	
	μmol/l	25.6	20.2	31.0	Dry Chemistry
mg/dl	1.50	1.18	1.82		
Calcium	mmol/l	2.28	2.05	2.51	Arsenazo III
	mg/dl	9.14	8.22	10.1	
	mmol/l	2.23	2.01	2.45	Cresolphthalein complexone
	mg/dl	8.94	8.06	9.82	
	mmol/l	2.22	2.00	2.44	ISE
	mg/dl	8.90	8.02	9.78	
	mmol/l	2.31	2.08	2.54	Dry Chemistry
	mg/dl	9.26	8.34	10.2	
Chloride mmol/l = mEq/l	mmol/l	102	93.8	110	Colorimetric
	mmol/l	98.7	90.8	107	ISE Direct
	mmol/l	95.7	88.1	103	ISE Indirect
	mmol/l	97.5	89.7	105	Dry Chemistry
Cholesterol	mmol/l	4.14	3.60	4.68	Cholesterol Oxidase (CHOD PAP)
	mg/dl	160	139	181	
	mmol/l	3.94	3.42	4.46	Dry Chemistry
	mg/dl	152	132	172	
Copper	μmol/l	18.2	14.6	21.8	Atomic Absorption
	μg/dl	116	92.9	139	
	μmol/l	17.6	14.1	21.1	Colorimetric
	μg/dl	112	89.7	134	
Creatinine	μmol/l	119	94.9	143	Alkaline picrate with deproteinization
	mg/dl	1.34	1.07	1.61	
	μmol/l	120	96.0	144	Alkaline picrate without deproteinization
	mg/dl	1.36	1.08	1.64	
	μmol/l	119	95.1	143	Enzymatic UV
	mg/dl	1.34	1.07	1.61	
	μmol/l	119	95.3	143	Creatinine PAP method
	mg/dl	1.34	1.08	1.60	
	μmol/l	121	97.2	145	Jaffe Rate Blanked
	mg/dl	1.37	1.10	1.64	
	μmol/l	121	97.2	145	Jaffe Rate Blanked Compensated (-26 μmol/l)
	mg/dl	1.37	1.10	1.64	
μmol/l	118	94.6	141	Dry Chemistry	
mg/dl	1.33	1.07	1.59		
Glucose	mmol/l	6.20	5.27	7.13	Hexokinase
	mg/dl	112	95.0	129	
	mmol/l	6.29	5.35	7.23	Glucose oxidase
	mg/dl	113	96.4	130	
	mmol/l	6.03	5.12	6.94	Dry Chemistry
	mg/dl	109	92.3	126	

MEAN OF ALL INSTRUMENTS					
COMPONENT	UNITS	TARGE	RANGE		METHOD
			LOW	HIGH	
D-3-Hydroxybutyrate	mmol/l	0.29	0.24	0.33	Tris Buffer 100mM pH8.5
Iron	μmol/l	17.1	14.0	20.2	Colorimetric with precipitation
	μg/dl	95.6	78.3	113	(Ferene/Ferrozine Method)
	μmol/l	17.0	13.9	20.1	Colorimetric without precipitation
	μg/dl	95.0	77.7	112	(Ferene/Ferrozine Method)
	μmol/l	18.0	14.7	21.3	Dry Chemistry
	μg/dl	101	82.2	120	
TIBC	μmol/l	43.2	34.2	52.2	Removal of Excess Free Iron
	μg/dl	241	191	291	
	μmol/l	45.2	35.7	54.7	Fe + UIBC (Saturation with Iron)
	μg/dl	253	200	306	
	μmol/l	51.7	40.8	62.6	Dry Chemistry
	μg/dl	289	228	350	
Lactate	mmol/l	1.46	1.20	1.72	Enzymatic Colorimetric
	mg/dl	13.2	10.8	15.6	
Lithium	mmol/l	1.00	0.88	1.12	ISE
	mmol/l = mEq/l	1.23	1.08	1.38	Dry Chemistry
Magnesium	mmol/l	0.94	0.83	1.05	Calmagite
	mg/dl	2.28	2.00	2.56	
	mmol/l	0.94	0.83	1.05	Xylidyl Blue
	mg/dl	2.28	2.00	2.56	
	mmol/l	0.94	0.82	1.05	Dry Chemistry
	mg/dl	2.27	2.00	2.54	
NEFA	mmol/l	3.10	2.64	3.56	Colorimetric
Osmolality	mmol/k	293	234	352	Calculated
	mmol/k	305	244	366	Freezing Point depression
Phosphorus Inorganic	mmol/l	1.33	1.06	1.60	Phosphomolybdate Enzymatic
	mg/dl	4.12	3.29	4.95	
	mmol/l	1.33	1.06	1.60	Phosphomolybdate reduction UV
	mg/dl	4.12	3.29	4.95	
	mmol/l	1.41	1.13	1.69	Dry Chemistry
	mg/dl	4.37	3.50	5.24	
Potassium mmol/l = mEq/l	mmol/l	4.00	3.68	4.32	Flame Photometry
	mmol/l	4.02	3.69	4.35	ISE Direct
	mmol/l	4.09	3.77	4.41	ISE Indirect
	mmol/l	4.12	3.79	4.45	Dry Chemistry
PSA	μg/l	18.1	13.6	22.6	Roche Elecsys Modular E170
	μg/l	15.3	11.5	19.1	Biomerieux Vidas (TPSA)
	μg/l	12.4	9.28	15.5	Siemens Advia Centaur
	μg/l	14.3	10.7	17.9	Abbott Architect
	μg/l	17.3	13.0	21.6	Roche Cobas 6000
Sodium mmol/l = mEq/l	mmol/l	141	134	148	ISE Direct
	mmol/l	143	136	150	ISE Indirect
	mmol/l	140	133	147	Flame Photometry
	mmol/l	144	136	152	Dry Chemistry

Component	Units	Target	Mean of All Instruments		Method
			Range		
			Low	High	
Total Protein	g/l	58.6	46.9	70.3	Biuret reaction, endpoint
	g/dl	5.86	4.69	7.03	
	g/l	58.3	46.7	69.9	Biuret reaction, kinetic
	g/dl	5.83	4.67	6.99	
	g/l	58.5	46.8	70.2	Biuret reaction, CX4/5/7
	g/dl	5.85	4.68	7.02	
	g/l	58.8	47.0	70.6	Dry Chemistry
	g/dl	5.88	4.70	7.06	
Triglycerides	mmol/l	1.07	0.90	1.24	Lipase/GPO-PAP Color. without Glycerol Correction
	mg/dl	94.7	79.7	110	
	mmol/l	1.05	0.89	1.22	Lipase/Glycerol Dehydrogenase
	mg/dl	92.9	78.3	108	
	mmol/l	1.20	1.01	1.39	Dry Chemistry
	mg/dl	106	89.4	123	
Urea	mmol/l	6.95	5.91	7.99	BUN
	mg/dl	19.5	16.6	22.4	
	mmol/l	7.10	6.04	8.16	Urease, Endpoint
	mg/dl	42.7	36.3	49.1	
	mmol/l	6.95	5.91	7.99	Urease, kinetic
	mg/dl	41.8	35.5	48.1	
	mmol/l	6.64	5.64	7.64	Urease Berthelot
	mg/dl	39.9	33.9	45.9	
	mmol/l	6.75	5.74	7.76	Urease Hypochlorite
	mg/dl	40.6	34.5	46.7	
	mmol/l	6.52	5.54	7.50	Dry Chemistry
	mg/dl	39.2	33.3	45.1	
Uric Acid	mmol/l	0.34	0.30	0.39	Uricase, Catalase 340 nm
	mg/dl	5.73	4.99	6.47	
	mmol/l	0.34	0.30	0.38	Uricase peroxidase, with Ascorbate Oxidase, colorimetric
	mg/dl	5.70	4.96	6.44	
	mmol/l	0.34	0.29	0.38	Uricase peroxidase, without Ascorbate Oxidase, colorimetric
	mg/dl	5.68	4.94	6.42	
	mmol/l	0.34	0.30	0.39	Randox 546 nm/BM Uric Acid plus
	mg/dl	5.73	4.99	6.47	
Zinc	μmol/l	34.0	27.2	40.8	Atomic Absorption
	μg/dl	222	178	266	
	μmol/l	31.8	25.4	38.2	Colorimetric
	μg/dl	208	166	250	
Acid Phosphatase (Total)	U/l	13.8	9.25	18.4	1-Naphthyl Phosphate, Kinetic 37°C
	U/l	18.3	12.3	24.3	1-Naphthyl Phosphate, Kinetic with Pentane Diol Activation 37°C
Acid Phosphatase (Prostatic)	U/l	9.78	6.55	13.0	1-Naphthyl Phosphate, Kinetic 37°C
	U/l	14.1	9.45	18.8	1-Naphthyl Phosphate, Kinetic with Pentane Diol Activation 37°C
ALP	U/l	178	151	205	p-Nitrophenylphosphate, AMP, 37°C
	U/l	139	118	160	p-Nitrophenylphosphate, AMP, 30°C
	U/l	114	96	132	p-Nitrophenylphosphate, AMP, 25°C
	U/l	274	233	315	p-Nitrophenylphosphate, DEA, 37°C
	U/l	213	182	244	p-Nitrophenylphosphate, DEA, 30°C
	U/l	175	149	201	p-Nitrophenylphosphate, DEA, 25°C
	U/l	146	124	168	Dry Chemistry
ALT	U/l	37	29	45	SCE, 37°C
	U/l	27	21	33	SCE, 30°C
	U/l	21	16	26	SCE, 25°C
	U/l	44	35	53	IFCC with Pyridoxal 5 Phosphate, 37°C
	U/l	33	26	40	IFCC with Pyridoxal 5 Phosphate, 30°C
	U/l	25	20	30	IFCC with Pyridoxal 5 Phosphate, 25°C
	U/l	38	30	46	IFCC NO Pyridoxal 5 Phosphate, 37°C
	U/l	28	22	34	IFCC NO Pyridoxal 5 Phosphate, 30°C
	U/l	21	17	25	IFCC NO Pyridoxal 5 Phosphate, 25°C
	U/l	50	40	60	Dry Chemistry

MEAN OF ALL INSTRUMENTS					
COMPONENT	UNITS	TARGE	RANGE		METHOD
			LOW	HIGH	
Amylase	U/l	71	60	82	Polymedco Ethylidene Blocked, 37°C
	U/l	99	84	114	Randox EPS Liquid 37°C
	U/l	88	75	101	Siemens Blocked pNPG7 37°C
	U/l	88	75	101	Beckman CX 4/5/7 Maltotetraose 37°C
	U/l	80	68	92	Biomerieux Blocked pNPG7 37°C
	U/l	82	70	94	I.L. Blocked pNPG7 37°C
	U/l	87	74	100	Roche Liquid pNPG7 37°C
	U/l	63	54	72	Dry Chemistry
Pancreatic	U/l	76	65	87	Randox EPS Liquid, 37°C
Amylase	U/l	65	55	75	BM/Roche EPS Liquid, 37°C
AST	U/l	36	29	43	SCE, 37°C
	U/l	24	20	28	SCE, 30°C
	U/l	17	14	20	SCE, 25°C
	U/l	48	38	58	IFCC with Pyridoxal 5 Phosphate,37°C
	U/l	32	26	38	IFCC with Pyridoxal 5 Phosphate,30°C
	U/l	23	18	28	IFCC with Pyridoxal 5 Phosphate,25°C
	U/l	36	29	43	IFCC NO Pyridoxal 5 Phosphate, 37°C
	U/l	24	20	28	IFCC NO Pyridoxal 5 Phosphate, 30°C
	U/l	17	14	20	IFCC NO Pyridoxal 5 Phosphate, 25°C
	U/l	53	42	64	Dry Chemistry
Cholinesterase	U/l	5222	4178	6266	Colorimetric Butyrylthiocholine 37°C
CK (CPK)	U/l	221	181	261	DGKC, serum start 37°C
	U/l	138	113	163	DGKC, serum start 30°C
	U/l	94	77	111	DGKC, serum start 25°C
	U/l	218	179	257	DGKC, substrate start 37°C
	U/l	136	112	160	DGKC, substrate start 30°C
	U/l	93	76	110	DGKC, substrate start 25°C
	U/l	218	179	257	IFCC 37°C
	U/l	136	112	160	IFCC 30°C
	U/l	93	76	110	IFCC 25°C
	U/l	201	165	237	Dry Chemistry
γ-GT	U/l	46	39	53	Gamma Glutamyl-3-Carboxy-4-nitroanilide, 37°C
	U/l	36	31	41	Gamma Glutamyl-3-Carboxy-4-nitroanilide, 30°C
	U/l	28	24	32	Gamma Glutamyl-3-Carboxy-4-nitroanilide, 30°C
	U/l	51	43	59	IFCC 37°C
	U/l	40	34	46	IFCC 30°C
	U/l	31	27	35	IFCC 25°C
	U/l	41	35	47	Gamma Glutamyl 4 nitroanilide, 37°C
	U/l	32	28	36	Gamma Glutamyl 4 nitroanilide, 30°C
	U/l	25	22	28	Gamma Glutamyl 4 nitroanilide, 25°C
	U/l	52	44	60	Randox Gamma Glutamyl. 3 carboxy-4-nitroanilide,
	U/l	41	35	47	Randox Gamma Glutamyl. 3 carboxy-4-nitroanilide,
	U/l	32	27	37	Randox Gamma Glutamyl. 3 carboxy-4-nitroanilide,
	U/l	61	52	70	Dry Chemistry
GLDH	U/l	19	15	23	DGKC 37°C
	U/l	15	12	18	DGKC 30°C
	U/l	12	9	15	DGKC 25°C

Component	Units	Targe	MEAN OF ALL INSTRUMENTS		Method
			Range		
			Low	High	
$\alpha$ -HBDH	U/l	234	185	283	DGKC 37°C
	U/l	177	140	214	DGKC 30°C
	U/l	132	105	159	DGKC 25°C
LAP	U/l	16	14	18	NAGEL 37°C
LDH	U/l	396	337	455	P→L, DGKC, 37°C
	U/l	286	243	329	P→L, DGKC, 30°C
	U/l	201	171	231	P→L, DGKC, 25°C
	U/l	442	376	508	P→L, SCE 37°C
	U/l	319	271	367	P→L, SCE 30°C
	U/l	224	191	257	P→L, SCE 25°C
	U/l	403	343	463	P→L, SFBC 37°C
	U/l	291	248	334	P→L, SFBC 30°C
	U/l	204	174	234	P→L, SFBC 25°C
	U/l	200	170	230	L→P IFCC 37°C
	U/l	144	123	165	L→P IFCC 30°C
	U/l	101	86	116	L→P IFCC 25°C
	U/l	193	164	222	L→P 37°C
	U/l	139	118	160	L→P 30°C
	U/l	98	83	113	L→P 25°C
	U/l	593	504	682	Dry Chemistry
Lipase	U/l	44	35	53	Colorimetric 37°C
	U/l	202	162	242	Turbidimetric with Colipase 37°C
Cortisol	nmol/l	533	400	666	Roche Cobas E411
	$\mu$ g/dl	19.2	14.4	24.0	
Digoxin	nmol/l	1.95	1.56	2.34	Immunoturbidimetric
	ng/ml	1.52	1.22	1.82	
Folate	nmol/l	36.1	27.4	44.8	Roche Cobas E411
	ng/ml	15.9	12.1	19.7	
Gentamycin	mg/l	4.12	3.30	4.94	Immunoturbidimetric
Paracetamol	mg/l	12.0	9.53	14.5	Colorimetric
Salicylate	mg/dl	5.60	4.49	6.71	Enzymatic
Theophylline	mg/dl	0.447	0.357	0.537	Immunoturbidimetric
Tobramycin	$\mu$ g/dl	258	206	310	Immunoturbidimetric
Apolipoprotein A-1	mg/dl	110	90.2	130	Immunoturbidimetric
Apolipoprotein B-1	mg/dl	57.3	47.0	67.6	Immunoturbidimetric
IgA	g/l	1.42	1.07	1.77	Immunoturbidimetric
IgG	g/l	6.61	5.42	7.80	Immunoturbidimetric
IgM	g/l	0.77	0.61	0.92	Immunoturbidimetric
Thyroxine	nmol/l	101	75.8	126	Abbott Architect
	$\mu$ g/dl	7.88	5.91	9.85	
Free Thyroxine	pmol/l	20.0	15.0	25.0	Abbott Architect
	pg/ml	15.6	11.7	19.5	
Triiodothyronine	nmol/l	2.43	1.82	3.04	Abbott Architect
	ng/ml	1.58	1.18	1.98	
Transferrin	g/l	1.83	1.46	2.20	Immunoturbidimetric
Thyroid Stimulating Hormone (TSH)	$\mu$ IU/ml	1.17	0.93	1.41	Abbott Architect
Vitamin B12	pmol/l	545	436	654	Roche Cobas E411
	pg/ml	738	591	885	
Electrophoresis					Beckman Capillary
Albumin		68.6	61.8	75.4	% of total Protein
Globulin		31.4	28.3	34.5	% of total Protein
$\alpha$ -1-globulin		5.9	4.5	7.3	% of total Protein
$\alpha$ -2-globulin		5.8	4.4	7.2	% of total Protein
$\beta$ -globulin		9.1	6.9	11.3	% of total Protein
$\gamma$ -globulin		10.6	8.1	13.1	% of total Protein



COMPONENT	UNITS	TARGET	SIEMENS DIMENSION <sup>®</sup>		METHOD
			RANGE		
			LOW	HIGH	
Albumin	g/l	43.4	36.9	49.9	Bromocresol Purple
	g/dl	4.34	3.69	4.99	
Direct Bilirubin	µmol/l	11.8	9.28	14.3	Diazo with Sulphanilic acid
	mg/dl	0.690	0.543	0.837	
Total Bilirubin	µmol/l	27.4	21.7	33.1	Diazo with Sulphanilic acid
	mg/dl	1.60	1.27	1.93	
Calcium	mmol/l	2.17	1.95	2.39	Cresolphthalein complexone
	mg/dl	8.70	7.82	9.58	
Chloride mmol/l = mEq/l	mmol/l	96.8	89.1	105	ISE
Cholesterol	mmol/l	3.61	3.14	4.08	CholesterolOxidase(CHODPAP)
	mg/dl	139	121	157	
Creatinine	µmol/l	129	103	155	Alkaline picrate without deproteinization
	mg/dl	1.46	1.16	1.76	
Glucose	mmol/l	6.28	5.34	7.22	Hexokinase
	mg/dl	113	96.2	130	
Iron	µmol/l	16.0	13.1	18.9	Colorimetric without precipitation, (Ferrozine/Ferene)
	µg/dl	89.4	73.2	106	
Magnesium	mmol/l	0.90	0.79	1.00	Methylthymol blue
	mg/dl	2.17	1.91	2.43	
Phosphorus Inorganic	mmol/l	1.38	1.10	1.66	Phosphomolybdate reduction UV
	mg/dl	4.28	3.41	5.15	
Potassium mmol/l = mEq/l	mmol/l	4.01	3.69	4.33	ISE
Sodium mmol/l = mEq/l	mmol/l	143	136	150	ISE
Total Protein	g/l	61.0	48.8	73.2	Biuret reaction, endpoint
	g/dl	6.10	4.88	7.32	
Triglycerides	mmol/l	1.02	0.86	1.18	Lipase/Glycerol Dehydrogenase
	mg/dl	90.3	75.9	105	
Urea	mmol/l	7.07	6.01	8.13	BUN.
	mg/dl	19.8	16.8	22.8	
Uric Acid	mmol/l	0.33	0.29	0.38	Uricase peroxidase, Colorimetric
	mg/dl	5.59	4.87	6.31	
ALP	U/l	159	135	183	p-Nitrophenylphosphate, AMP, 37°C
ALT	U/l	45	36	54	IFCC with Pyridoxal 5 Phosphate, 37°C
Amylase	U/l	96	82	110	CNPG 37 <sup>0</sup> C
AST	U/l	48	38	58	IFCC with Pyridoxal 5 Phosphate,37°C
CK (CPK)	U/l	200	164	236	Modified Oliver/Rosalki 37°C
γ-GT	U/l	54	46	62	Modified IFCC 37 <sup>0</sup> C
LDH	U/l	200	170	230	L→P 37°C

COMPONENT/	UNITS	TARGET	POLYCHEM <sup>®</sup> RANGE		METHOD
			LOW	HIGH	
Albumin	g/l	41.6	35.4	47.8	Bromocresol Green
	g/dl	4.16	3.54	4.78	
Bicarbonate	mmol/l	14.5	11.5	17.5	Enzymatic
Direct Bilirubin	µmol/l	19.0	15.0	23.0	Diazo with Sulphanilic Acid
	mg/dl	1.11	0.878	1.34	
Total Bilirubin	µmol/l	31.0	24.5	37.5	Diazo with Sulphanilic acid
	mg/dl	1.81	1.43	2.19	
Calcium	mmol/l	2.31	2.08	2.54	Cresolphthalein complexone
	mg/dl	9.26	8.33	10.2	
Chloride mmol/l = mEq/l	mmol/l	96.9	89.1	105	ISE Direct
Cholesterol	mmol/l	4.29	3.73	4.85	Cholesterol Oxidase (CHOD PAP)
	mg/dl	166	144	188	
Creatinine	µmol/l	121	97.2	145	Alkaline picrate without deproteinization
	mg/dl	1.37	1.10	1.64	
Glucose	mmol/l	6.48	5.51	7.45	Hexokinase
	mg/dl	117	99.3	135	
	mmol/l	6.50	5.53	7.47	Glucose oxidase/GOD-PAP
	mg/dl	117	99.7	134	
Iron	µmol/l	18.3	15.0	21.6	Colorimetric without precipitation, (Ferene/Ferrozine Method)
	µg/dl	102	83.9	120	
Magnesium	mmol/l	0.94	0.83	1.05	Xylidyl Blue
	mg/dl	2.28	2.00	2.56	
Phosphorus Inorganic	mmol/l	1.35	1.08	1.62	Phosphomolybdate reduction UV
	mg/dl	4.19	3.35	5.03	
Potassium mmol/l = mEq/l	mmol/l	4.07	3.75	4.39	ISE Direct
Sodium mmol/l = mEq/l	mmol/l	142	135	149	ISE Direct
Total Protein	g/l	60.2	48.2	72.2	Biuret reaction, endpoint
	g/dl	6.02	4.82	7.22	
Triglycerides	mmol/l	1.09	0.92	1.26	Lipase/GPO-PAP Color. without Glycerol Correction
	mg/dl	96.5	81.1	112	
Urea	mmol/l	7.02	5.97	8.07	Urease, kinetic
	mg/dl	42.2	35.9	48.5	
	mmol/l	7.02	5.97	8.07	BUN.
	mg/dl	19.7	16.7	22.7	
Uric Acid	mmol/l	0.35	0.30	0.39	Randox 546 nm/BM/Roche Uric Acid plus
	mg/dl	5.83	5.07	6.59	
ALP	U/l	178	151	205	p-Nitrophenylphosphate, AMP, 37°C
	U/l	293	249	337	p-Nitrophenylphosphate, DEA, 37°C
ALT	U/l	40	32	48	IFCC NO Pyridoxal 5 Phosphate, 37°C
Amylase	U/l	99	84	114	Randox EPS Liquid 37°C
AST	U/l	39	31	47	IFCC NO Pyridoxal 5 Phosphate, 37°C
CK (CPK)	U/l	221	181	261	DGKC, substrate start 37°C
γ-GT	U/l	52	44	60	Gamma Glutamyl-3-Carboxy-4-nitroanilide, 37°C
LDH	U/l	412	350	474	P→L, DGKC, 37°C
	U/l	203	173	233	L→P 37°C

Lot Number: 1088UN, Exp. Date: 2020-01-28

Component	Target	Range	Unit
Albumin	4.1	3.5-4.7	g/dl
ALP	224	157-291	U/L
ALT	30	24-36	U/L
Amylase	90	63-117	U/L
AST	30	24-36	U/L
BUN	21	17-25	mg/dl
Calcium	8.7	7.4-10.0	mg/dl
Cholesterol	155	124-186	mg/dl
CPK	171	120-222	U/L
Creatinine	1.26	0.96-1.56	mg/dl
GGT	61	43-79	U/L
Glucose	112	95-129	mg/dl
HDL-Cholesterol	36	25-47	mg/dl
Magnesium	2.2	1.6-2.8	mg/dl
Phosphorus	3.7	3.1-4.3	mg/dl
Total Bilirubin	1.4	1.0-1.8	mg/dl
Total Protein	5.8	4.6-7.0	g/dl
Triglyceride	86	64-108	mg/dl
Uric Acid	5.4	4.5-6.3	mg/dl

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