

# Immunoassay Tri-Level Control ELISA Instruments / Methods

Immunoassay Control - Level 1 / Level 2 / Level 3



ISO 13485 accredited company



# Immunoassay Tri-Level Control

<b>REF</b>	BXC0363A	Level I	4 x 3ml	CE	2028 / 04	<b>LOT</b>	363D-1504-1
	BXC0363B	Level II	4 x 3ml				
	BXC0363C	Level III	4 x 3ml				
	BXC0363D	Trilevel	3 x 4 x 3ml	<b>IVD</b>	2°C - 8°C	i	
	BXC0363E	Trilevel	3 x 4 x 1ml				
							L1 363-01-007
							L2 363-02-007
							L3 363-03-007

## Intended Use

The Immunoassay Controls are intended for use as an assayed quality control material to monitor the consistency of performance of laboratory test procedures associated with determination and monitoring of the clinical status. This product is human serum based, lyophilized control and can be used with all RIA, EIA, ELISA or FIA methods.



## Summary and Explanation

The use of quality control material to assist in the assessment of accuracy and precision in the clinical laboratory is an integral part of laboratory practices.

## Reagents

Fortress Diagnostic's Immunoassay Controls are intended to be used in the same way as patient samples. The analyte activities are adjusted to concentrations in the low, middle and high range in order to monitor the effectiveness of the procedure in use.

## Instructions for Use

- (1). Bring the vials to room temperature before use.
- (2). Carefully unscrew and remove cap, being careful not to loose any material.
- (3). Reconstitute with the appropriate volume of distilled or deionised water to each vial (see IFU).
- (4). Store the unused portions at 2-8°C after each use.

## Storage, Stability and Disposal

The expiry date is printed on each vial as well as on the outer box. After opening, any unused material when reconstituted is stable for 7 days when stored at 2-8°C or 28 days when stored at -20°C (see below). Outdated material should be treated and disposed off as a biohazard.

Storage Temperature	Storage	Stability
2 – 8°C	Unopened	Printed on vial
2 – 8°C	Opened	Seven (7) days
-20°C	Opened	Twenty Eight (28) days

# How to order

To place an order please contact your local Fortress Diagnostics Distributor.

AUTHORISED DISTRIBUTOR

## Meridian Healthcare srl

Tel. +39 095 725 68 69 Fax: +39 095 725 44 54

info@meridianhealthcare.it

www.meridianhealthcare.it



When Ordering: Please quote your:  
Name  
Address  
Telephone Number  
Fax number  
Email Address  
Purchase Order Number  
Product Description  
Catalogue Number  
Quantity Required  
Any specific delivery instructions

**Please contact us if you are unsure who your local Distributor is in your country:**

Manufacturer: Fortress Diagnostics Limited,  
Unit 2C, Antrim Technology Park,  
Muckamore, Antrim, N. Ireland,  
BT41 1QS, United Kingdom

By Telephone: +44 (0) 28 9448 7676

By Fax: +44 (0) 28 9446 9933

By Email: info@fortressdiagnostics.com

## Ordering Details

CAT NO	LEVELS	PACK SIZE
BXC0363A	Immunoassay Tri-Level Control Level I	4 x 3ml
BXC0363B	Immunoassay Tri-Level Control Level II	4 x 3ml
BXC0363C	Immunoassay Tri-Level Control Level III	4 x 3ml
BXC0363D	Immunoassay Tri-Level Control Trilevel	3 x 4 x 3ml
BXC0363E	Immunoassay Tri-Level Control Trilevel	3 x 4 x 1ml

# Assigned Values - Fortress ELISA

ASSIGNED VALUES		Level 1	BXC0363A	Level 2	BXC0363B	Level 3	BXC0363C
ANALYTE	Units	Target	Range	Target	Range	Target	Range
17-Alpha-Hydroxyprogesterone	ng/mL	1.1	0.84 - 1.35	5.26	4.04 - 6.47	8.05	6.19 - 9.90
Alpha Fetoprotein (AFP)	ng/mL	16.4	12.6 - 20.2	89.4	68.7 - 110.0	189	145.4 - 232.6
Carcinoembryonic Antigen (CEA)	ng/mL	2.01	1.54 - 2.47	12.6	9.69 - 15.50	19.4	14.9 - 23.8
Cortisol	µg/dL	4.25	3.26 - 5.23	18.4	14.15 - 22.64	27.5	21.1 - 33.8
C-Peptide	ng/mL	1.19	0.91 - 1.46	5.74	4.41 - 7.06	7.82	6.01 - 9.62
Dehydroepiandrosterone-Sulfate (DHEA-Sulfate)	µg/dL	0.81	0.62 - 0.99	2.16	1.66 - 2.65	6.63	5.10 - 8.16
Digoxin	ng/mL	0.63	0.48 - 0.77	1.75	1.34 - 2.15	3.11	2.39 - 3.82
Estradiol, E2	pg/mL	114	87.7 - 140.3	295	226.9 - 363.0	465	357.7 - 572.3
Ferritin	ng/mL	66.2	50.9 - 81.4	114	87.7 - 140.3	287	220.7 - 353.2
Follicle Stimulating Hormone (FSH)	mIU/mL	8.07	6.20 - 9.93	22.5	17.3 - 27.7	41.6	32.0 - 51.2
Human Chorionic Gonadotropin (hCG) (Total Beta)	mIU/mL	8.06	6.20 - 9.92	23.5	18.0 - 28.9	213	163.8 - 262.1
Estriol, Free (Unconjugated)	ng/mL	2.01	1.54 - 2.47	6.04	4.64 - 7.43	11.8	9.07 - 14.52
Human Growth Hormone (hGH)	ng/mL	11.4	8.76 - 14.03	25.6	19.7 - 31.5	70.1	53.9 - 86.2
Immunoglobulin E (IgE)	IU/mL	>400		88.3	67.9 - 108.7	116	89.2 - 142.7
Insulin	µIU/mL	12.9	9.92 - 15.87	51.2	39.3 - 63.0	148	113.8 - 182.1
Luteinizing Hormone (LH)	mIU/mL	1.12	0.86 - 1.37	18.7	14.4 - 23.0	52.3	40.2 - 64.3
Progesterone	ng/mL	0.98	0.75 - 1.20	11.6	8.92 - 14.27	30.4	23.3 - 37.4
Prolactin	ng/mL	6.61	5.08 - 8.13	19.2	14.7 - 23.6	41.8	32.1 - 51.4
Prostate Specific Antigen, Free (FPSA)	ng/mL	0.54	0.41 - 0.66	2.45	1.88 - 3.01	>10.0	
Prostate Specific Antigen, Total (PSA)	ng/mL	0.81	0.62 - 0.99	3.52	2.70 - 4.33	16.3	12.5 - 20.0
T3 Free (FT3)	pg/mL	2.24	1.72 - 2.75	5.01	3.85 - 6.16	7.36	5.66 - 9.05
T3 Total	ng/mL	0.86	0.66 - 1.05	2.04	1.56 - 2.51	2.85	2.19 - 3.50
T3 Uptake / T-Uptake	% Uptake	31.1	23.92 - 38.27	4	3.07 - 4.92	46.3	35.6 - 56.9
T4 Free (FT4)	ng/dL	0.98	0.75 - 1.20	2.13	1.63 - 2.62	3.14	2.41 - 3.86
T4 Total	µg/dL	5.7	4.34 - 7.01	11.4	8.76 - 14.03	16.2	12.5 - 19.9
Testosterone	ng/mL	1.63	1.25 - 2.00	6.75	5.19 - 8.30	>8.00	
Testosterone, Free	pg/mL	0.67	0.51 - 0.82	18.6	14.3 - 22.9	41.7	32.07 - 51.32
Thyroid Stimulating Hormone (TSH)	µIU/mL	0.45	0.34 - 0.55	5.79	4.45 - 7.12	40.1	30.8 - 49.3

# Assigned Values - Monobind ELISA

ASSIGNED VALUES		Level 1	BXC0363A	Level 2	BXC0363B	Level 3	BXC0363C
ANALYTE	Units	Target	Range	Target	Range	Target	Range
17-Alpha-Hydroxyprogesterone	ng/mL	1.12	0.75 – 1.49	5.21	1.86 – 8.56	8.09	4.94 – >10.0
Alpha Fetoprotein (AFP)	ng/mL	16.2	10.8 – 21.5	88.8	59.5 – 118	188	126 – 250
Carcinoembryonic Antigen (CEA)	ng/mL	2.03	1.09 – 2.96	12.7	8.18 – 17.1	19.9	12.6 – 27.3
Cortisol	µg/dL	4.26	2.85 - 5.67	18.0	12.0-23.9	27.3	18.3-36.3
C-Peptide	ng/mL	1.19	0.80 – 1.59	5.79	3.88 – 7.69	7.84	5.25 – >10.0
Dehydroepiandrosterone-Sulfate (DHEA-Sulfate)	µg/dL	0.82	0.55 – 1.09	2.18	1.46 – 2.90	6.6	4.42 – >8.00
Digoxin	ng/mL	0.62	0.41 – 0.82	1.72	1.15 – 2.29	3.12	2.09 – >4.00
Estradiol, E2	pg/mL	111	74.1 – 147	292	196 – 389	469	314 – 624
Ferritin	ng/mL	65.6	43.9 – 87.2	112	75.2 – 149	284	179 – 389
Follicle Stimulating Hormone (FSH)	mIU/mL	8.06	5.40 – 10.7	22.8	15.3 – 30.4	41.1	27.5 – 54.7
Human Chorionic Gonadotropin (hCG) (Total Beta)	mIU/mL	8.02	5.37 – 10.7	23.7	15.9 – 31.5	212	181 – 243
Estriol, Free (Unconjugated)	ng/mL	1.99	1.33 – 2.64	6.08	4.07 – 8.09	11.9	7.96 – 15.8
Human Growth Hormone (hGH)	ng/mL	11.2	7.51 – 14.9	25.6	17.1 – 34.0	69.4	46.5 – 92.3
Immunoglobulin E (IgE)	IU/mL	>400		87.9	58.9 – 117	119	79.4 – 158
Insulin	µIU/mL	12.6	6.53 – 18.7	51.8	32.0 – 71.5	144	96.2 – 191
Luteinizing Hormone (LH)	mIU/mL	1.15	0.760 – 1.55	18.8	11.3 – 26.3	51.2	34.3 – 68.1
Progesterone	ng/mL	0.99	0.670 – 1.32	11.7	7.80 – 15.5	30.2	20.3 – 40.2
Prolactin	ng/mL	6.62	4.44 – 8.81	19.0	12.8 – 25.3	41.4	27.7 – 55.0
Prostate Specific Antigen, Free (FPSA)	ng/mL	0.53	0.36 – 0.71	2.47	1.65 – 3.28	>10.0	
Prostate Specific Antigen, Total (PSA)	ng/mL	0.82	0.550 – 1.09	3.51	2.35 – 4.67	16.7	11.2 – 22.2
T3 Free (FT3)	pg/mL	2.23	1.49 – 2.96	5.02	3.36 – 6.67	7.34	4.92 – 9.77
T3 Total	ng/mL	0.85	0.570 – 1.13	2.0	1.34 – 2.66	2.79	1.87 – 3.71
T3 Uptake / T-Uptake	% Uptake	30.2	20.3 – 40.2	40.1	26.9 – >48.0	46.2	31.0 – >48.0
T4 Free (FT4)	ng/dL	0.97	0.650 – 1.29	2.16	1.45 – 2.87	3.16	2.12 – 4.20
T4 Total	µg/dL	5.6	3.75 – 7.45	11.7	7.85 – 15.6	16.4	11.0 – 21.8
Testosterone	ng/mL	1.65	0.990 – 2.31	6.71	3.96 – 9.46	>8.00	
Testosterone, Free	pg/mL	0.660	0.3320 - 1.00	18.50	11.1 - 25.8	41.5	25.0 - 58.0
Thyroid Stimulating Hormone (TSH)	µIU/mL	0.46	0.30 – 0.63	5.78	3.87 – 7.69	39.4	26.4 – >40.0



# Instruments

		Level 1	BXC0363A	Level 2	BXC0363B	Level 3	BXC0363C
INSTRUMENTS / ANALYTE	Units	Target	Range	Target	Range	Target	Range
<b>ABBOTT ARCHITECT C SYSTEM</b>							
Acetaminophen	µg/mL	7.60	6.08 – 9.12	33.6	26.9 – 40.3	100	80.1 – 120
Amikacin	µg/mL	4.16	3.33 – 4.99	14.3	11.4 – 17.1	27.9	22.3 – 33.5
Carbamazepine	µg/mL	2.95	2.36 – 3.55	8.8	7.06 – 10.6	14.1	11.3 – 17
Digoxin	ng/mL	0.72	0.577 – 0.866	1.8	1.46 – 2.19	3.24	2.59 – 3.89
Gentamicin	µg/mL	2.41	1.93 – 2.9	4.4	3.51 – 5.27	636	5.09 – 7.64
Immunoglobulin A (IgA)	mg/dL	149.00	119 – 179	158.0	127 – 190	150	120 – 180
Immunoglobulin E (IgE)	IU/mL	293.00	234 – 351	62.9	50.3 – 75.5	57.7	46.2 – 69.2
Immunoglobulin G (IgG)	mg/dL	753.00	602 – 903	837.0	670 – 1005	809	647 – 971
Immunoglobulin M (IgM)	mg/dL	63.30	50.6 – 76	79.9	63.9 – 95.9	78.8	63 – 94.6
Iron	µg/dL	114.00	78.8 – 150	84.0	67.2 – 101	90.6	67.9 – 113
Lithium	mmol/L	0.60	0.479 – 0.718	1.3	1.00 – 1.51	1.91	1.53 – 2.29
Phenytoin	µg/mL	6.96	5.57 – 8.35	15.4	12.3 – 18.5	26.7	21.4 – 32.1
Salicylate	mg/dL		<5.00 – 7.04	15.4	12.3 – 18.5	44.8	35.8 – 53.7
Theophylline	µg/mL	4.20	3.36 – 5.04	16.8	13.4 – 20.1	28.7	23 – 34.5
Tobramycin	µg/mL	0.39	0.256 – 0.519	2.9	2.28 – 3.42	5.93	3.91 – 7.94
Valproic Acid	µg/mL	28.80	23 – 34.5	73.1	58.5 – 87.7	97.3	77.8 – 117
Vancomycin	µg/mL	6.49	5.19 – 7.78	19.4	15.5 – 23.3	33.1	26.5 – 39.8
<b>ABBOTT ARCHITECT I SYSTEMS</b>							
AFP	ng/mL	17.90	14.3 – 21.4	105.0	84.4 – 127	202	162 – 243
Carbamazepine (iCarbamazepine)	µg/mL	3.07	2.46 – 3.68	8.4	6.75 – 10.1	13.9	11.1 – >15.0
CEA (CEA, Re-standardization)	ng/mL	2.91	2.13 – 3.7	23.7	18.9 – 28.4	41.9	31.9 – 52
Cortisol	µg/dL	2.63	2.1 – 3.15	16.5	13.2 – 19.8	25.3	20.2 – 30.3
Dehydroepiandrosterone-Sulfate (DHEA-Sulfate) (DHEA-Sulfate)	µg/dL	75.30	60.2 – 90.4	155.0	124 – 186	587	470 – 705
Digoxin (iDigoxin)	ng/mL	0.54	0.356 – 0.722	1.6	1.3 – 1.95	2.96	2.37 – 3.56
Estradiol	pg/mL	97.90	78.3 – 117	195.0	156 – 234	290	232 – 348
Ferritin	ng/mL	63.20	50.6 – 75.9	156.0	125 – 187	371	297 – 445
Folate (II)	ng/mL	3.33	2.66 – 4	8.3	6.62 – 9.93	15.5	12.4 – 18.5
Follicle Stimulating Hormone (FSH)	mIU/mL	6.41	5.13 – 7.7	22.9	18.3 – 27.5	42.0	33.6 – 50.4
Gentamicin (iGentamicin)	µg/mL	2.27	1.81 – 2.72	4.5	3.62 – 5.43	>10.0	
hCG (Total Beta)	mIU/mL	4.91	3.92 – 5.89	19.3	15.5 – 23.2	150	120 – 180
Insulin	µIU/mL	14.80	11.9 – 17.8	59.9	47.9 – 71.9	151	121 – 181
Luteinizing Hormone (LH)	mIU/mL	1.17	0.932 – 1.4	16.0	12.8 – 19.2	52.4	41.9 – 62.8
Phenobarbital (iPhenobarbital)	µg/mL	9.25	6.85 – 11.7	24.0	19.2 – 28.8	51.0	40.8 – 61.2
Phenytoin (iPhenytoin)	µg/mL	6.81	5.45 – 8.17	14.8	11.9 – 17.8	26.1	20.9 – 31.3
Progesterone	ng/mL	0.70	0.562 – 0.843	8.0	6.39 – 9.59	27.7	22.2 – 33.3

# Instruments

		Level 1	BXC0363A	Level 2	BXC0363B	Level 3	BXC0363C
INSTRUMENTS / ANALYTE	Units	Target	Range	Target	Range	Target	Range
<b>ABBOTT ARCHITECT I SYSTEMS (Continued)</b>							
Prolactin	ng/mL	7.56	6.05 – 9.07	24.6	19.7 – 29.6	56.4	45.1 – 67.7
PSA (Free)	ng/mL	0.33	0.264–0.396	1.6	1.27 – 1.9	9.76	7.81 – 11.7
PSA (Total)	ng/mL	0.73	0.565–0.902	2.5	1.78 – 3.3	14.1	10.4 – 17.8
T3 (Free)	pg/mL	2.23	1.79 – 2.68	6.2	4.97 – 7.46	10.8	8.61 – 12.9
T3 (Total)	ng/mL	0.68	0.545 – 0.817	2.0	1.56 – 2.34	2.68	2.15 – 3.22
T3 Uptake/T Uptake	T Uptake	0.89	0.715 – 1.07	0.9	0.723 – 1.08	0.832	0.665–0.998
T4 (Free)	ng/dL	0.88	0.707 – 1.06	2.1	1.66 – 2.5	4.91	3.93 – 5.89
T4 (Total)	µg/dL	4.81	3.84 – 5.77	11.3	9.04 – 13.6	18.4	14.7 – >24.0
Testosterone (2nd Gen)	ng/mL	1.79	1.43 – 2.14	5.6	4.5 – 6.74	7.24	5.79 – 8.69
Theophylline (iTheophylline)	µg/mL	3.88	2.68 – 5.09	15.7	12.6 – 18.9	27.2	21.8 – 32.7
Thyroid Stimulating Hormone (TSH)	µIU/mL	0.43	0.345 – 0.517	4.7	3.76 – 5.64	27.2	21.8 – 32.6
Valproic Acid (iValproic Acid)	µg/mL	30.20	22.3 – 38.0	75.1	60.1 – 90.1	114	91.2 – >150
Vancomycin (iVancomycin)	µg/mL	7.19	5.75 – 8.63	20.2	16.2 – 24.3	34.7	27.7 – 41.6
Vitamin B12	pg/mL	381.00	305 – 457	597.0	478 – 717	714	572 – 857
<b>ABBOTT AxSYM</b>							
Carbamazepine	µg/mL	2.86	2.29 – 3.43	8.3	6.61 – 9.91	13.3	10.6 – 16.0
CEA (3K47)	ng/mL	2.82	2.26 – 3.38	22.2	17.8 – 26.7	41.6	33.3 – 49.9
Phenobarbital	µg/mL	8.90	7.12 – 10.7	23.4	18.7 – 28.1	45.8	36.6 – 55.0
Valproic Acid	µg/mL	33.90	27.1 – 40.7	79.6	63.6 – 95.5	112	89.8 – 135
Vitamin B12	pg/mL	322.00	258 – 387	565.0	452 – 678	688	550 – 826
<b>ALFA WASSERMANN ACE</b>							
Ferritin	ng/mL	51.00	42.0 – 60.0	122.0	109 – 136	263	236 – 290
T4 (Total)	µg/dL	4.50	3.8 – 5.3	10.9	9.90 – 11.9	16.1	14.8 – 17.5
<b>BECKMAN COULTER ACCESS / 2 / 2i</b>							
AFP	ng/mL	19.70	16.5 – 22.8	109.0	89.7 – 128	216	181 – 250
CEA (Enhanced, CEA2)	ng/mL	2.00	1.68 – 2.32	23.1	19.4 – 26.8	28.1	23.6 – 32.6
Cortisol	µg/dL	2.94	2.24 – 3.64	17.9	14.3 – 21.5	30.5	24.4 – 36.6
Dehydroepiandrosterone-Sulfate (DHEA-Sulfate)	µg/dL	58.70	49.3 – 68.1	127.0	106 – 147	460	386 – 534
Digoxin	ng/mL	0.85	0.71 – 0.99	2.0	1.66 – 2.30	3.50	2.82 – 4.18
Estradiol	pg/mL	131.00	99.7 – 163	282.0	214 – 349	525	441 – 609
Estriol (Free) (Unconjugated)	ng/mL	0.99	0.834 – 1.15	3.2	2.67 – 3.69	6.14	5.15 – >6.90
Ferritin	ng/mL	41.70	35.0 – 48.4	110.0	92.7 – 128	246	207 – 285
Folate (Improved)	ng/mL	2.61	2.19 – 3.03	6.7	5.60 – 7.72	11.0	9.23 – 12.8
Folate (Re-standardization, FOLW)	ng/mL	3.24	2.70 – 3.78	8.8	7.23 – 10.4	14.6	12.3 – 17.0
Follicle Stimulating Hormone (FSH) (hFSH)	mIU/mL	7.33	5.81 – 8.85	26.4	22.2 – 30.6	46.3	38.9 – 53.7

# Instruments

		Level 1	BXC0363A	Level 2	BXC0363B	Level 3	BXC0363C
INSTRUMENTS / ANALYTE	Units	Target	Range	Target	Range	Target	Range
<b>BECKMAN COULTER ACCESS / 2 / 2i (Continued)</b>							
hCG (Total Beta)	mIU/mL	4.95	4.15 – 5.75	20.8	17.5 – 24.1	143	117 – 168
Human Chorionic Gonadotropin (hCG) (Total Beta)	mIU/mL	5.40	4.6 – 6.2	22.9	19.3 – 26.5	162	136 – 188
Human Growth Hormone (hGH) (Ultrasensitive)	ng/mL	2.51	2.14 – 2.89	7.2	6.14 – 8.26	12.8	10.8 – 14.7
Immunoglobulin E (IgE) (Total)	IU/mL	405	340 – 470	75.0	63 – 87	69.3	56.9 – 81.6
Insulin (Ultrasensitive)	µIU/mL	14.90	12.5 – 17.3	57.9	48.6 – 67.2	161	135 – 187
Luteinizing Hormone (LH) (hLH)	mIU/mL	1.11	0.91 – 1.31	16.1	13.5 – 18.7	48.1	40.4 – 55.7
Progesterone	ng/mL	0.84	0.6 – 1.08	10.7	9.01 – 12.5	28.6	24 – 33.2
Progesterone (P4DE)	ng/mL	0.52	0.45 – 0.59	8.5	7.82 – 9.18	25.0	23 – 27
Prolactin	ng/mL	5.60	4.7 – 6.5	17.1	14.3 – 19.8	35.5	29.9 – 41.2
PSA (Free) (Hybritech)	ng/mL	0.46	0.38 – 0.54	2.3	1.89 – 2.61	11.5	9.7 – 13.4
PSA (Free) (WHO 96/668)	ng/mL	0.36	0.3 – 0.42	1.8	1.53 – 2.12	9.12	7.66 – 10.6
PSA (Total) (Hybritech)	ng/mL	0.90	0.76 – 1.04	3.3	2.77 – 3.81	17.7	14.9 – 20.6
PSA (Total) (WHO 96/670)	ng/mL	0.76	0.64 – 0.88	2.6	2.15 – 2.97	13.8	11.6 – 16
T3 (Free)	pg/mL	2.30	1.84 – 2.76	5.6	4.43 – 6.67	10.3	8.18 – 12.3
T3 (Total)	ng/mL	0.79	0.67 – 0.91	1.9	1.62 – 2.22	2.74	2.3 – 3.18
T3 Uptake/T Uptake	% Uptake	45.30	38.1 – 52.6	46.5	39 – 53.9	53.6	45 – 62.2
T4 (Free)	ng/dL	0.77	0.65 – 0.89	2.1	1.73 – 2.37	4.37	3.67 – 5.07
T4 (Total)	µg/dL	4.32	3.62 – 5.02	9.9	8.36 – 11.5	17.0	14.3 – 19.7
Testosterone	ng/mL	1.15	0.97 – 1.33	4.7	3.96 – 5.48	6.99	5.87 – 8.11
Thyroid Stimulating Hormone (TSH)	µIU/mL	0.48	0.4 – 0.56	5.4	4.56 – 6.28	32.9	27.7 – 38.2
Vitamin B12	pg/mL	321.00	254 – 388	510.0	428 – 592	678	570 – 787
<b>BECKMAN COULTER AU SYSTEMS</b>							
Carbamazepine	µg/mL	2.76	2.21 – 3.32	7.8	6.2 – 9.3	12.8	10.2 – 15.3
Digoxin (Emit 2000)	ng/mL	0.65	0.5 – 0.8	1.6	1.28 – 1.92	3.00	2.4 – 3.6
Gentamicin (Emit 2000)	µg/mL	2.30	1.84 – 2.76	4.5	3.57 – 5.36	6.33	5.07 – 7.6
Tobramycin (Emit 2000)	µg/mL		<0.6 – 0.8	3.1	2.47 – 3.7	5.98	4.79 – 7.18
Valproic Acid (Emit 2000)	µg/mL	36.50	29.2 – 43.8	83.5	66.8 – 100	113.00	90.5 – 136
<b>BECKMAN COULTER CX SERIES</b>							
Carbamazepine	µg/mL	2.58	2.07 – 3.1	8.2	6.59 – 9.88	12.9	10.3 – 15.5
Gentamicin	µg/mL	2.52	2.02 – 3.03	4.9	3.94 – 5.91	7.63	6.1 – 9.15
Phenobarbital	µg/mL	8.58	6.86 – 10.3	22.4	17.9 – 26.8	42.3	33.8 – 50.7
Phenytoin	µg/mL	6.70	5.36 – 8.04	14.4	11.5 – 17.3	24.8	19.8 – 29.7
Theophylline	µg/mL	3.65	2.92 – 4.38	15.1	12 – 18.1	26.7	21.3 – 32
Tobramycin	µg/mL		<0.5 – 0.888	3.67	2.93 – 4.40	7.23	5.79 – 8.68



# Instruments

		Level 1	BXC0363A	Level 2	BXC0363B	Level 3	BXC0363C
INSTRUMENTS / ANALYTE	Units	Target	Range	Target	Range	Target	Range
<b>BECKMAN COULTER SYNCHRON LX / UniCel DxC SERIES</b>							
Acetaminophen	µg/mL		<10.0 – 12	37.7	30.1 – 45.2	107	85.3 – 128
Carbamazepine	µg/mL	2.58	2.07 – 3.1	8.23	6.59 – 9.88	12.9	10.3 – 15.5
Digoxin	ng/mL	0.63	0.481 – 0.769	1.69	1.35 – 2.02	3.00	2.4 – 3.59
Gentamicin	µg/mL	2.52	2.02 – 3.03	4.93	3.94 – 5.91	7.63	6.1 – 9.15
Iron	µg/dL	116.00	93 – 140	82.0	65.6 – 98.4	79.3	63.4 – 95.2
Lithium (Infinity)	mEq/L	0.52	0.419–0.628	1.21	0.967 – 1.45	1.86	1.48 – 2.23
Phenobarbital	µg/mL	8.58	6.86 – 10.3	22.4	17.9 – 26.8	42.3	33.8 – 50.7
Phenytoin	µg/mL	6.70	5.36 – 8.04	14.4	11.5 – 17.3	24.8	19.8 – 29.7
Salicylate	mg/dL		<4.00 – 4.98	17.3	13.8 – 20.7	46.2	36.9 – 55.4
Theophylline	µg/mL	3.65	2.92 – 4.38	15.1	12.0 – 18.1	26.7	21.3 – 32
Tobramycin	µg/mL		<0.5 – 0.888	3.67	2.93 – 4.4	7.23	5.79 – 8.68
Valproic Acid	µg/mL	15.30	11 – 19.6	80.0	64.0 – 96.0	77.3	61.9 – 92.8
Vancomycin	µg/mL	6.52	5.21 – 7.82	20.6	16.5 – 24.7	37.7	30.2–>40.0
<b>BECKMAN COULTER UniCel Dxl</b>							
AFP	ng/mL	16.80	14 – 19.6	92.3	77.6 – 107	193	162 – 224
CEA (Enhanced, CEA2)	ng/mL	1.88	1.58 – 2.18	22.3	18.7 – 25.8	26.5	22.3 – 30.8
Cortisol	µg/dL	3.08	2.34 – 3.82	17.4	14.0 – 20.9	30.2	24.2 – 36.3
Dehydroepiandrosterone-Sulfate (DHEA-Sulfate)	µg/dL	56.70	45.7 – 67.6	118.0	94.2 – 141	438	362 – 515
Digoxin	ng/mL	0.85	0.71 – 0.99	2.0	1.66 – 2.3	3.50	2.82 – 4.18
Estradiol (Re-standardization)	pg/mL	128.00	97.2 – 159	265.0	201 – 329	530	441 – 618
Estriol (Free) (Unconjugated)	ng/mL	0.99	0.834 – 1.15	3.2	2.67 – 3.69	6.14	5.15 – >6.90
Ferritin	ng/mL	41.50	34.3 – 48.7	108.0	88.6 – 127	245	206 – 284
Folate	ng/mL	2.46	2.06 – 2.86	6.7	5.63 – 7.79	10.9	9.15 – 12.6
Folate (Re-standardization, FOLW)	ng/mL	3.26	2.74 – 3.78	9.1	7.62 – 10.5	14.7	12.3 – 17
Follicle Stimulating Hormone (FSH) (hFSH)	mIU/mL	7.33	5.81 – 8.85	26.4	22.2 – 30.6	46.3	38.9 – 53.7
hCG (Total Beta)	mIU/mL	4.78	4.02 – 5.54	20.7	16.7 – 24.6	140	117 – 162
Human Chorionic Gonadotropin (hCG) (Total Beta) (5th IS)	mIU/mL	5.40	4.6 – 6.2	22.9	19.3 – 26.5	162	136 – 188
Human Growth Hormone (hGH) (Ultrasensitive)	ng/mL	2.34	1.99 – 2.69	6.6	5.52 – 7.67	12.2	9.74 – 14.6
Immunoglobulin E (IgE) (Total)	IU/mL	392	327 – 457	73.1	61.4 – 84.8	66.6	56.1 – 77.1
Insulin (Ultrasensitive)	µIU/mL	14.5	12.2 – 16.8	58.3	49.0 - 67.6	155	130 – 179
Luteinizing Hormone (LH) (hLH)	mIU/mL	1.11	0.91 – 1.31	16.1	13.5 – 18.7	48.1	40.4 – 55.7
Progesterone	ng/mL	0.98	0.5 – 1.46	11.7	8.84 – 14.6	30.1	23.9 – 36.4
Progesterone (P4DE)	ng/mL	0.61	0.46 – 0.76	9.4	8.21 – 10.5	26.5	23.7 – 29.2
Prolactin	ng/mL	5.09	4.27 – 5.91	16.6	14.0 – 19.3	35.3	29.6 – 41
PSA (Free) (Hybritech)	ng/mL	0.43	0.37 – 0.49	2.2	1.51 – 2.79	11.3	9.47 – 13.1
PSA (Free) (WHO 96/668)	ng/mL	0.34	0.29 – 0.39	1.74	1.46 – 2.02	8.90	7.48 – 10.3

# Instruments

		Level 1	BXC0363A	Level 2	BXC0363B	Level 3	BXC0363C
INSTRUMENTS / ANALYTE	Units	Target	Range	Target	Range	Target	Range
<b>BECKMAN COULTER UniCel DxI (Continued)</b>							
PSA (Total) (Hybritech)	ng/mL	0.90	0.76 – 1.04	3.26	2.74 – 3.78	17.2	14.5 – 20
PSA (Total) (WHO 96/670)	ng/mL	0.76	0.64 – 0.88	2.54	2.13 – 2.95	13.4	11.3 – 15.6
T3 (Free)	pg/mL	2.23	1.79 – 2.67	4.97	3.97 – 5.97	9.05	7.23 – 10.9
T3 (Total)	ng/mL	0.83	0.69 – 0.97	2.06	1.72 – 2.4	2.87	2.41 – 3.33
T3 Uptake/T Uptake (%)	% Uptake	46.20	38.8 – 53.6	46.6	39.2 – 54.1	52.2	43.9 – 60.5
T4 (Free) (Modified)	ng/dL	0.77	0.65 – 0.89	2.03	1.71 – 2.35	4.85	4.07 – 5.63
T4 (Total)	µg/dL	4.10	3.44 – 4.76	9.68	8.14 – 11.2	16.8	14.1 – 19.5
Testosterone	ng/mL	1.16	0.98 – 1.34	4.32	3.62 – 5.02	6.41	5.37 – 7.45
Thyroid Stimulating Hormone (TSH) (hTSH, HYPERsensitive)	µIU/mL	0.46	0.38 – 0.54	5.23	4.39 – 6.07	32.1	26.9 – 37.2
Vitamin B12	pg/mL	280	235 – 324	451.0	379 – 524	602	505 – 698
<b>BIOMÉRIEUX VIDAS</b>							
AFP	ng/mL	20.00	14.6 – 25.4	107.0	80.7 – 134	213	172 – 254
CEA	ng/mL	1.40	<0.500 – 3.4	12.2	9 – 15.4	11.6	8.5 – 14.7
Digoxin	ng/mL	0.59	0.38 – 0.8	1.7	1.3 – 2.1	3.20	2.6 – 3.8
Estradiol (II)	pg/mL	122.00	88.0 – 156	322.0	252 – 392	640	512 – 768
Ferritin	ng/mL	53.00	33.0 – 73.0	127.0	96 – 158	308	235 – 381
Follicle Stimulating Hormone (FSH)	mIU/mL	6.80	5.5 – 8.1	28.0	24 – 32	65.0	55 – 75
hCG	mIU/mL	7.40	4.4 – 10.4	38.0	29 – 47	285	226 – 344
Immunoglobulin E (IgE) (Total)	IU/mL	388	292 – 484	65.0	31 – 99	62.0	28 – 96
Luteinizing Hormone (LH)	mIU/mL	1.50	1.00 – 2.00	14.5	12.3 – 16.7	54.0	46 – 62
Progesterone (Revised)	ng/mL	1.06	0.52 – 1.6	13.5	10.7 – 16.4	35.0	28 – 42
Prolactin	ng/mL	5.00	3.00 – 7.00	19.0	15 – 23	34.0	29 – 39
PSA (Total)	ng/mL	0.97	0.55 – 1.39	3.2	2.5 – 3.9	15.4	12.5 – 18.3
T3 (Free)	pg/mL	1.95	1.36 – 2.53	6.6	5.13 – 8.12	11.8	9.16 – 14.5
T3 (Total)	ng/mL	0.84	0.584 – 1.1	2.3	1.88 – 2.79	3.31	2.66 – 3.96
T4 (Free)	pg/mL	5.89	3.95 – 7.83	15.5	11.6 – 19.4	32.6	25.6 – 39.5
T4 (Total)	µg/dL	4.96	3.8 – 6.12	10.2	8.14 – 12.2	17.4	14.1 – 20.6
Testosterone	ng/mL	1.44	0.97 – 1.91	7.6	6 – 9.2	9.40	7.4 – 11.4
Thyroid Stimulating Hormone (TSH)	µIU/mL	0.50	0.3 – 0.7	6.7	5.3 – 8.1	36.0	29 – 43

# Instruments

		Level 1	BXC0363A	Level 2	BXC0363B	Level 3	BXC0363C
INSTRUMENTS / ANALYTE	Units	Target	Range	Target	Range	Target	Range
<b>DIASORIN LIAISON</b>							
Aldosterone	ng/dL	10.50	6.82 – 14.1	24.4	16.5 – 32.3	49.7	33.1 – 66.2
Estradiol	pg/mL	122.00	85.1 – 158	240.0	168 – 311	565	396 – 735
Estradiol (II Gen)	pg/mL	97.70	68.4 – 127	173.0	121 – 225	284	198 – 369
Progesterone	ng/mL	<0.4		8.2	5.3 – 11.2	20.0	12.8 – 27.1
PSA (Free)	ng/mL	0.27	0.19 – 0.35	1.5	1.29 – 1.75	7.31	6.21 – 8.41
Testosterone	ng/mL	0.78	0.5 – 1.06	3.8	2.33 – 5.35	4.72	3.3 – 6.13
<b>DiaSorin LIAISON XL</b>							
Estradiol (II Gen)	pg/mL	98.20	68.8 – 128	175.0	123 – 228	286	200 – 372
Testosterone	ng/mL	0.65	0.42 – 0.89	3.1	2.2 – 4.09	4.08	2.85 – 5.3
<b>Fujirebio LUMIPULSE G1200</b>							
Thyroid Stimulating Hormone (TSH) (TSHIII)	µIU/mL	0.41	0.33 – 0.494	4.6	3.69 – 5.53	26.8	21.4 – 32.1
<b>IDS-iSYS</b>							
Human Growth Hormone (hGH) (IS-3700)	ng/mL	2.92	2.13 – 3.71	8.2	6.23 – 10.2	14.1	11.1 – 17
<b>ORTHO VITROS SERIES / VITROS Eci (MICROWELL)</b>							
AFP	ng/mL	18.10	14.5 – 21.7	106.0	82.2 – 129	193	151 – 235
CEA (CEA)	ng/mL	2.22	1.68 – 2.76	20.8	15.8 – 25.8	34.9	26.4 – 43.4
Cortisol (Cort)	µg/dL	2.34	1.62 – 3.07	16.1	12.5 – 19.7	26.3	20.4 – 32.2
Estradiol (E2)	pg/mL	86.90	33.5 – 140	273.0	172 – 374	583	368 – 798
Ferritin (Ferr)	ng/mL	43.60	32 – 55.2	96.9	71 – 123	215	156 – 274
Folate	ng/mL	2.22	1.29 – 3.15	7.3	4.88 – 9.74	13.5	8.8 – 18.2
Follicle Stimulating Hormone (FSH)	mIU/mL	4.38	3.29 – 5.47	19.1	15.1 – 23.1	39.7	31.1 – 48.3
hCG (Total Beta II)	mIU/mL	8.03	5.52 – 10.5	39.0	29.2 – 48.8	302	228 – 376
Luteinizing Hormone (LH)	mIU/mL	1.06	0.63 – 1.49	17.1	12.2 – 22	49.9	35.5 – 64.3
Progesterone (Prog)	ng/mL	0.65	0.371 – 0.925	9.4	70.1 – 11.9	24.4	18.7 – 30
Prolactin (Prol)	ng/mL	7.14	4.93 – 9.34	17.0	12.6 – 21.5	31.6	23.4 – 39.8
PSA (Total) (PSA)	ng/mL	0.70	0.508 – 0.89	2.2	1.59 – 2.77	9.90	7.61 – 12.2
T3 (Free) (FT3 II)	pg/mL	4.27	3.19 – 5.35	12.7	10.3 – 15.1	>22.7	
T3 (Free) (FT3)	pg/mL	4.51	3.38 – 5.65	14.7	11.9 – 17.5	>22.7	
T3 (Total) (TT3)	ng/mL	0.84	0.623 – 1.06	2.1	1.72 – 2.47	3	2.77 – 3.92
T3 Uptake/T Uptake (T3U)	% Uptake	41.10	34.1 – 48.7	48.6	40.0 – 57.2	>65.0	
T4 (Free) (FT4)	ng/dL	1.28	0.977 – 1.58	4.7	3.76 – 5.68	>6.98	
T4 (Total) (TT4)	µg/dL	4.42	3.58 – 5.26	10.0	8.22 – 11.8	15	12.6 – 17.8
Testosterone (Testo)	ng/dL	115.00	72.9 – 157	585.0	418 – 752	1075	769 – 1380
Thyroid Stimulating Hormone (TSH)	µIU/mL	0.37	0.259–0.475	5.8	4.25 – 7.29	34	25.3 – 43.5
Vitamin B12 (B12)	pg/mL	352.00	216 – 488	558.0	342 – 774	693	425 – 961

# Instruments

		Level 1	BXC0363A	Level 2	BXC0363B	Level 3	BXC0363C
INSTRUMENTS / ANALYTE	Units	Target	Range	Target	Range	Target	Range
<b>ORTHO VITROS SERIES / VITROS FUSION (DRY, MICROSLIDE)</b>							
Acetaminophen (ACET)	µg/mL	<10.0		39.7	31.8 – 47.6	128	103 – 154
Carbamazepine (CRBM)	µg/mL	<3.00		7.1	5.70 – 8.55	10.3	8.23 – 12.3
Digoxin (DGXN)	ng/mL	0.78	0.625–0.937	1.8	1.47 – 2.21	3.08	2.46 – 3.69
Iron	µg/dL	116.00	92.8 – 139	81.0	64.8 – 97.2	76.5	61.2 – 91.8
Lithium (Li)	mmol/L	0.87	0.698 – 1.05	1.6	1.28 – 1.92	2.44	1.95 – 2.93
Phenobarbital (PHRB)	µg/mL	9.73	7.78 – 11.7	27.9	22.3 – 33.5	53.2	42.6 – 63.9
Phenytoin (PHYT)	µg/mL	6.43	5.14 – 7.71	13.8	11.1 – 16.6	22.9	18.3 – 27.4
Salicylate (SALI)	mg/dL	4.84	3.87 – 5.8	17.5	14.0 – 21.1	>40.0	
Theophylline (THEO)	µg/mL	3.56	2.85 – 4.28	20.1	16.1 – 24.1	35.9	28.7 – >40.0
<b>ORTHO VITROS SERIES / VITROS FUSION (WET, MICROTIP)</b>							
Gentamicin (GENT)	µg/mL	2.37	1.9 – 2.84	4.3	3.47 – 5.2	6.40	5.12 – 7.68
Valproic Acid (VALP)	µg/mL	31.60	25.3 – 38	79.7	63.7 – 95.6	113	90.4 – 136
Vancomycin (VANC)	µg/mL	6.18	<5.00 – 7.41	18.3	14.6 – 21.9	31.8	25.4 – 38.2
<b>ROCHE / HITACHI COBAS C SYSTEMS</b>							
Acetaminophen	µg/mL	<15.0		30.0	24.0 – 36	95.4	76.3 – 114
Amikacin	µg/mL	4.27	3.41 – 5.12	13.7	11.0 – 16.4	27.7	22.1 – 33.2
Carbamazepine	µg/mL	2.49	1.59 – 3.39	7.9	6.32 – 9.47	13.0	10.4 – 15.6
Digoxin	ng/mL	0.68	0.544 – 0.816	1.7	1.36 – 2.03	3.07	2.46 – 3.68
Ferritin (Gen. 4)	ng/mL	62.70	50.2 – 75.2	146.0	117 – 175	314	251 – 377
Gentamicin (QMS)	µg/mL	2.01	1.6 – 2.41	3.8	3.08 – 4.61	5.90	4.72 – 7.09
Iron (Gen. 2)	µg/dL	118.00	94.2 – 141	84.5	67.6 – 101	81.3	65 – 97.5
Lithium	mEq/L	0.57	0.457 – 0.685	1.2	0.974 – 1.46	1.88	1.5 – 2.25
Phenobarbital	µg/mL	8.36	6.69 – 10	22.7	18.2 – 27.3	44.9	35.9 – 53.8
Phenytoin	µg/mL	7.15	5.72 – 8.58	15.0	12.0 – 18.0	25.5	20.4 – 30.6
Salicylate	mg/dL	4.21	3.37 – 5.05	16.2	12.9 – 19.4	47.1	37.7 – 56.6
Theophylline	µg/mL	3.95	3.16 – 4.74	15.8	12.6 – 18.9	26.9	21.5 – 32.2
Tobramycin	µg/mL	0.74	0.592–0.888	3.4	2.70 – 4.05	6.13	4.91 – 7.36
Valproic Acid	µg/mL	34.60	27.7 – 41.5	82.5	66.0 – 99.0	110	87.6 – 131
Vancomycin	µg/mL	6.85	5.48 – 8.22	21.3	17.0 – 25.5	36.9	29.5 – 44.3

# Instruments

		Level 1	BXC0363A	Level 2	BXC0363B	Level 3	BXC0363C
INSTRUMENTS / ANALYTE	Units	Target	Range	Target	Range	Target	Range
<b>ROCHE COBAS INTEGRA</b>							
Acetaminophen	µg/mL	<15.0		32.9	26.3 – 39.5	92.8	74.2 – 111
Amikacin	µg/mL	5.17	4.13 – 6.2	14.1	11.3 – 16.9	26.5	21.2 – 31.8
Carbamazepine	µg/mL	2.83	2.26 – 3.39	8.3	6.64 – 9.96	13.7	11 – 16.5
Digoxin	ng/mL	0.72	0.577–0.866	1.6	1.30 – 1.95	2.99	2.39 – 3.59
Gentamicin	µg/mL	2.51	2.00 – 3.01	4.4	3.52 – 5.28	5.95	4.76 – 7.14
Immunoglobulin A (IgA)	mg/dL	155	124 – 186	169.0	135 – 203	156	124 – 187
Immunoglobulin G (IgG)	mg/dL	766	613 – 919	827.0	661 – 992	798	638 – 957
Immunoglobulin M (IgM)	mg/dL	65.0	52.0 – 78.0	81.5	65.2 – 97.8	79.7	63.7 – 95.6
Phenobarbital	µg/mL	9.26	7.41 – 11.1	24.1	19.3 – 28.9	47.5	38 – 56.9
Phenytoin	µg/mL	6.63	5.31 – 7.96	14.4	11.5 – 17.3	24.7	19.7 – 29.6
Salicylate	mg/dL	3.67	2.93 – 4.4	15.1	12.1 – 18.1	42.9	34.3 – 51.4
Theophylline	µg/mL	4.32	3.45 – 5.18	16.6	13.3 – 19.9	28.4	22.7 – 34
Tobramycin	µg/mL	0.33	0.267–0.401	2.9	2.35 – 3.53	5.46	4.37 – 6.56
Valproic Acid	µg/mL	32.30	25.9 – 38.8	78.0	62.4 – 93.7	103	82.3 – 123
Vancomycin	µg/mL	8.27	6.61 – 9.92	23.3	18.7 – 28	39.6	31.7 – 47.5
<b>ROCHE ELECSYS / E 170 / COBAS e SYSTEMS</b>							
ACTH	pg/mL	8.16	5.71 – 10.6	28.5	20 – 37.1	129	90.4 – 168
AFP (04481798)	ng/mL	19.30	13.5 – 25.1	107.0	75.2 – 140	222	155 – 288
CEA	ng/mL	2.54	1.93 – 3.15	19.3	15.2 – 23.3	33.7	26.6 – 40.8
Cortisol	µg/dL	2.71	1.89 – 3.52	21.1	14.7 – 27.4	33.2	23.2 – 43.1
C-Peptide	ng/mL	1.28	0.980 – 1.59	5.6	4.24 – 6.91	7.87	5.98 – 9.76
Dehydroepiandrosterone-Sulfate (DHEA-Sulfate) (DHEA-Sulfate)	µg/dL	89.10	67.7 – 110	170.0	129 – 211	654	497 – 810
Digoxin	ng/mL	0.77	0.584–0.954	2.0	1.54 – 2.51	3.88	2.95 – 4.81
Estradiol (II)	pg/mL	116.00	81.0 – 150	234.0	164 – 304	404	282 – 525
Ferritin	ng/mL	64.70	49.2 – 80.3	150.0	114 – 186	329	250 – 408
Folate (III) (E 170 / e601)	ng/mL	3.03	1.67 – 4.39	7.1	3.93 – 10.4	10.3	6.7 – 13.9
Folate (III) (Elecsys 2010 / e411)	ng/mL	3.59	1.97 – 5.21	8.2	4.5 – 11.9	11.1	7.22 – 15
Follicle Stimulating Hormone (FSH)	mIU/mL	6.17	4.32 – 8.02	24.9	17.4 – 32.4	51.9	36.3 – 67.4
hCG (+ Beta)	mIU/mL	4.56	3.06 – 6.07	22.0	14.8 – 29.3	183	122 – 243
hCG (STAT II)	mIU/mL	5.70	3.82 – 7.58	26.6	17.8 – 35.4	220	147 – 292
Human Growth Hormone (hGH)	ng/mL	2.31	1.50 – 3.12	6.1	4.59 – 7.65	9.58	7.18 – 12
Immunoglobulin E (IgE) (II)	ng/mL	1012	800 – 1224	203.0	160 – 245	184	145 – 223
Insulin	µIU/mL	17.00	12.9 – 21.1	70.6	53.7 – 87.6	188	143 – 233
Luteinizing Hormone (LH)	mIU/mL	1.68	1.28 – 2.08	19.9	15.1 – 24.6	61.7	46.9 – 76.5
Progesterone (II)	ng/mL	0.43	0.238–0.626	9.9	6.31 – 13.4	28.6	18.3 – 39
Prolactin (II)	ng/mL	7.28	5.54 – 9.01	22.7	17.3 – 28.2	50.7	38.5 – 62.9



# Instruments

		Level 1	BXC0363A	Level 2	BXC0363B	Level 3	BXC0363C
INSTRUMENTS / ANALYTE	Units	Target	Range	Target	Range	Target	Range
<b>ROCHE ELECSYS / E 170 / COBAS e SYSTEMS (Continued)</b>							
PSA (Free)	ng/mL	0.32	0.239 – 0.391	1.6	1.26 – 1.93	8.63	6.82 – 10.4
PSA (Total)	ng/mL	0.83	0.628 – 1.02	3.0	2.26 – 3.68	14.9	11.4 – 18.5
T3 (Free)	pg/mL	2.58	1.81 – 3.36	7.8	5.91 – 9.61	14.2	10.8 – 17.6
T3 (Free) (III)	pg/mL	2.54	1.78 – 3.3	7.8	5.92 – 9.65	14.0	10.6 – 17.4
T3 Total	ng/mL	0.90	0.634 – 1.18	2.2	1.66 – 2.71	3.49	2.66 – 4.33
T3 Uptake / T Uptake	TBI	0.96	0.758 – 1.16	0.7	0.555–0.851	<0.200	
T4 (Free) (II)	ng/dL	0.96	0.760 – 1.16	2.6	2.07 – 3.17	>7.75	
T4 Free	ng/dL	0.93	0.736 – 1.13	2.4	1.9 – 2.91	>7.75	
T4 Total	µg/dL	4.59	3.49 – 5.69	10.0	7.61 – 12.4	14.7	11.1 – 18.1
Testosterone (II)	ng/mL	1.82	0.726 – 2.91	5.9	4.14 – 7.69	8.29	5.8 – 10.8
Thyroglobulin (Tg)	ng/mL	6.64	5.05 – 8.23	7.0	5.32 – 8.67	7.74	5.88 – 9.6
Thyroid Stimulating Hormone (TSH)	µIU/mL	0.61	0.460 – 0.75	6.3	4.99 – 7.65	38.3	30.2 – 46.3
Vitamin B12 (II) (E 170 / e601)	pg/mL	404	246 – 561	624.0	437 – 811	748	456 – 1039
Vitamin B12 (II) (Elecsys 2010 / e411)	pg/mL	390	238 – 542	606.0	424 – 788	720	439 – 1001
<b>ROCHE HITACHI / MODULAR</b>							
Acetaminophen	µg/mL	<15.0		33.5	26.8 – 40.2	100	80.2 – 120
Carbamazepine (II, CEDIA)	µg/mL	2.77	2.14 – 3.41	8.55	6.84 – 10.3	13.7	10.9 – 16.4
Digoxin (Tina Quant)	ng/mL	0.65	0.521 – 0.782	1.59	1.27 – 1.9	2.88	2.3 – 3.46
Iron	µg/dL	114.00	91.1 – 137	83.3	66.7 – 100	81.2	64.9 – 97.4
Phenobarbital (ONLINE TDM)	µg/mL	8.96	7.16 – 10.7	23.6	18.9 – 28.3	46.3	37.1 – 55.6
Phenytoin	µg/mL	6.82	5.46 – 8.19	14.5	11.6 – 17.4	25.4	20.4 – 30.5
Salicylate	mg/dL	4.12	3.30 – 4.95	16.1	12.9 – 19.4	45.5	36.4 – 54.6
Theophylline (ONLINE TDM)	µg/mL	3.73	2.98 – 4.47	15.3	12.2 – 18.3	27.2	21.7 – 32.6
Tobramycin (ONLINE TDM)	µg/mL	0.74	0.592–0.888	3.4	2.7 – 4.05	6.13	4.91 – 7.36
Valproic Acid (ONLINE TDM)	µg/mL	34.50	27.6 – 41.4	78.7	63 – 94.5	111	88.7 – 133
<b>SIEMENS ADVIA CENTAUR / CENTAUR XP</b>							
AFP	ng/mL	20.80	16.6– 24.9	115.0	91.7 – 137	235	188 – 283
Carbamazepine (CARB)	µg/mL	2.86	2.29 – 3.44	8.7	6.95 – 10.4	14.5	11.6 – 17.4
CEA	ng/mL	1.78	1.42 – 2.13	23.9	19.1 – 28.6	26.3	21 – 31.5
Cortisol (COR)	µg/dL	3.15	2.52 – 3.78	21.2	17 – 25.4	38.9	31.1 – 46.7
C-Peptide (CpS)	ng/mL	1.03	0.721 – 1.34	4.5	3.39 – 5.65	7.15	5.36 – 8.94
Dehydroepiandrosterone-Sulfate (DHEA-Sulfate) (DHEAS)	µg/dL	55.70	36.2 – 75.2	124.0	80.6 – 167	323	210 – 436
Digoxin (DIG) (Revised)	ng/mL	0.84	0.670 – 1.01	2.1	1.68 – 2.52	3.35	2.68 – 4.02
Estradiol (eE2)	pg/mL	109.00	87.2 – 131	251.0	201 – 302	500	400 – 600
Ferritin (FER)	ng/mL	57.20	45.7 – 68.6	143.0	115 – 172	340	272 – 408
Folate (FOL)	ng/mL	1.89	15 – 2.27	7.32	5.86 – 8.78	9.74	7.79 – 11.7

# Instruments

		Level 1	BXC0363A	Level 2	BXC0363B	Level 3	BXC0363C
INSTRUMENTS / ANALYTE	Units	Target	Range	Target	Range	Target	Range
<b>SIEMENS ADVIA CENTAUR / CENTAUR XP (Continued)</b>							
Follicle Stimulating Hormone (FSH)	mIU/mL	6.79	5.23 – 8.35	28.1	21.1 – 35.1	72.6	56.8 – 88.8
Gentamicin (GENT)	µg/mL	2.60	2.08 – 3.12	4.5	3.62 – 5.43	6.90	5.52 – 8.28
hCG (Total, ThCG) (Revised)	mIU/mL	7.69	6.15 – 9.23	25.9	20.7 – 31.1	172	138 – 206
Immunoglobulin E (IgE)	IU/mL	367.00	293 – 440	70.8	56.7 – 85	63.0	50.4 – 75.6
Insulin (IRI)	µIU/mL	21.10	16.9 – 25.3	88.5	70.8 – 106	228	183 – 274
Luteinizing Hormone (LH)	mIU/mL	1.36	1.09 – 1.63	18.9	15.2 – 22.7	60.0	48 – 72.1
Phenobarbital (PHNB)	µg/mL	9.99	7.99 – 12.0	25.5	20.4 – 30.6	52.2	41.8 – 62.7
Phenytoin (PHTN)	µg/mL	8.53	6.82 – 10.2	18.5	14.8 – 22.2	34.1	27.3 – >40.0
Progesterone (PRGE)	ng/mL	0.96	0.740 – 1.18	8.2	6.56 – 9.85	22.9	18.3 – 27.5
Prolactin (PRL)	ng/mL	5.21	4.17 – 6.25	15.6	12.5 – 18.7	34.1	27.3 – 41
PSA (Total) (PSA)	ng/mL	0.73	0.587–0.881	2.6	2.09 – 3.14	13.6	10.9 – 16.3
T3 (Free) (FT3)	pg/mL	2.68	2.15 – 3.22	6.5	5.21 – 7.82	9.87	7.9 – 11.8
T3 (Total) (T3) (Revised)	ng/mL	0.72	0.576–0.864	2.6	2.06 – 3.09	4.10	3.06 – 4.58
T3 Uptake/T Uptake (TUp, %)	% Uptake	38.60	30.9 – 46.3	40.8	32.6 – 49	49.3	39.4 – >52.2
T3 Uptake/T Uptake (TUp, Unit)	TUp Unit	1.34	1.05 – 1.63	1.5	1.19 – 1.85	1.97	1.54 – 2.4
T4 (Free) (FT4)	ng/dL	0.70	0.563–0.845	1.8	1.47 – 2.2	4.10	3.28 – 4.92
T4 (Total) (T4) (Revised)	µg/dL	4.32	3.46 – 5.18	11.7	9.36 – 14	15.1	12.1 – 18.1
Testosterone (TSTO)	ng/dL	126.00	101 – 151	435.0	348 – 522	769	615 – 923
Theophylline (THEO2)	µg/mL	3.88	3.11 – 4.66	16.7	13.3 – 20	24.7	19.7 – 29.6
Thyroid Stimulating Hormone (TSH)	µIU/mL	0.62	0.499–0.749	6.9	5.5 – 8.25	39.4	31.5 – 47.3
Thyroid Stimulating Hormone (TSH) (TSH3-UL)	µIU/mL	0.47	0.372–0.558	5.4	4.33 – 6.5	31.3	25 – 37.6
Tobramycin (TOBR)	µg/mL	0.53	0.424–0.636	3.7	2.99 – 4.48	6.61	5.29 – 7.94
Valproic Acid (VALP)	µg/mL	37.50	30.0 – 45.0	85.9	68.8 – 103	111	88.7 – 133
Vancomycin (VANC)	µg/mL	5.41	4.33 – 6.49	16.3	13.1 – 19.6	28.2	22.5 – 33.8
Vitamin B12 (VB12) (Revised)	pg/mL	340	272 – 408	566.0	453 – 679	685	548 – 822
<b>SIEMENS ADVIA CENTAUR CP</b>							
AFP	ng/mL	23.30	18.3 – 28.2	128.0	101 – 154	296	234 – 359
Carbamazepine (CARB)	µg/mL	2.47	1.78 – 3.16	11.9	8.33 – 15.5	13.3	8.25 – >18.0
CEA	ng/mL	1.82	1.45 – 2.18	20.7	16.5 – 24.8	24.4	19.5 – 29.3
Cortisol (COR)	µg/dL	2.97	1.96 – 3.98	18.1	12.5 – 23.7	30.8	21.3 – 40.3
C-Peptide (CpS)	ng/mL	1.28	0.896 – 1.66	4.8	3.59 – 5.99	6.88	5.16 – 8.6
Dehydroepiandrosterone-Sulfate (DHEA-Sulfate) (DHEAS)	µg/dL	62.90	40.9 – 84.9	120.0	78 – 162	393	256 – 531
Digoxin (DIG)	ng/mL	0.81	0.605 – 1.01	2.1	1.62 – 2.6	3.51	2.74 – 4.28
Estradiol (eE2)	pg/mL	112.00	71.0 – 153	265.0	184 – 346	543	372 – 714
Ferritin	ng/mL	54.30	40.7 – 67.9	148.0	111 – 185	363	276 – 450
Folate (FOL)	ng/mL	2.58	2.07 – 3.1	9.7	7.77 – 11.7	14.0	11.2 – 16.8

# Instruments

		Level 1	BXC0363A	Level 2	BXC0363B	Level 3	BXC0363C
INSTRUMENTS / ANALYTE	Units	Target	Range	Target	Range	Target	Range
<b>SIEMENS ADVIA CENTAUR CP (Continued)</b>							
Follicle Stimulating Hormone (FSH)	mIU/mL	5.15	3.97 – 6.33	22.3	16.7 – 27.9	62.1	48.4 – 75.8
Gentamicin (GENT)	µg/mL	2.44	1.76 – 3.12	4.6	3.47 – 5.65	7.07	5.37 – 8.77
hCG (thCG)	mIU/mL	7.04	4.15 – 9.93	24.5	17.4 – 31.6	161	129 – 193
Immunoglobulin E (IgE) (tIGE)	IU/mL	442	265 – 619	70.3	42.2 – 98.2	68.1	41.1 – 95.1
Insulin (IRI)	µIU/mL	19.70	15.2 – 24.2	78.7	60.6 – 96.8	229	176 – 282
Luteinizing Hormone (LH)	mIU/mL	1.50	1.13 – 1.88	19.8	15.2 – 24.4	60.2	46.4 – 74
Phenobarbital (PHNB)	µg/mL	8.67	6.07 – 11.3	21.4	15.4 – 27.4	46.3	33.8 – 58.8
Phenytoin (PHTN)	µg/mL	8.92	6.69 – 11.2	19.0	14.8 – 23.2	34.1	26.6 – >40.0
Progesterone (PRGE)	ng/mL	1.14	0.628 – 1.65	9.1	6.4 – 11.9	25.7	18.2 – 33.2
Prolactin (PRL)	ng/mL	5.09	3.56 – 6.62	16.4	12.8 – 20	36.2	27.2 – 45.3
PSA (Total) (PSA)	ng/mL	0.74	0.557–0.929	2.7	2.08 – 3.26	13.9	10.8 – 17
T3 (Free) (FT3)	pg/mL	2.61	1.57 – 3.65	6.4	3.83 – 8.95	9.31	5.59 – 13
T3 (Total) (T3)	ng/mL	0.82	0.613 – 1.02	2.6	2.08 – 3.18	4.04	3.23 – 4.85
T3 Uptake/T Uptake (Tup, Unit)	T Uptake Unit	1.40	1.09 – 1.71	1.5	1.19 – 1.87	2.09	1.63 – 2.55
T4 (Free) (FT4)	ng/dL	0.80	0.596–0.994	2.1	1.67 – 2.61	4.65	3.63 – 5.67
T4 (Total) (T4)	µg/dL	4.80	3.36 – 6.24	12.4	8.06 – 16.7	16.9	11.8 – 22
Testosterone (TSTO)	ng/dL	130.00	104 – 156	443.0	355 – 532	744	595 – 892
Theophylline (THEO2)	µg/mL	4.43	3.10 – 5.76	17.1	13.7 – 20.5	26.3	21 – 31.6
Thyroid Stimulating Hormone (TSH)	µIU/mL	0.617	0.481 – 0.753	7.2	5.61 – 8.77	39.0	30.4 – 47.6
Thyroid Stimulating Hormone (TSH) (TSH3-UL)	µIU/mL	0.49	0.385–0.603	5.6	4.39 – 6.87	34.3	26.8 – 41.9
Tobramycin (TOBR)	µg/mL	0.41	0.292 – 0.52	3.6	2.79 – 4.37	6.57	5.12 – 8.02
Valproic Acid (VALP)	µg/mL	34.70	24.1 – 44.7	79.4	63.5 – 95.3	106	84.8 – 127
Vancomycin (VANC)	µg/mL	5.03	3.77 – 6.29	14.8	11.5 – 18.1	23.7	19 – 28.4
Vitamin B12 (VB12)	pg/mL	354.00	283 – 425	584.0	467 – 700	733	586 – 879
<b>SIEMENS ADVIA CHEMISTRY SYSTEMS</b>							
Acetaminophen (ACET)	µg/mL	<10.0		35.6	28.5 – 42.7	106	84.9 – 127
Carbamazepine (CARB_2)	µg/mL	2.97	2.23 – 3.71	8.4	6.73 – 10.1	15.7	12.5 – 18.8
Digoxin (DIG)	ng/mL	0.75	0.6 – 0.9	2.0	1.56 – 2.34	3.28	2.62 – 3.94
Ferritin (FRT)	ng/mL	51.90	41.6 – 62.3	134.0	107 – 161	312	249 – 374
Gentamicin (GENT_2)	µg/mL	2.21	1.65 – 2.76	4.2	3.35 – 5.02	6.01	4.51 – 7.51
Immunoglobulin A (IgA) (IGA_2)	mg/dL	172.00	138 – 207	186.0	149 – 223	189	151 – 227
Immunoglobulin G (IgG) (IGG_2)	mg/dL	738.00	591 – 886	812.0	650 – 974	815	652 – 978
Immunoglobulin M (IgM) (IGM_2)	mg/dL	60.20	48.2 – 72.3	76.8	61.5 – 92.2	79.2	63.4 – 95.1
Iron (IRON_2)	µg/dL	120.00	95.7 – 143	83.7	66.9 – 100	81.8	65.4 – 98.1
Lithium (LITH)	mEq/L	0.60	0.476 – 0.714	1.3	1.02 – 1.53	1.94	1.55 – 2.33
Phenytoin (PHNY_2)	µg/mL	7.11	5.33 – 8.88	15.7	11.7 – 19.6	29.2	21.9 – 36.4

# Instruments

		Level 1	BXC0363A	Level 2	BXC0363B	Level 3	BXC0363C
INSTRUMENTS / ANALYTE	Units	Target	Range	Target	Range	Target	Range
<b>SIEMENS ADVIA CENTAUR CP (Continued)</b>							
Salicylate (SAL)	mg/dL	4.08	3.06 – 5.09	16.8	13.5 – 20.2	47.6	38.1 – 57.2
Theophylline (THEO_2)	µg/mL	4.16	3.25 – 5.08	16.5	13.1 – 20	30.0	22.5 – 37.5
Tobramycin (TOB_2)	µg/mL	0.45	<0.40–0.534	3.5	2.80 – 4.19	6.41	4.8 – 8.01
Valproic Acid (VPA_2)	µg/mL	35.10	28.1 – 42.1	84.2	67.3 – 101	117	93.6 – 140
Vancomycin (VANC_2)	µg/mL	6.77	3.93 – 9.62	21.6	16.0 – 27.2	31.9	25.6 – >52.6
<b>SIEMENS BN SERIES NEPHELOMETERS</b>							
Immunoglobulin A (IgA)	mg/dL	182.00	145 – 218	198.0	158 – 238	198	159 – 238
Immunoglobulin E (IgE)	IU/mL	405	324 – 487	72.8	58.2 – 87.3	68.9	55.2 – 82.7
Immunoglobulin G (IgG)	mg/dL	802	642 – 963	890.0	712 – 1067	885	708 – 1062
Immunoglobulin M (IgM)	mg/dL	80.00	64 – 96	112.0	89.4 – 134	114	90.9 – 136
<b>SIEMENS DIMENSION SERIES</b>							
Acetaminophen (ACTM)	µg/mL	12.70	10.2 – 15.3	40.2	32.1 – 48.2	116	93 – 140
Carbamazepine (CRBM)	µg/mL	2.63	2.1 – 3.15	7.8	6.25 – 9.38	12.4	9.9 – 14.9
Digoxin (DGNA)	ng/mL	0.77	0.612 – 0.918	2.0	1.56 – 2.34	3.36	2.69 – 4.04
Ferritin (FERR)	ng/mL	59.00	47.2 – 70.8	137.0	110 – 165	301	241 – 361
Gentamicin (GENT)	µg/mL	2.19	1.75 – 2.63	4.6	3.64 – 5.46	6.79	5.43 – 8.15
hCG	mIU/mL	7.09	5.67 – 8.51	33.4	26.8 – 40.1	284	227 – 341
Immunoglobulin A (IgA)	mg/dL	148.00	118 – 177	157.0	125 – 188	154	123 – 184
Immunoglobulin G (IgG)	mg/dL	743.00	595 – 892	801.0	641 – 962	793	634 – 951
Immunoglobulin M (IgM)	mg/dL	62.20	49.7 – 74.6	77.2	61.7 – 92.6	77.0	61.6 – 92.4
Iron	µg/dL	116.00	92.8 – 139	81.8	65.4 – 98.1	79.2	63.4 – 95.1
Iron (TIBC)	µg/dL	260	208 – 312	304.0	243 – 365	276	221 – 331
Lithium (LI)	mmol/L	0.51	0.409 – 0.614	1.1	0.872 – 1.31	1.73	1.38 – 2.07
Phenytoin (PTN)	µg/mL	6.95	5.56 – 8.34	15.1	12.1 – 18.1	26.5	21.2 – 31.8
PSA (Total) (TPSA)	ng/mL	0.74	0.594 – 0.892	2.8	2.23 – 3.34	14.7	11.8 – 17.6
Salicylate (SAL)	mg/dL	4.79	3.83 – 5.75	16.6	13.3 – 19.9	45.3	36.3 – 54.4
T3 (Free)	pg/mL	2.20	1.76 – 2.64	8.1	6.48 – 9.72	14.7	11.8 – 17.7
T3 Uptake/T Uptake (% TU)	% Uptake	35.20	28.1 – 42.2	39.5	31.6 – 47.4	45.7	36.5 – 54.8
T4 (Free) (EXL LOCI Module)	ng/dL	0.81	0.651 – 0.976	2.2	1.72 – 2.58	6.62	5.29 – 7.94
T4 (Free) (Heterogeneous Module)	ng/dL	0.70	0.559–0.838	2.6	2.08 – 3.12	5.45	4.36 – >6.50
T4 (Total) (T4)	µg/dL	4.74	3.79 – 5.69	11.0	8.80 – 13.2	16.5	13.2 – 19.8
Theophylline (THEO)	µg/mL	3.66	2.93 – 4.39	15.6	12.4 – 18.7	26.8	21.4 – 32.2
Thyroid Stimulating Hormone (TSH) (EXL LOCI Module)	µIU/mL	0.57	0.46 – 0.689	5.8	4.64 – 6.96	53.2	42.5 – 63.8
Thyroid Stimulating Hormone (TSH) (Heterogeneous Module)	µIU/mL	0.45	0.359–0.538	5.0	4.03 – 6.04	30.7	24.5 – 36.8

# Instruments

		Level 1	BXC0363A	Level 2	BXC0363B	Level 3	BXC0363C
INSTRUMENTS / ANALYTE	Units	Target	Range	Target	Range	Target	Range
<b>SIEMENS DIMENSION SERIES (Continued)</b>							
Tobramycin (TOBR)	µg/mL	0.26	0.145 – 0.381	2.73	2.18 – 3.28	5.25	4.2 – 6.31
Valproic Acid (VALP)	µg/mL	33.20	26.5 – 39.8	76.8	61.5 – 92.2	100	80 – 120
Vancomycin (VANC)	µg/mL	6.32	5.05 – 7.58	19.8	15.8 – 23.7	32.5	26 – 39.1
<b>SIEMENS DIMENSION VISTA SYSTEMS</b>							
Acetaminophen (ACTM)	µg/mL	13.90	11.1 – 16.7	42.2	33.8 – 50.7	119	95.3 – 143
AFP	ng/mL	16.90	13.5 – 20.3	98.2	78.6 – 118	217	174 – 261
Carbamazepine (CRBM)	µg/mL	2.68	2.14 – 3.21	8.0	6.40 – 9.6	12.9	10.3 – 15.5
CEA	ng/mL	1.93	1.55 – 2.32	22.4	17.9 – 26.8	33.1	26.5 – 39.8
Digoxin (DGXN)	ng/mL	0.81	0.645–0.968	1.9	1.55 – 2.32	3.02	2.42 – 3.63
Estradiol	pg/mL	104.00	82.9 – 124	226.0	181 – 271	353	282 – 423
Ferritin (FERR)	ng/mL	51.90	41.5 – 62.2	136.0	109 – 163	372	298 – 447
Folate (FOL)	ng/mL	1.95	1.56 – 2.34	4.6	3.70 – 5.56	5.45	4.36 – 6.54
Follicle Stimulating Hormone (FSH)	mIU/mL	5.79	4.63 – 6.95	22.8	18.2 – 27.3	48.9	39.1 – 58.6
Gentamicin (GENT)	µg/mL	2.33	1.87 – 2.8	4.6	3.70 – 5.55	6.86	5.49 – 8.23
hCG (Beta, BHCG)	mIU/mL	7.06	5.65 – 8.47	34.0	27.2 – 40.9	276	221 – 331
Immunoglobulin A (IgA)	mg/dL	174.00	139 – 209	187.0	149 – 224	194	155 – 232
Immunoglobulin E (IgE)	IU/mL	416.00	333 – 499	78.4	62.7 – 94	72.6	58.1 – 87.1
Immunoglobulin G (IgG)	mg/dL	869	695 – 1042	797.0	638 – 956	962	865 – 1038
Immunoglobulin M (IgM)	mg/dL	80.2	64.1 – 96.2	96.9	77.6 – 116	108	86.1 – 129
Iron	µg/dL	116	92.6 – 139	82.3	65.8 – 98.8	79.0	63.2 – 94.8
Iron (TIBC)	µg/dL	258	206 – 310	303	242 – 363	273	218 – 328
Lidocaine	µg/mL	1.41	1.13 – 1.69	4.2	3.37 – 5.05	7.93	6.34 – 9.51
Lithium (LI)	mmol/L	0.59	0.469–0.703	1.2	0.995 – 1.49	1.89	1.51 – 2.27
Luteinizing Hormone (LH)	mIU/mL	1.49	1.19 – 1.79	19.3	15.4 – 23.1	82.3	65.8 – 98.8
N-Acetyl Procainamide (NAPA)	µg/mL	1.73	1.39 – 2.08	4.4	3.55 – 5.33	8.79	7.03 – 10.6
Phenobarbital (PHNO)	µg/mL	10.00	8.0 – 12.0	25.8	20.7 – 31	49.9	39.9 – 59.9
Phenytoin (PTN)	µg/mL	7.50	6.0 – 9.0	15.7	12.5 – 18.8	27.2	21.7 – 32.6
Procainamide	µg/mL	2.04	1.63 – 2.45	9.6	7.65 – 11.5	14.4	11.5 – 17.3
Progesterone (LOCI PROG)	ng/mL	0.93	0.75 – 1.12	9.0	7.23 – 10.8	19.1	15.3 – 22.9
Prolactin	ng/mL	5.05	4.04 – 6.06	18.7	14.9 – 22.4	48.6	38.9 – 58.3
PSA (Free) (FPSA)	ng/mL	0.29	0.234 – 0.351	1.5	1.21 – 1.82	9.96	7.97 – 12
PSA (Total) (TPSA)	ng/mL	0.73	0.584–0.876	2.67	2.13 – 3.2	16.3	13.1 – 19.6
Salicylate (SAL)	mg/dL	4.68	3.74 – 5.62	16.8	13.4 – 20.1	47.6	36.6 – 54.9
T3 (Free) (FT3)	pg/mL	2.15	1.72 – 2.58	7.8	6.27 – 9.41	13.9	11.1 – 16.6
T3 Uptake/T Uptake (TU, %)	% Uptake	34.50	27.6 – 41.4	39.5	31.6 – 47.4	47.6	38.1 – 57.2
T4 (Free) (FT4)	ng/dL	0.80	0.638–0.957	2.0	1.62 – 2.43	6.18	4.94 – 7.41



# Instruments

		Level 1	BXC0363A	Level 2	BXC0363B	Level 3	BXC0363C
INSTRUMENTS / ANALYTE	Units	Target	Range	Target	Range	Target	Range
<b>SIEMENS DIMENSION VISTA SYSTEMS (Continued)</b>							
T4 (Total) (T4)	µg/dL	4.93	3.94 – 5.92	12.8	12.8 – 15.4	18.5	14.8 – 22.2
Theophylline (THEO)	µg/mL	3.78	3.02 – 4.53	15.5	15.5 – 18.6	26.1	20.9 – 31.4
Thyroid Stimulating Hormone (TSH)	µIU/mL	0.50	0.396–0.593	5.7	5.65 – 6.78	53.8	43.1 – 64.6
Tobramycin (TOBR)	µg/mL	0.32	<0.3 – 0.378	2.9	2.85 – 3.42	5.39	4.31 – 6.47
Valproic Acid (VAL)	µg/mL	35.60	28.4 – 42.7	81.7	81.7 – 98.1	107	85.2 – 128
Vancomycin (VANC)	µg/mL	6.51	5.21 – 7.81	19.6	19.6 – 23.5	33.2	26.6 – 39.9
<b>SIEMENS IMMULITE / IMMULITE 1000</b>							
Cortisol	µg/dL	2.80	2.24 – 3.36	19.0	15.2 – 22.8	42.9	33.5 – >50.0
Dehydroepiandrosterone-Sulfate (DHEA-Sulfate)	µg/dL	61.60	49.3 – 73.9	123.0	98.3 – 147	569	455 – 683
Estradiol	pg/mL	102.00	81.5 – 122	303.0	242 – 364	674	539 – 809
Estriol (Free)	ng/mL	1.16	0.926 – 1.39	4.5	3.60 – 5.39		9.21 – >11.2
Ferritin	ng/mL	60.70	48.5 – 72.8	130.0	104 – 156	265	212 – 317
Follicle Stimulating Hormone (FSH)	mIU/mL	6.37	5.09 – 7.64	25.7	20.6 – 30.9	42.9	34.4 – 51.5
hCG	mIU/mL	8.04	6.43 – 9.65	38.5	30.8 – 46.1	288	231 – 346
hCG (Turbo)	mIU/mL	7.10	<5.00 – 10.2	34.4	29.5 – 39.2	276	216 – 336
Human Growth Hormone (hGH) (GRH)	ng/mL	3.25	2.83 – 3.67	8.5	7.77 – 9.27	14.9	13.7 – 16.2
Luteinizing Hormone (LH)	mIU/mL	1.38	1.11 – 1.66	17.8	14.2 – 21.4	57.3	45.8 – 68.7
Progesterone (LKPW)	ng/mL	0.85	0.486 – 1.22	9.3	7.47 – 11.2	29.7	23.1 – 36.3
Prolactin	ng/mL	7.07	5.66 – 8.49	20.9	16.7 – 25.0	39.6	30.5 – 48.8
PSA (Total)	ng/mL	1.02	0.816 – 1.22	4.1	3.29 – 4.94	16.9	13.5 – 20.3
T3 (Free)	pg/mL	2.63	2.1 – 3.15	6.1	4.87 – 7.31	7.93	6.34 – 9.52
T3 (Total)	ng/dL	61.30	49 – 73.5	198.0	158 – 237	395	316 – 473
T3 Uptake/T Uptake	% Uptake	31.10	24.9 – 37.3	36.3	29 – 43.6	53.1	42.5 – 63.7
T4 (Free) (LKFT4)	ng/dL	1.02	0.812 – 1.22	2.5	2.03 – 3.05		4.75 – >6.00
T4 (Total)	µg/dL	4.47	3.58 – 5.36	10.8	8.62 – 12.9	19.4	15.5 – 23.3
Testosterone	ng/dL	141.00	93 – 189	654.0	510 – 798	1324	937 – >1600
Thyroid Stimulating Hormone (TSH) (Gen 3)	µIU/mL	0.49	0.388–0.581	5.3	4.24 – 6.36	29.8	23.9 – 35.8
Thyroid Stimulating Hormone (TSH) (Rapid)	µIU/mL	0.50	0.396–0.594	5.2	4.17 – 6.25	29.5	23.6 – 35.4

# Instruments

		Level 1	BXC0363A	Level 2	BXC0363B	Level 3	BXC0363C
INSTRUMENTS / ANALYTE	Units	Target	Range	Target	Range	Target	Range
<b>SIEMENS IMMULITE 2000 / 2000 XPi</b>							
ACTH	pg/mL	24.30	17 – 31.6	112.0	71.5 – 152	274	208 – 339
AFP	ng/mL	18.50	14.8 – 22.2	108.0	86.2 – 129	191	153 – 229
Androstenedione	ng/mL	0.39	0.308–0.462	2.3	1.85 – 2.78	>10.0	
Androstenedione	ng/mL	0.37	<0.3–0.49	1.8	1.22 – 2.27	4.95	3.46 – 6.43
Calcitonin	pg/mL	27.50	22 – 33	264.0	212 – 317	490	392 – 588
Carbamazepine	µg/mL	2.34	1.87 – 2.81	7.6	6.04 – 9.06	12.2	9.75 – 14.6
CEA	ng/mL	2.59	2.08 – 3.11	28.9	23.1 – 34.7	40.8	32.6 – 49
Cortisol	µg/dL	2.79	2.23 – 3.34	18.5	14.8 – 22.3	38.7	31 – 46.5
C-Peptide	ng/mL	0.78	0.621–0.932	4.3	3.44 – 5.16	6.60	5.28 – 7.92
Dehydroepiandrosterone-Sulfate (DHEA-Sulfate) (DHEA-Sulfate)	µg/dL	52.60	42.1 – 63.2	102.0	81.5 – 122	480	384 – 576
Digoxin	ng/mL	0.81	0.602 – 1.03	2.1	1.67 – 2.51	3.69	2.95 – 4.43
Estradiol	pg/mL	109.00	87.2 – 131	283.0	227 – 340	601	480 – 721
Estriol (Free) (L2KUE3/L5KUE3)	ng/mL	1.16	0.926 – 1.39	4.5	3.6 – 5.39		9.21 – >12.0
Ferritin	ng/mL	60.30	48.2 – 72.3	133.0	107 – 160	310	248 – 372
Folate (Immulin 2000 / 2000 XPi)	ng/mL	2.96	2.37 – 3.55	8.2	6.57 – 9.86	14.0	11.2 – 16.8
Follicle Stimulating Hormone (FSH)	mIU/mL	6.50	5.2 – 7.8	25.3	20.2 – 30.3	46.4	37.2 – 55.7
Gastrin	pg/mL	56.50	45.2 – 67.8	256.0	205 – 307	837	669– >1000
hCG	mIU/mL	8.50	6.8 – 10.2	43.6	34.8 – 52.3	323	258 – 387
hGH	ng/mL	3.54	2.83 – 4.24	8.8	7.07 – 10.6	14.2	11.4 – 17.1
Human Growth Hormone (hGH) (L2KGRH/L5KGRH)	ng/mL	3.41	2.73 – 4.1	8.7	6.94 – 10.4	14.3	11.4 – 17.2
IGF-1/Somatomedin C	ng/mL	72.10	57.6 – 86.5	125.0	100 – 150	78.7	63 – 94.4
Immunoglobulin E (IgE)	IU/mL	390.0	312 – 467	84.3	67.4 – 101	81.3	65.1 – 97.6
Insulin	µIU/mL	6.61	5.28 – 7.93	24.5	19.6 – 29.4	55.9	43.7 – 65.5
Luteinizing Hormone (LH)	mIU/mL	1.38	1.11 – 1.66	17.0	13.6 – 20.4	55.9	44.7 – 67.1
Phenobarbital	µg/mL	9.28	7.43 – 11.1	24.1	19.3 – 28.9	48.2	38.5 – 57.8
Phenytoin	µg/mL	7.91	6.33 – 9.49	16.4	13.1 – 19.7	27.0	21.6 – 32.4
Progesterone	ng/mL	0.80	0.639–0.958	8.2	6.54 – 9.81	23.0	18.4 – 27.6
Prolactin	ng/mL	6.50	5.2 – 7.81	19.0	15.2 – 22.8	37.5	30 – 44.9
Prostatic Acid Phosphatase (PAP)	ng/mL	1.57	1.26 – 1.89	25.8	20.6 – 30.9	36.6	29.3 – 43.9
PSA (Free)	ng/mL	0.27	0.214 – 0.321	1.4	1.13 – 1.7	7.93	6.34 – 9.51
PSA (Total)	ng/mL	1.16	0.929 – 1.39	4.0	3.24 – 4.85	18.5	14.8 – 22.2
T3 (Free)	pg/mL	2.69	2.15 – 3.22	6.6	5.3 – 7.95	7.90	5.45 – 10.3
T3 (Total)	ng/dL	63.40	50.7 – 76.1	197.0	158 – 237	359	287 – 431
T3 Uptake/T Uptake	% Uptake	32.20	25.7 – 38.6	36.2	29 – 43.5	47.9	38.3 – 57.4
T4 (Free)	ng/dL	0.99	0.791 – 1.19	2.4	1.9 – 2.85	5.72	4.58 – >6.00
T4 (Total)	µg/dL	4.25	3.40 – 5.1	11.0	8.78 – 13.2	17.0	13.6 – 20.4

# Instruments

		Level 1	BXC0363A	Level 2	BXC0363B	Level 3	BXC0363C
INSTRUMENTS / ANALYTE	Units	Target	Range	Target	Range	Target	Range
<b>SIEMENS IMMULITE 2000 / 2000 XPi (Continued)</b>							
Testosterone	ng/dL	136.00	109 – 163	585.0	468 – 701	985	788 – 1181
Theophylline	µg/mL	3.67	2.94 – 4.41	17.2	13.8 – 20.6	33.2	26.5 – 39.8
Thyroglobulin (Tg)	ng/mL	0.95	0.570 – 1.33	0.961	0.74 – 1.18	1.07	0.857 – 1.29
Thyroid Stimulating Hormone (TSH) (Gen. 3)	µIU/mL	0.54	0.416–0.658	5.59	4.37 – 6.81	28.5	21.5 – 35.5
Thyroid Stimulating Hormone (TSH) (Rapid)	µIU/mL	0.50	0.397–0.596	5.4	4.34 – 6.51	28.0	22.4 – 33.6
Thyroxine Binding Globulin (TBG)	µg/mL	13.40	10.8 – 16.1	14.9	11.9 – 17.9	14.4	11.5 – 17.3
Valproic Acid	µg/mL	32.30	25.8 – 38.7	81.6	65.3 – 98	125	100 – 150
Vitamin B12	pg/mL	333.00	266 – 399	638.0	510 – 765	836	669- >1000
<b>TOSOH AIA SYSTEMS</b>							
25-OH Vitamin D (ST-AIA PACK)	ng/mL	24.00	16.8 – 31.2	37.2	26 – 48.4	42.0	29.4 – 54.5
ACTH	pg/mL	11.20	3.15 – 19.2	63.5	20.7 – 106	206	101 – 312
AFP (ST AIA-PACK)	ng/mL	18.80	13.2 – 24.4	102.0	71.6 – 133	198	139 – 258
CEA (ST AIA-PACK)	ng/mL	4.20	3.00 – 5.5	32.7	22.9 – 42.6	62.7	43.9 – 81.5
Cortisol (ST AIA-PACK)	µg/dL	2.90	2.00 – 3.8	18.7	13.1 – 24.3	29.1	20.4 – 37.8
C-Peptide (ST-AIA PACK)	ng/mL	0.60	0.4 – 0.8	3.4	2.4 – 4.4	4.10	2.9 – 5.3
Dehydroepiandrosterone-Sulfate (DHEA-Sulfate) (ST AIA-PACK)	µg/dL	73.70	51.6 – 95.8	150.0	105 – 194	546	382 – 709
Estradiol (ST AIA-PACK)	pg/mL	234.00	164 – 304	488.0	342 – 635	846	592 – 1100
Ferritin (ST AIA-PACK)	ng/mL	43.30	30.3 – 56.3	117.0	81.5 – 151	269	188 – 349
Folate (AIA-PACK)	ng/mL	3.97	2.78 – 5.16	9.5	6.67 – 12.4	14.3	10 – 18.6
Follicle Stimulating Hormone (FSH) (ST AIA-PACK)	mIU/mL	8.20	5.80 – 10.7	29.6	20.7 – 38.5	47.7	33.4 – 62
hCG (Total Beta, ST AIA-PACK)	mIU/mL	7.50	5.30 – 9.8	35.1	24.6 – 45.7	258	181 – 335
Human Growth Hormone (hGH) (ST AIA-PACK)	ng/mL	3.66	2.56 – 4.76	9.5	6.64 – 12.3	16.7	11.7 – 21.7
Immunoglobulin E (IgE) (II, ST AIA-PACK)	IU/mL	378.00	265 – 491	70.9	49.6 – 92.2	64.0	44.8 – 83.2
Insulin (IRI, ST AIA-PACK)	µIU/mL	17.20	12.0 – 22.3	74.0	51.8 – 96.2	183	128 – 238
Luteinizing Hormone (LH) (II, ST AIA-PACK)	mIU/mL	1.30	0.9 – 1.7	18.1	12.7 – 23.6	66.6	46.6 – 86.6
Progesterone (ST AIA-PACK)	ng/mL	0.93	0.65 – 1.2	10.0	7 – 13	27.0	18.9 – 35.1
Prolactin (PRL, ST AIA-PACK)	ng/mL	<1.00		6.8	4.8 – 8.9	4.50	3.2 – 5.9
Prostatic Acid Phosphatase (PAP) (ST AIA-PACK)	ng/mL	1.45	1.00 – 1.9	21.1	14.7 – 27.4	2.30	1.6 – 3
PSA (Total) (ST AIA-PACK)	ng/mL	0.82	0.580 – 1.07	2.9	2.04 – 3.8	14.3	10 – 18.6
T3 (Free) (ST AIA-PACK)	pg/mL	2.58	1.81 – 3.36	10.2	7.1 – 13.2	>25.0	
T3 (Total) (ST AIA-PACK)	ng/mL	0.78	0.550 – 1.01	2.0	1.4 – 2.6	3.06	2.14 – 3.98
T3 Uptake/T Uptake (ST AIA-PACK)	% Uptake	34.60	24.2 – 44.9	40.2	28.1 – 52.2	50.7	35.5 – >60.0
T4 (Free) (ST AIA-PACK)	ng/dL	0.90	0.63 – 1.17	2.5	1.74 – 3.23	6.55	4.58 – 8.51
T4 (Total) (ST AIA-PACK)	µg/dL	4.20	2.90 – 5.4	8.8	6.2 – 11.5	13.9	9.7 – 18.1
Testosterone (ST AIA-PACK)	ng/dL	141.00	98.9 – 184	612.0	429 – 796	985	690 – 1281

# Instruments

		Level 1	BXC0363A	Level 2	BXC0363B	Level 3	BXC0363C
INSTRUMENTS / ANALYTE	Units	Target	Range	Target	Range	Target	Range
<b>TOSOH AIA SYSTEMS (Continued)</b>							
Thyroid Stimulating Hormone (TSH) (3G, AIA-PACK)	μIU/mL	0.52	0.360 – 0.67	6.2	4.34 – 8.06	33.2	23.2 – 43.1
Thyroid Stimulating Hormone (TSH) (ST AIA-PACK)	μIU/mL	0.50	0.350 – 0.65	5.9	4.16 – 7.72	34.5	24.1 – 44.8
Vitamin B12 (AIA-PACK)	pg/mL	429	300 – 558	673.0	471 – 875	834	584 – 1084
<b>WALLAC AUTODELFIA</b>							
Estradiol (2inc)	pg/mL	100.00	69.4 – 131	217.0	164 – 272	403	306 – 500
Estradiol (IVF)	pg/mL	108.00	75.0 – 142	239.0	181 – 306	361	272 – 444
Follicle Stimulating Hormone (FSH) (hFSH)	mIU/mL	5.70	4.60 – 6.8	22.0	18 – 26	42	34 – 50
hCG	mIU/mL	7.30	5.10 – 9.5	35.0	26 – 44	276	221 – 331
Human Growth Hormone (hGH)	ng/mL	3.00	2.38 – 3.62	8.5	6.92 – 10	16.2	13.1 – 19.2
Luteinizing Hormone (LH) (hLH, Spec)	mIU/mL	1.30	1.00 – 1.6	18.0	14 – 22	61	49 – 73
Progesterone	ng/mL	1.07	0.755 – 1.38	11.9	9.43 – 14.5	37.1	29.6 – >37.7
Prolactin	ng/mL	4.00	3.00 – 5.00	13.0	10 – 16	24	19 – 29
T3 (Total)	ng/mL	0.91	0.5 – 1.3	2.2	1.75 – 2.66	3.25	2.60 – 3.90
T4 (Free)	ng/dL	1.01	0.705 – 1.32	3.9	3.1 – 4.65	>6.20	
T4 (Total)	μg/dL	4.57	3.18 – 5.97	10.2	8.22 – 12.2	12.6	10.1 – 15.2
Thyroid Stimulating Hormone (TSH) (hTSH Ultra)	μIU/mL	0.57	0.46 – 0.68	5.5	4.4 – 6.6	32	26.0 – 38.0

Get in touch

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