# RANDOX

# **HUMAN ASSAYED MULTI-SERA - LEVEL 2** (HUM ASY CONTROL 2)

CAT. NO.	HN1530	GTIN:	05055273203783	SIZE:	20 x 5ml
CAT. NO.	HS2611	GTIN:	05055273203813	SIZE:	5 x 5ml
LOT NO.	1665UN	EXPIRY:	2027-07-28		

### INTENDED USE

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

#### DEVICE DESCRIPTION

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

## SAFETY PRECAUTIONS AND WARNINGS

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

Human source material, from which this product has been derived, has been tested at donor level for the Human Immunodeficiency Virus (HIV 1, HIV 2) antibody, Hepatitis B Surface Antigen (HbsAg), and Hepatitis C Virus (HCV) antibody and found to be NONREACTIVE. FDA approved methods have been used to conduct these tests. However, since no method can offer complete assurance as to the absence of infectious agents, this material and all patient samples should be handled as though capable of transmitting infectious diseases and disposed of accordingly

Health and Safety Data Sheets are available on request.

### STORAGE AND STABILITY

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

#### LIMITATIONS

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

Alkaline Phosphatase levels in the reconstituted serum will rise over the stability period. It is recommended that the reconstituted serum is allowed to stand for 1 hour at +15°C to +25°C before measurement. Bilirubin in the serum is light sensitive and it is recommended that the serum is stored in the dark. Stored in the dark, it is stable for 4 days at +2°C to +8°C. Do not store at +15°C to +25°C. Do not freeze.

GLDH is stable for 2 days at 2-8°C.

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

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

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

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

The control should not be used as a calibration material.

Due to the zinc content in some batches of rubber stoppers, the QC and calibrator material should be aliquoted into polypropylene

tubes and stored at +2°C to +8°C to ensure stable zinc levels throughout the stability period.

# PREPARATION FOR USE

The Human Assayed Multi-sera is supplied lyophilised.

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 Assaved Multi-sera - Level 2 20 x 5ml / 5 x 5ml

# MATERIALS REQUIRED BUT NOT PROVIDED

Volumetric pipette

# ASSIGNED VALUES

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

Each batch of assayed human serum is submitted to reference laboratories for assignment against international Reference Standards

Where international Reference Standards are unavailable, Reference Methods are used. Values are also collected from approx. 3000 laboratories worldwide and using a unique statistical analysis, a value is assigned.

With each batch, a control range is provided for individual parameters and each parameter method. The control range is equivalent to the assigned mean ±2S.D. If an instrument specific value is not available, refer to the Method section. If necessary, contact Randox Laboratories - Technical Services, Northern Ireland, tel: +44 (0) 28 9445 1070 or email Technical.Services@randox.com. NOTES

# All trademarks recognised.

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

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# RANDOX

Analyte unit Target low high 15D 25D methods   Alburnin g/dl 4.07 3.46 4.68 0.31 0.61 Bromocresol Green   Alburnin g/dl 4.07 3.46 4.68 Dethonolamine buffer DEA 37C   ALT (GPT) U/L 38 30 46 4 8 Tris buffer without PSP 37C   AST (GOT) U/L 36 2.8 44 4.0 8 Tris buffer without PSP 37C   Apolipoprotein A-1 mg/dl 1.11 91.0 131 10 20.0 Immunoturbidimetric   Apolipoprotein B mg/dl 1.64.4 52.8 76.0 5.8 11.6 Immunoturbidimetric   Apolipoprotein B mg/dl 1.5 1.18 1.82 0.16 0.32 Dichlorophenyl Diazonium (DPD)   mg/dl 1.5 1.24 1.90 0.42 0.84 0.40 0.84 0.40 0.84 0.40 0.84 0.84 0.40 0.84 <td< th=""><th colspan="9">METHOD HUMAN ASSAYED MULTI-SERA - LEVEL 2</th></td<>	METHOD HUMAN ASSAYED MULTI-SERA - LEVEL 2								
Albumin g/dl 4,07 3,46 4,68 0.31 0.61 Bromocreol Green   Alkaline Phosphatase U/L 280 228 322 21 42 Diethanolamine Urle DR 37'C   ALT (GPT) U/L 36 30 46 4 8 Tris buffer without PS 37'C   Amylase Total U/L 90 77 103 6.5 13 pNP Maltotrioside substrates 37'C   Apolipoprotein A mg/dl 1.18 0.93 1.43 0.13 0.25 Dichlorophenyl Dizonium (DPD)   Bilirubin Direct mg/dl 1.5 1.18 1.82 0.16 0.32 Dichlorophenyl Dizonium (DPD)   Bilirubin Total mg/dl 1.5 1.18 1.82 0.16 0.32 Dichlorophenyl Dizonium (DPD)   Calcium mg/dl 8.34 7.49 9.19 0.425 0.85 Cresolphilamic momilaxon (CPC)   Choirde mm/dl 97 92.2 102 2.4 4.8 ISE direxet   Calcium mg/dl	Lot. No. 1665UN	EXPIRY:	2027-07-28	Ca	at. No.	HN1530	/ HS	52611	
Alkaline Phosphatase U/L 280 238 322 21 42 Diethanolamine buffer DEA 37°C   AIT (GPT) U/L 38 30 46 4 8 Tris buffer without PSP 37°C   AST (GOT) U/L 90 77 103 6.5 13 pNP Maltorioside substrates 37°C   Apolipoprotein A-1 mg/dl 111 91.0 131 10 20.0 Immunoturbidimetric   Apolipoprotein B mg/dl 1.18 0.93 1.43 0.13 0.25 Dichlorophenyl Diazonlum (DPD)   Bilirubin Total mg/dl 1.57 1.24 1.90 0.17 0.33 Diazo with Dichloraniline (DCA)   Mg/dl 1.57 1.24 1.90 0.17 0.33 Diazo with Dichloraniline (DCA)   mg/dl 1.57 1.24 1.90 0.17 0.33 Diazo with Dichloraniline (DCA)   Calcium mg/dl 1.51 1.77 10.5 21 Cholesterol Onidase C/CA)   Choiotide mm/dl 1.42	Analyte	unit	Target	low	high	1SD	2SD	methods	
ALT (GPT) U/L 38 30 46 4 8 Tris buffer without PSP 37'C   AST (GOT) U/L 36 28 44 4.0 8 Tris buffer without PSP 37'C   Anylase Total U/L 90 77 13 6,5 13 pVP Matorioide subtrates 37'C   Apolipoprotein A-1 mg/dl 1.11 91.0 131 10 20.0 Immunotrubidimetric   Apolipoprotein B mg/dl 1.48 0.33 1.66 0.32 Dichorophenyl Diazonium (DPD)   Bilirubin Total mg/dl 1.57 1.24 1.90 0.17 0.33 Diazo with Dichoronalline (DCA)   mg/dl 8.34 7.49 9.19 0.422 0.84 Arsenazo III   Calcium mg/dl 1.55 1.33 177 10.5 21 Cholesterol Oxidase   Choleide mm/dl 1.56 135 177 34 CK-NAC (ECC) 37C   Copper µg/dl 1.44 1.51 1.73 0.15 <t< td=""><td>Albumin</td><td>g/dl</td><td>4.07</td><td>3.46</td><td>4.68</td><td>0.31</td><td>0.61</td><td>Bromocresol Green</td></t<>	Albumin	g/dl	4.07	3.46	4.68	0.31	0.61	Bromocresol Green	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Alkaline Phosphatase	U/L	280	238	322	21	42	Diethanolamine buffer DEA 37°C	
Arnylase Total U/L 90 77 103 6.5 13 pNP Maltotrioide substrates 37°C   Apolipoprotein A-1 mg/dl 111 91.0 131 10 20.0 Immunoturbidimetric   Apolipoprotein B mg/dl 1.44 52.8 76.0 5.8 11.6 Immunoturbidimetric   Bilirubin Direct mg/dl 1.12 0.88 1.36 0.12 0.24 Diazo with bichforoanline (DCA)   Bilirubin Total mg/dl 1.57 1.24 1.90 0.17 0.33 Diazo with bichforoanline (DCA)   Calcium mg/dl 8.46 7.62 9.30 0.42 0.84 Arsenazo III   Choinde mg/dl 1.56 135 177 1.02 1.04 Arsenazo III   Choinde mg/dl 1.44 1.15 1.73 0.15 0.29 Jaffe rate blanked   Creatinine mg/dl 1.44 1.15 1.73 0.15 0.29 Jaffe rate blanked   Glucose mg/dl <t< td=""><td>ALT (GPT)</td><td>U/L</td><td>38</td><td>30</td><td>46</td><td>4</td><td>8</td><td>Tris buffer without P5P 37°C</td></t<>	ALT (GPT)	U/L	38	30	46	4	8	Tris buffer without P5P 37°C	
Amylase Total U/L 90 77 103 6.5 13 pNP Maltotrioide substrates 37°C   Apolipoprotein A-1 mg/dl 111 91.0 131 10 20.0 Immunotubidimetric   Apolipoprotein B mg/dl 1.44 52.8 76.0 5.8 11.6 Immunotubidimetric   Bilirubin Direct mg/dl 1.12 0.88 1.36 0.12 0.24 Diazo with Dichioroanline (DCA)   Bilirubin Total mg/dl 1.57 1.24 1.90 0.17 0.33 Diazo with Dichioroanline (DCA)   Calcium mg/dl 8.46 7.62 9.30 0.42 0.84 Arsenazo III   Calcium mg/dl 156 135 177 10.5 21 Choiesterol Omg/dlase   Choiride mg/dl 1.44 1.15 1.73 0.15 0.29 Jaffe rate blanked   Creatinine mg/dl 1.44 1.15 1.73 0.15 0.29 Jaffe rate blanked   Glucose mg/dl	AST (GOT)	U/L	36	28	44	4.0	8	Tris buffer without P5P 37°C	
Apolipoprotein B mg/dl 64.4 52.8 76.0 5.8 11.6 Immunoturbidimetric   Bilirubin Direct mg/dl 1.18 0.93 1.43 0.13 0.25 Dichioropheryl Diazonium (DPD)   Bilirubin Total mg/dl 1.5 1.18 1.82 0.16 0.32 Dichioropheryl Diazonium (DPD)   mg/dl 1.57 1.24 1.90 0.17 0.33 Diazo with Dichiorozniline (DCA)   mg/dl 8.34 7.49 9.19 0.425 0.85 Cresolphthalein complexone (PC)   Cholosterol mg/dl 1.55 1.57 10.5 2.1 Cholesterol Oxidase   Choride mmo/l 97 92.2 102 2.4 4.8 ISE direct   CK Total U/L 189 155 223 17 34 CK+NAC (IFC) 37C   Copper µg/dl 1.11 88.4 134 11.30 22.6 Colorimetric   Glucose mg/dl 1.42 1.14 1.70 0.14	Amylase Total	U/L	90	77	103	6.5	13	pNP Maltotrioside substrates 37°C	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Apolipoprotein A-1	mg/dl	111	91.0	131	10	20.0	Immunoturbidimetric	
Bilirubin Direct mg/dl 1.12 0.88 1.36 0.12 0.24 Diazo with Dichloroanilline (DCA)   Bilirubin Total mg/dl 1.5 1.18 1.82 0.16 0.32 Dichlorophenyl Diazonium (DPD)   Calcium mg/dl 8.46 7.62 9.30 0.42 0.34 Arsenazo III   Calcium mg/dl 8.46 7.62 9.30 0.42 0.34 Arsenazo III   Cholesterol mg/dl 156 135 177 10.5 21 Cholesterol Oxidase   Cholotide mmol/i 97 92.2 102 2.4 4.8 156 direct   CK Total U/L 189 155 223 17 34 CK-NaC (IFCC) 3*C   Creatinine mg/dl 1.44 1.12 1.73 0.14 0.28 Enzymatic UV method   gamma-GT U/L 50 42 58 4.0 8.0 Gucose mg/dl 1.42 1.41 1.70 0.14 0.28 <	Apolipoprotein B	mg/dl	64.4	52.8	76.0	5.8	11.6	Immunoturbidimetric	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		mg/dl	1.18	0.93	1.43	0.13	0.25	Dichlorophenyl Diazonium (DPD)	
$\begin{split} & \mbox{Billrubin Total} & \mbox{mg/dl} & 1.57 & 1.24 & 1.90 & 0.17 & 0.33 & Diazo with Dichloroanilline (DCA) \\ & \mbox{mg/dl} & 8.46 & 7.62 & 9.30 & 0.42 & 0.84 & Arsenazo III \\ & \mbox{mg/dl} & 8.34 & 7.49 & 9.19 & 0.425 & 0.85 & Cresolphthalein complexone (CPC) \\ & \mbox{Cholesterol} & \mbox{mg/dl} & 156 & 135 & 177 & 10.5 & 21 & \mbox{Cholesterol} Oxidase \\ & \mbox{Chloride} & \mbox{mov}/I & 97 & 92.2 & 102 & 2.4 & 4.8 & ISE direct \\ & \mbox{Cholesterol} & \mbox{mov}/I & 189 & 155 & 223 & 17 & 34 & \mbox{CrNAC}(FCC) 37C \\ & \mbox{Copper} & \mbox{µg/dl} & 111 & 88.4 & 134 & 11.30 & 22.6 & \mbox{Colormetric} \\ & \mbox{mg/dl} & 1.42 & 1.14 & 1.70 & 0.14 & 0.28 & \mbox{Enzymatic UV method} \\ & \mbox{mg/dl} & 1.42 & 1.14 & 1.70 & 0.14 & 0.28 & \mbox{Enzymatic UV method} \\ & \mbox{garma-GT} & \mbox{U/L} & 50 & 42 & 58 & 4.0 & 8.0 & \mbox{Guiase} & \mbox{HDL} & \mbox{Cholesterol} & \mbox{mg/dl} & 1.92 & 2.52 & 60.6 & 3.85 & 7.7 & \mbox{HDL} & \mbox{UVra} & \mbox{HDL} & \mbox{Cholesterol} & \mbox{mg/dl} & 73 & 61.0 & 85.0 & 6 & 12 & \mbox{Direct (biomedic)} \\ & \mbox{Immunoglobulin A} & \mbox{mg/dl} & 52.9 & 45.2 & 60.6 & 3.85 & 7.7 & \mbox{HDL} & \mbox{Immunoturbidimetric} \\ & \mbox{Immunoglobulin A} & \mbox{mg/dl} & 50.7 & 945 & 72 & 144 & \mbox{Immunoturbidimetric} \\ & \mbox{Immunoglobulin A} & \mbox{mg/dl} & 13.9 & 11.4 & 16.4 & 1.25 & 2.5 & \mbox{Colorimetric abase} \\ & \mbox{ID(LDH)} & \mbox{U/L} & 45 & 36.0 & 54.0 & 4.5 & 9 & \mbox{Randowning Bouth 37^{\circ}C} \\ & \mbox{Lipase} & \mbox{U/L} & 45 & 36.0 & 54.0 & 4.5 & 9 & \mbox{Randowning Bouth 37^{\circ}C} \\ & \mbox{Lipase} & \mbox{U/L} & 453 & 3.84 & 5.22 & 0.35 & 0.69 & \mbox{Phosphomolybate UV} \\ & \mbox{Ref} & \mbox{mov}/ & 0.98 & 0.87 & 1.09 & 0.056 & 0.112 \\ & \mbox{mov}/ & 0.98 & 0.87 & 1.09 & 0.056 & 0.112 \\ & \mbox{Immunoglobulin} & \mbox{mov}/ & 1.19 & 0.95 & 1.43 & 0.12 & 0.24 & \mbox{Colorimetric 37^{\circ}C} \\ & \mbox{Lipase} & \mbox{U/L} & 453 & 3.84 & 5.22 & 0.35 & 0.69 & \mbox{Phosphomolybate UV} \\ & \mbox{Petassium} & \mbov// & 0.98 & 0.87 & 1.09 $	Bilirubin Direct	mg/dl	1.12	0.88	1.36	0.12	0.24	Diazo with Dichloroaniline (DCA)	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		mg/dl	1.5	1.18	1.82	0.16	0.32	Dichlorophenyl Diazonium (DPD)	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Bilirubin Total	mg/dl	1.57	1.24	1.90	0.17	0.33	Diazo with Dichloroaniline (DCA)	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		mg/dl	8.46	7.62	9.30	0.42	0.84	Arsenazo III	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Calcium		8.34	7.49	9.19	0.425	0.85	Cresolphthalein complexone (CPC)	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Cholesterol	_	156	135	177	10.5	21	Cholesterol Oxidase	
$ \begin{array}{c c} Copper & \mu g/dl & 111 & 88.4 & 134 & 11.30 & 22.6 & Colorimetric \\ \hline mg/dl & 1.44 & 1.15 & 1.73 & 0.15 & 0.29 & Jaffe rate blanked \\ \hline mg/dl & 1.42 & 1.14 & 1.70 & 0.14 & 0.28 & Enzymatic UV method \\ gamma-GT & U/L & 50 & 42 & 58 & 4.0 & 8.0 & Gamma Gatamyl-3 Catabox 4-interaulide (IFCG 37C Glucose mg/dl & 109 & 92.4 & 126 & 8.3 & 16.6 & Glucose oxidase \\ HDL - Cholesterol & mg/dl & 52.9 & 45.2 & 60.6 & 3.85 & 7.7 & HDL - Ultra \\ LDL - Cholesterol & mg/dl & 73 & 61.0 & 85.0 & 6 & 12 & Direct (biomedic) \\ Inmunoglobulin A & mg/dl & - & - & - & - & - & Immunoturbidimetric \\ Inmunoglobulin G & mg/dl & 66.9 & 54 & 80 & 6.7 & 13.4 & Immunoturbidimetric \\ Inmunoglobulin G & mg/dl & 110 & 90.0 & 130 & 10 & 20 & Colorimetric without ppt. \\ Lactate & mg/dl & 13.9 & 11.4 & 16.4 & 1.25 & 2.5 & Colorimetric Lactate Oxidase \\ LD (LDH) & U/L & 412 & 350 & 474 & 31 & 62 & P-SL Scandinavian & Dutch 37^{*C} \\ Lipase & U/L & 45 & 36.0 & 54.0 & 4.5 & 9 & Randox Colorimetric 37^{*C} \\ mg/dl & 0.678 & 0.597 & 0.759 & 0.04 & 0.08 \\ Magnesium & mg/dl & 2.27 & 2.00 & 2.54 & 0.14 & 0.27 & xylidyl Blue \\ NEFA & mmol/l & 1.19 & 0.95 & 1.43 & 0.12 & 0.24 & Colorimetric \\ Phosphorus & mg/dl & 4.53 & 3.84 & 5.22 & 0.35 & 0.69 & Phosphomolybdate UV \\ Potasium & mmol/l & 1.9 & 9.12 & 146 & 3.5 & 7.0 & IS method - direct \\ Protein Total & g/dl & 5.79 & 4.63 & 6.95 & 0.58 & 1.16 & Biuret reaction end point \\ TIBC & \mu g/dl & 264 & 209 & 319 & 28 & 55 & Calculated from Transferrin \\ Transferrin & mg/dl & 5.68 & 4.94 & 6.42 & 0.37 & 0.74 & Urcase knietic \\ Urca & mg/dl & 5.68 & 4.94 & 6.42 & 0.37 & 0.74 & Urcase knietic \\ Urca & mg/dl & 46.6 & 39.6 & 53.6 & 3.5 & 7.0 & Urcase knietic \\ \end{array}$	Chloride	mmol/l	97	92.2	102	2.4	4.8	ISE direct	
$\begin{array}{c c} \label{eq:realing} $ $ $ $ $ $ $ $ $ $ $ $ $ $ $ $ $ $ $$	CK Total	U/L	189	155	223	17	34	CK-NAC (IFCC) 37°C	
Creatinine $mg/dl$ 1.42 1.14 1.70 0.14 0.28 Enzymatic UV method   gamma-GT U/L 50 42 58 4.0 8.0 Gamma Gutamyl-3-Carbony-4-Introamble (IFC) 37C   Glucose mg/dl 109 92.4 126 8.3 16.6 Glucose oxidase   HDL - Cholesterol mg/dl 52.9 45.2 60.6 3.85 7.7 HDL - Ultra   LDL - Cholesterol mg/dl 73 61.0 85.0 6 12 Direct (biomedic)   Immunoglobulin A mg/dl - - - Immunoturbidimetric   Immunoglobulin G mg/dl 66.9 54 80 6.7 13.4 Immunoturbidimetric   Inmunoglobulin M mg/dl 110 90.0 130 10 20 Colorimetric lactate Oxidase   ID (LDH) U/L 412 350 474 31 62 P>LS candinavian & Dutch 37°C   Upsae U/L 45 36.0 54.0	Copper	µg/dl	111	88.4	134	11.30	22.6	Colorimetric	
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$			1.44	1.15	1.73	0.15	0.29	Jaffe rate blanked	
Glucose mg/dl 109 92.4 126 8.3 16.6 Glucose oxidase   HDL - Cholesterol mg/dl 52.9 45.2 60.6 3.85 7.7 HDL - Ultra   LDL - Cholesterol mg/dl 73 61.0 85.0 6 12 Direct (biomedic)   Immunoglobulin A mg/dl - - - Immunoturbidimetric   Immunoglobulin G mg/dl 801 657 945 72 144 Immunoturbidimetric   Immunoglobulin M mg/dl 66.9 54 80 6.7 13.4 Immunoturbidimetric   Iron µg/dl 110 90.0 130 10 20 Colorimetric without ppt.   Lactate mg/dl 13.9 11.4 16.4 1.25 2.5 Colorimetric lactate Oxidase   LD (LDH) U/L 412 350 474 31 62 P>L Scandinavian & Dutch 37°C   Libase U/L 45 36.0 54.0 4.5 9<	Creatinine	mg/dl	1.42	1.14	1.70	0.14	0.28	Enzymatic UV method	
HDL - Cholesterol mg/dl 52.9 45.2 60.6 3.85 7.7 HDL - Ultra   LDL - Cholesterol mg/dl 73 61.0 85.0 6 12 Direct (biomedic)   Immunoglobulin A mg/dl - - - Immunoturbidimetric   Immunoglobulin G mg/dl 801 657 945 72 144 Immunoturbidimetric   Immunoglobulin M mg/dl 110 90.0 130 10 20 Colorimetric without ppt.   Lactate mg/dl 13.9 11.4 16.4 1.25 2.5 Colorimetric Lactate Oxidase   LD (LDH) U/L 412 350 474 31 62 P->L Scandinavian & Dutch 37°C   Lipase U/L 45 36.0 54.0 4.5 9 Randox Colorimetric 37°C   Lithium mg/dl 0.678 0.597 0.759 0.04 0.08   NEFA mmol/I 1.19 0.95 1.43 0.12 0.24 <	gamma-GT	U/L	50	42	58	4.0	8.0	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C	
LDL - Cholesterol mg/dl 73 61.0 85.0 6 12 Direct (biomedic)   Immunoglobulin A mg/dl - - - Immunoturbidimetric   Immunoglobulin G mg/dl 801 657 945 72 144 Immunoturbidimetric   Immunoglobulin M mg/dl 66.9 54 80 6.7 13.4 Immunoturbidimetric   Iron µg/dl 110 90.0 130 10 20 Colorimetric without ppt.   Lactate mg/dl 13.9 11.4 16.4 1.25 2.5 Colorimetric Lactate Oxidase   LD (LDH) U/L 412 350 474 31 62 P->L Scandinavian & Dutch 37°C   Lipase U/L 45 36.0 54.0 4.5 9 Randox Colorimetric 37°C   Lithium mmol/I 0.98 0.87 1.09 0.056 0.112 Ion selective electrode   Magnesium mg/dl 2.27 2.00 2.54 0.14 </td <td>Glucose</td> <td>mg/dl</td> <td>109</td> <td>92.4</td> <td>126</td> <td>8.3</td> <td>16.6</td> <td>Glucose oxidase</td>	Glucose	mg/dl	109	92.4	126	8.3	16.6	Glucose oxidase	
Immunoglobulin A mg/dl - - - Immunoturbidimetric   Immunoglobulin G mg/dl 801 657 945 72 144 Immunoturbidimetric   Immunoglobulin M mg/dl 66.9 54 80 6.7 13.4 Immunoturbidimetric   Iron µg/dl 110 90.0 130 10 20 Colorimetric without ppt.   Lactate mg/dl 13.9 11.4 16.4 1.25 2.5 Colorimetric Lactate Oxidase   LD (LDH) U/L 412 350 474 31 62 P->L Scandinavian & Dutch 37°C   Lipase U/L 45 36.0 54.0 4.5 9 Randox Colorimetric 37°C   Lithium mg/dl 0.678 0.597 0.759 0.04 0.08 Ion selective electrode   Magnesium mg/dl 2.27 2.00 2.54 0.14 0.27 Xylidyl Blue   NEFA mmol/l 1.19 0.95 1.43 0.12	HDL - Cholesterol	mg/dl	52.9	45.2	60.6	3.85	7.7	HDL - Ultra	
Immunoglobulin G mg/dl 801 657 945 72 144 Immunoturbidimetric   Immunoglobulin M mg/dl 66.9 54 80 6.7 13.4 Immunoturbidimetric   Iron µg/dl 110 90.0 130 10 20 Colorimetric without ppt.   Lactate mg/dl 13.9 11.4 16.4 1.25 2.5 Colorimetric Lactate Oxidase   LD (LDH) U/L 412 350 474 31 62 P->L Scandinavian & Dutch 37°C   Lipase U/L 45 36.0 54.0 4.5 9 Randox Colorimetric 37°C   Lithium mmol/I 0.98 0.87 1.09 0.056 0.112   Magnesium mg/dl 2.27 2.00 2.54 0.14 0.27 Xylidyl Blue   NEFA mmol/I 1.19 0.95 1.43 0.12 0.24 Colorimetric   Potassium mg/dl 4.53 3.84 5.22 0.35	LDL - Cholesterol	mg/dl	73	61.0	85.0	6	12	Direct (biomedic)	
Immunoglobulin M mg/dl 66.9 54 80 6.7 13.4 Immunoturbidimetric   Iron µg/dl 110 90.0 130 10 20 Colorimetric without ppt.   Lactate mg/dl 13.9 11.4 16.4 1.25 2.5 Colorimetric Lactate Oxidase   LD (LDH) U/L 412 350 474 31 62 P->L Scandinavian & Dutch 37°C   Lipase U/L 45 36.0 54.0 4.5 9 Randox Colorimetric 37°C   Lithium mmol/I 0.98 0.87 1.09 0.056 0.112   Magnesium mg/dl 2.27 2.00 2.54 0.14 0.27 Xylidyl Blue   NEFA mmol/I 1.19 0.95 1.43 0.12 0.24 Colorimetric   Phosphorus mg/dl 4.53 3.84 5.22 0.35 0.69 Phosphomolybdate UV   Potassium mmol/I 139 132 146 3.5 <td< td=""><td>Immunoglobulin A</td><td>mg/dl</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>Immunoturbidimetric</td></td<>	Immunoglobulin A	mg/dl	-	-	-	-	-	Immunoturbidimetric	
Iron µg/dl 110 90.0 130 10 20 Colorimetric without ppt.   Lactate mg/dl 13.9 11.4 16.4 1.25 2.5 Colorimetric Lactate Oxidase   LD (LDH) U/L 412 350 474 31 62 P->L Scandinavian & Dutch 37°C   Lipase U/L 45 36.0 54.0 4.5 9 Randox Colorimetric 37°C   Lithium mmol/I 0.98 0.87 1.09 0.056 0.112 Ion selective electrode   Magnesium mg/dl 2.27 2.00 2.54 0.14 0.27 Xylidyl Blue   NEFA mmol/I 1.19 0.95 1.43 0.12 0.24 Colorimetric   Phosphorus mg/dl 4.53 3.84 5.22 0.35 0.69 Phosphomolybdate UV   Potassium mmol/I 139 132 146 3.5 7.0 ISE method - direct   Sodium mmol/I 139 132 146	Immunoglobulin G	mg/dl	801	657	945	72	144	Immunoturbidimetric	
Lactate mg/dl 13.9 11.4 16.4 1.25 2.5 Colorimetric Lactate Oxidase   LD (LDH) U/L 412 350 474 31 62 P->L Scandinavian & Dutch 37°C   Lipase U/L 45 36.0 54.0 4.5 9 Randox Colorimetric 37°C   Lithium mmol/I 0.98 0.87 1.09 0.056 0.112   Magnesium mg/dl 0.678 0.597 0.759 0.04 0.08   Magnesium mg/dl 2.27 2.00 2.54 0.14 0.27 Xylidyl Blue   NEFA mmol/I 1.19 0.95 1.43 0.12 0.24 Colorimetric   Phosphorus mg/dl 4.53 3.84 5.22 0.35 0.69 Phosphomolybdate UV   Potassium mmol/I 3.96 3.76 4.16 0.10 0.20 ISE method - direct   Sodium mmol/I 139 132 146 3.5 7.0 ISE method	Immunoglobulin M	mg/dl	66.9	54	80	6.7	13.4	Immunoturbidimetric	
LD (LDH) U/L 412 350 474 31 62 P->L Scandinavian & Dutch 37°C   Lipase U/L 45 36.0 54.0 4.5 9 Randox Colorimetric 37°C   Lithium mmol/I 0.98 0.87 1.09 0.056 0.112 Ion selective electrode   Magnesium mg/dl 2.27 2.00 2.54 0.14 0.27 Xylidyl Blue   NEFA mmol/I 1.19 0.95 1.43 0.12 0.24 Colorimetric   Phosphorus mg/dl 4.53 3.84 5.22 0.35 0.69 Phosphomolybdate UV   Potassium mmol/I 3.96 3.76 4.16 0.10 0.20 ISE method - direct   Sodium mmol/I 139 132 146 3.5 7.0 ISE method - direct   Protein Total g/dl 5.79 4.63 6.95 0.58 1.16 Biuret reaction end point   TIBC µg/dl 264 209 319 <td>Iron</td> <td>µg/dl</td> <td>110</td> <td>90.0</td> <td>130</td> <td>10</td> <td>20</td> <td>Colorimetric without ppt.</td>	Iron	µg/dl	110	90.0	130	10	20	Colorimetric without ppt.	
Lipase U/L 45 36.0 54.0 4.5 9 Randox Colorimetric 37°C   Lithium mmol/I 0.98 0.87 1.09 0.056 0.112 Ion selective electrode   Magnesium mg/dl 0.678 0.597 0.759 0.04 0.08 Ion selective electrode   NEFA mmol/I 1.19 0.95 1.43 0.12 0.24 Colorimetric   Phosphorus mg/dl 4.53 3.84 5.22 0.35 0.69 Phosphomolybdate UV   Potassium mmol/I 3.96 3.76 4.16 0.10 0.20 ISE method - direct   Sodium mmol/I 139 132 146 3.5 7.0 ISE method - direct   Protein Total g/dl 5.79 4.63 6.95 0.58 1.16 Biuret reaction end point   TIBC µg/dl 264 209 319 28 55 Calculated from Transferrin   Triglycerides mg/dl 194 155	Lactate	mg/dl	13.9	11.4	16.4	1.25	2.5	Colorimetric Lactate Oxidase	
Lithium mmol/l 0.98 0.87 1.09 0.056 0.112 Ion selective electrode   Magnesium mg/dl 0.678 0.597 0.759 0.04 0.08 Ion selective electrode   Magnesium mg/dl 2.27 2.00 2.54 0.14 0.27 Xylidyl Blue   NEFA mmol/l 1.19 0.95 1.43 0.12 0.24 Colorimetric   Phosphorus mg/dl 4.53 3.84 5.22 0.35 0.69 Phosphomolybdate UV   Potassium mmol/l 3.96 3.76 4.16 0.10 0.20 ISE method - direct   Sodium mmol/l 139 132 146 3.5 7.0 ISE method - direct   Protein Total g/dl 5.79 4.63 6.95 0.58 1.16 Biuret reaction end point   TIBC µg/dl 264 209 319 28 55 Calculated from Transferrin   Triglycerides mg/dl 194 155	LD (LDH)	U/L	412	350	474	31	62	P->L Scandinavian & Dutch 37°C	
Lithium Ion selective electrode   Magnesium mg/dl 0.678 0.597 0.759 0.04 0.08   Magnesium mg/dl 2.27 2.00 2.54 0.14 0.27 Xylidyl Blue   NEFA mmol/l 1.19 0.95 1.43 0.12 0.24 Colorimetric   Phosphorus mg/dl 4.53 3.84 5.22 0.35 0.69 Phosphomolybdate UV   Potassium mmol/l 3.96 3.76 4.16 0.10 0.20 ISE method - direct   Sodium mmol/l 139 132 146 3.5 7.0 ISE method - direct   Protein Total g/dl 5.79 4.63 6.95 0.58 1.16 Biuret reaction end point   TIBC µg/dl 264 209 319 28 55 Calculated from Transferrin   Transferrin mg/dl 194 155 233 19.5 39.0 Immunoturbidimetric   Triglycerides mg/dl	Lipase	U/L	45	36.0	54.0	4.5	9	Randox Colorimetric 37°C	
mg/dl 0.678 0.597 0.759 0.04 0.08   Magnesium mg/dl 2.27 2.00 2.54 0.14 0.27 Xylidyl Blue   NEFA mmol/l 1.19 0.95 1.43 0.12 0.24 Colorimetric   Phosphorus mg/dl 4.53 3.84 5.22 0.35 0.69 Phosphomolybdate UV   Potassium mmol/l 3.96 3.76 4.16 0.10 0.20 ISE method - direct   Sodium mmol/l 139 132 146 3.5 7.0 ISE method - direct   Protein Total g/dl 5.79 4.63 6.95 0.58 1.16 Biuret reaction end point   TIBC µg/dl 264 209 319 28 55 Calculated from Transferrin   Transferrin mg/dl 194 155 233 19.5 39.0 Immunoturbidimetric   Triglycerides mg/dl 97.4 81.9 113 7.8 15.5 <	1.141.1	mmol/l	0.98	0.87	1.09	0.056	0.112		
NEFA mmol/l 1.19 0.95 1.43 0.12 0.24 Colorimetric   Phosphorus mg/dl 4.53 3.84 5.22 0.35 0.69 Phosphomolybdate UV   Potassium mmol/l 3.96 3.76 4.16 0.10 0.20 ISE method - direct   Sodium mmol/l 139 132 146 3.5 7.0 ISE method - direct   Protein Total g/dl 5.79 4.63 6.95 0.58 1.16 Biuret reaction end point   TIBC µg/dl 264 209 319 28 55 Calculated from Transferrin   Transferrin mg/dl 194 155 233 19.5 39.0 Immunoturbidimetric   Triglycerides mg/dl 97.4 81.9 113 7.8 15.5 Lipase/GPO-PAP   Uric Acid (Urate) mg/dl 5.68 4.94 6.42 0.37 0.74 Uricase Peroxidase with ascorbate oxidase @ 546nm	Litnium	mg/dl	0.678	0.597	0.759	0.04	0.08	Ion selective electrode	
Phosphorus mg/dl 4.53 3.84 5.22 0.35 0.69 Phosphomolybdate UV   Potassium mmol/l 3.96 3.76 4.16 0.10 0.20 ISE method - direct   Sodium mmol/l 139 132 146 3.5 7.0 ISE method - direct   Protein Total g/dl 5.79 4.63 6.95 0.58 1.16 Biuret reaction end point   TIBC µg/dl 264 209 319 28 55 Calculated from Transferrin   Transferrin mg/dl 194 155 233 19.5 39.0 Immunoturbidimetric   Triglycerides mg/dl 97.4 81.9 113 7.8 15.5 Lipase/GPO-PAP   Uric Acid (Urate) mg/dl 5.68 4.94 6.42 0.37 0.74 Uricase Peroxidase with ascorbate oxidase @ 546nm   Urea mg/dl 46.6 39.6 53.6 3.5 7.0 Urease kinetic	Magnesium	mg/dl	2.27	2.00	2.54	0.14	0.27	Xylidyl Blue	
Potassium mmol/l 3.96 3.76 4.16 0.10 0.20 ISE method - direct   Sodium mmol/l 139 132 146 3.5 7.0 ISE method - direct   Protein Total g/dl 5.79 4.63 6.95 0.58 1.16 Biuret reaction end point   TIBC μg/dl 264 209 319 28 55 Calculated from Transferrin   Transferrin mg/dl 194 155 233 19.5 39.0 Immunoturbidimetric   Triglycerides mg/dl 97.4 81.9 113 7.8 15.5 Lipase/GPO-PAP   Uric Acid (Urate) mg/dl 5.68 4.94 6.42 0.37 0.74 Uricase Peroxidase with ascorbate oxidase @ 546nm   Urea mg/dl 46.6 39.6 53.6 3.5 7.0 Urease kinetic	NEFA	mmol/l	1.19	0.95	1.43	0.12	0.24	Colorimetric	
Sodium mmol/l 139 132 146 3.5 7.0 ISE method - direct   Protein Total g/dl 5.79 4.63 6.95 0.58 1.16 Biuret reaction end point   TIBC µg/dl 264 209 319 28 55 Calculated from Transferrin   Transferrin mg/dl 194 155 233 19.5 39.0 Immunoturbidimetric   Triglycerides mg/dl 97.4 81.9 113 7.8 15.5 Lipase/GPO-PAP   Uric Acid (Urate) mg/dl 5.68 4.94 6.42 0.37 0.74 Uricase Peroxidase with ascorbate oxidase @ 546nm   Urea mg/dl 46.6 39.6 53.6 3.5 7.0 Urease kinetic	Phosphorus	mg/dl	4.53	3.84	5.22	0.35	0.69	Phosphomolybdate UV	
Protein Total g/dl 5.79 4.63 6.95 0.58 1.16 Biuret reaction end point   TIBC μg/dl 264 209 319 28 55 Calculated from Transferrin   Transferrin mg/dl 194 155 233 19.5 39.0 Immunoturbidimetric   Triglycerides mg/dl 97.4 81.9 113 7.8 15.5 Lipase/GPO-PAP   Uric Acid (Urate) mg/dl 5.68 4.94 6.42 0.37 0.74 Uricase Peroxidase with ascorbate oxidase @ 546nm   Urea mg/dl 46.6 39.6 53.6 3.5 7.0 Urease kinetic	Potassium	mmol/l	3.96	3.76	4.16	0.10	0.20	ISE method - direct	
TIBC μg/dl 264 209 319 28 55 Calculated from Transferrin   Transferrin mg/dl 194 155 233 19.5 39.0 Immunoturbidimetric   Triglycerides mg/dl 97.4 81.9 113 7.8 15.5 Lipase/GPO-PAP   Uric Acid (Urate) mg/dl 5.68 4.94 6.42 0.37 0.74 Uricase Peroxidase with ascorbate oxidase @ 546nm   Urea mg/dl 46.6 39.6 53.6 3.5 7.0 Urease kinetic	Sodium	mmol/l	139	132	146	3.5	7.0	ISE method - direct	
Transferrin mg/dl 194 155 233 19.5 39.0 Immunoturbidimetric   Triglycerides mg/dl 97.4 81.9 113 7.8 15.5 Lipase/GPO-PAP   Uric Acid (Urate) mg/dl 5.68 4.94 6.42 0.37 0.74 Uricase Peroxidase with ascorbate oxidase @ 546nm   Urea mg/dl 46.6 39.6 53.6 3.5 7.0 Urease kinetic	Protein Total	g/dl	5.79	4.63	6.95	0.58	1.16	Biuret reaction end point	
Triglycerides mg/dl 97.4 81.9 113 7.8 15.5 Lipase/GPO-PAP   Uric Acid (Urate) mg/dl 5.68 4.94 6.42 0.37 0.74 Uricase Peroxidase with ascorbate oxidase @ 546nm   Urea mg/dl 46.6 39.6 53.6 3.5 7.0 Urease kinetic	TIBC	μg/dl	264	209	319	28	55	Calculated from Transferrin	
Uric Acid (Urate) mg/dl 5.68 4.94 6.42 0.37 0.74 Uricase Peroxidase with ascorbate oxidase @ 546nm   Urea mg/dl 46.6 39.6 53.6 3.5 7.0 Urease kinetic	Transferrin	mg/dl	194	155	233	19.5	39.0	Immunoturbidimetric	
Urea mg/dl 46.6 39.6 53.6 3.5 7.0 Urease kinetic	Triglycerides	mg/dl	97.4	81.9	113	7.8	15.5	Lipase/GPO-PAP	
	Uric Acid (Urate)	mg/dl	5.68	4.94	6.42	0.37	0.74	Uricase Peroxidase with ascorbate oxidase @ 546nm	
mg/dl 21.8 18.5 25.1 1.65 3.30 BUN	Uroa	mg/dl	46.6	39.6	53.6	3.5	7.0	Urease kinetic	
		mg/dl	21.8	18.5	25.1	1.65	3.30	BUN	
Zinc μg/dl 152 121 183 16 31 Colorimetric	Zinc	µg/dl	152	121	183	16	31	Colorimetric	