

# ***CDC Hormone Standardization Program (CDC HoSt)***

## **Certified Total Testosterone Assays**

From 2019 Q4 and forward

(UPDATED 3/2022)

**CDC HoSt started quarterly certification from November 2019 shipment.**

See [https://www.cdc.gov/labstandards/pdf/hs/CDC\\_Certified\\_Testosterone\\_Procedures-508.pdf](https://www.cdc.gov/labstandards/pdf/hs/CDC_Certified_Testosterone_Procedures-508.pdf) for previous list of certified assays.

- The following assays have successfully met the performance criterion of  $\pm 6.4\%$  mean bias when compared to the CDC reference measurement procedure for total testosterone.
- It is not the intent of the CDC HoSt Program to certify each lot of reagents. Participants are awarded certificates for successfully meeting bias criterion using specific methods that consist of different reagent lots and calibrator lots.
- Analytical performance in CDC HoSt Program is assessed using human serum. The measurement procedures may have different accuracy and precision with other specimen types, such as plasma.
- Certification is valid for one quarter from the certification date. It is the responsibility of the participant to ensure that the results of the assay remain consistent, between lots, and over the measurement range reported.
- The analytical performance evaluation used in certification is for testing performed in patient care. Therefore, this certification does not imply suitability of a participant as a calibration laboratory or the procedure as a metrological reference measurement procedure.

Each table includes information about certified assays, including participant name, measurement principle, assay identifier, assay measurement range, certification measurement range, certification date, individual samples pass rate, and contact information.

“Assay identifier” is an internal code used by the participant to represent the assay used for certification.

“Assay Measurement range” is the assays’ reported analytical measurement range (AMR) and is not the certification range.

“Certification Measurement Range” is the concentration range the of the samples used for HoSt certification.

“Certification date” includes historical certification information and gaps between years do not always indicate the assay’s failure to meet certification criteria.

“Individual samples pass rate” is the percentage of individual samples out of the 40 provided that met the certification criteria of  $\pm 6.4\%$  bias. This information was provided starting in February 2017.

CDC CSP suggests manufacturers and developers to participate in HoSt for certifications. The end-users or secondary location of an LDT may participate in Accuracy-based Monitoring Programs (CDC AMP) to verify performance. This document also indicates secondary LDT locations that are participating in AMP (Table 2).

**Table 1: Currently Certified Assays including their certification history**


Participant	Measurement Principle	Assay Identifier	Assay Measurement Range (ng/dL)	Certification Measurement Range (ng/dL)	Certification Date (active for 1 quarter)	Individual Samples Pass Rate (%)	Participant's Contact Information
ARUP Laboratories Salt Lake City, UT	LC/MS/MS <sup>+</sup>	Total Testosterone in Serum	1.00 - 2,500	10.1 - 736 8.53 - 680 7.71 - 680 7.71 - 680 7.71 - 941 7.71 - 941 8.77 - 941 9.63 - 941 5.70 - 840	Q4 2021 Q3 2021 Q2 2021 Q1 2021 Q4 2020 Q3 2020 Q2 2020 Q1 2020 Q4 2019	38 55 75 85 90 92 72 70 52	Canary Tennison <a href="mailto:canary.tennison@aruplab.com">canary.tennison@aruplab.com</a> 801-583-2787 x2893
BioReference Laboratories, an OPKO Health Company Elmwood Park, NJ	LC/MS/MS <sup>+</sup>	Total Testosterone	1 - 4,000	7.71 - 821 8.49 - 915 8.49 - 915 8.49 - 915	Q3 2020 Q2 2020 Q1 2020 Q4 2019	62 72 68 75	Hashim Othman, Ph.D. <a href="mailto:hothman@bioreference.com">hothman@bioreference.com</a>
Brigham Research Assay Core (BRAC) Laboratory at Harvard Medical School Boston, MA	LC/MS/MS <sup>+</sup>	Serum Total Testosterone	1.00 - 2,000 (>2,000 with dilution)	7.71 - 941 7.71 - 941 8.77 - 941 8.77 - 680 8.77 - 941 8.77 - 941 8.77 - 941 7.71 - 941 5.70 - 915	Q4 2021 Q3 2021 Q2 2021 Q1 2021 Q4 2020 Q3 2020 Q2 2020 Q1 2020 Q4 2019	82 72 72 68 68 57 50 55 57	Dr. Shalender Bhasin <a href="mailto:sbhasin@bwh.harvard.edu">sbhasin@bwh.harvard.edu</a> (617) 525-9040  Liming Peng <a href="mailto:Lpeng2@bwh.harvard.edu">Lpeng2@bwh.harvard.edu</a> (617) 525-9048

Participant	Measurement Principle	Assay Identifier	Assay Measurement Range (ng/dL)	Certification Measurement Range (ng/dL)	Certification Date (active for 1 quarter)	Individual Samples Pass Rate (%)	Participant's Contact Information
Clinical Chemistry Branch CDC Atlanta, GA	LC/MS/MS <sup>+</sup>	Total Testosterone in Serum (1036)	0.57 - 12,800	8.53 - 680 8.53 - 840 11.0 - 840 8.77 - 840 8.77 - 941 8.49 - 941 8.49 - 941 8.49 - 941 8.49 - 915	Q4 2021 Q3 2021 Q2 2021 Q1 2021 Q4 2020 Q3 2020 Q2 2020 Q1 2020 Q4 2019	90 90 90 92 95 92 98 98 98	Lumi Duke, MS <a href="mailto:LDuke@cdc.gov">LDuke@cdc.gov</a> (770) 488-4126
Covance Central Laboratories Services, Inc. Indianapolis, IN	LC/MS/MS <sup>+</sup>	Serum Total Testosterone	2.00 - 8,000	7.71 - 840 7.71 - 840 7.71 - 840 7.71 - 840 8.77 - 941 8.77 - 941 8.77 - 941 8.77 - 941 7.71 - 941 7.71 - 753	Q4 2021 Q3 2021 Q2 2021 Q1 2021 Q4 2020 Q3 2020 Q2 2020 Q1 2020 Q4 2019	78 88 78 78 82 78 85 85 80	Cristina Hedin, MS 8211 Scicor Drive Indianapolis, IN 46214 <a href="mailto:cristina.hedin@covance.com">cristina.hedin@covance.com</a> (317) 273-7842
Covance Central Laboratories Services, Inc. Geneva, Switzerland	LC/MS/MS <sup>+</sup>	Total Testosterone	2.00 - 8,000	12.2 - 941 12.2 - 769 12.2 - 769 8.77 - 821	Q4 2021 Q3 2021 Q2 2021 Q1 2021	95 75 70 75	Gaelle Gilbert <a href="mailto:gaelle.gilbert@covance.com">gaelle.gilbert@covance.com</a> 0041 (0) 58 822 7656

Participant	Measurement Principle	Assay Identifier	Assay Measurement Range (ng/dL)	Certification Measurement Range (ng/dL)	Certification Date (active for 1 quarter)	Individual Samples Pass Rate (%)	Participant's Contact Information
Diagnostic Laboratory for Endocrinology, Erasmus University Medical Center  Rotterdam, The Netherlands	LC/MS/MS <sup>+</sup>	Serum Testosterone	2 - 1,093	7.71 - 941 7.71 - 769 7.71 - 769 7.71 - 736 8.77 - 753 8.49 - 821 8.49 - 821 8.49 - 840 8.49 - 840	Q4 2021 Q3 2021 Q2 2021 Q1 2021 Q4 2020 Q3 2020 Q2 2020 Q1 2020 Q4 2019	80 85 70 68 78 78 92 92 95	S.A.A. van den Berg <a href="mailto:s.a.a.vandenberg@erasmusmc.nl">s.a.a.vandenberg@erasmusmc.nl</a> S.S. Panchoe - Ramcharan <a href="mailto:s.panchoe@erasmusmc.nl">s.panchoe@erasmusmc.nl</a>
Endocrine and Metabolic Research Laboratory at Los Angeles Biomedical Research Institute  Torrance, CA	LC/MS/MS <sup>+</sup>	TDHT	2.0 - 2,000	8.53 - 753 8.53 - 753 8.53 - 736 8.53 - 736 8.77 - 941 8.77 - 941 3.66 - 941	Q4 2021 Q3 2021 Q2 2021 Q1 2021 Q4 2020 Q2 2020 Q1 2020	52 65 68 50 52 48 70	Dr. Christina Wang <a href="mailto:wang@lundquist.org">wang@lundquist.org</a> (310) 222-2503
LabCorp  Calabasas Hills, CA	LC/MS/MS <sup>+</sup>	#070001 Testosterone, Total, Women, Children, and Hypogonadal Males, LC MS/MS	2.50 - 5,000  (250,000 with validated dilution)	8.77 - 941 8.77 - 941 9.51 - 941 8.77 - 941 8.77 - 941 8.77 - 941 13.1 - 941 9.63 - 840	Q4 2021 Q3 2021 Q2 2021 Q4 2020 Q3 2020 Q2 2020 Q1 2020 Q4 2019	95 90 88 78 82 82 88 90	Dr. Andre Valcour <a href="mailto:ValcouA@labcorp.com">ValcouA@labcorp.com</a> (336) 436-3854 Dr. Brett Holmquist <a href="mailto:holmquib@labcorp.com">holmquib@labcorp.com</a> (818) 867-1362

Participant	Measurement Principle	Assay Identifier	Assay Measurement Range (ng/dL)	Certification Measurement Range (ng/dL)	Certification Date (active for 1 quarter)	Individual Samples Pass Rate (%)	Participant's Contact Information
LabCorp Burlington, NC	LC/MS/MS <sup>+</sup>	#070001 Testosterone, Total, Women, Children, and Hypogonadal Males, LC MS/MS	2.50 - 5,000  (250,000 with validated dilution)	8.53 - 941 8.77 - 941 8.77 - 941 8.77 - 941 8.77 - 941 8.49 - 941 8.49 - 840	Q2 2021 Q1 2021 Q4 2020 Q3 2020 Q2 2020 Q1 2020 Q4 2019	90 95 95 92 95 98 98	Hema Ketha <a href="mailto:Kethah@labcorp.com">Kethah@labcorp.com</a> 336-436-3102
LabCorp Spokane, WA	LC/MS/MS <sup>+</sup>	Total Testosterone	2.5 – 1,000  (250,000 with validated dilution)	7.71 - 753 8.77 - 753 9.51 - 753 8.77 - 821 8.77 - 941 8.49 - 941 8.49 - 941 7.71 - 941 7.71 - 915	Q4 2021 Q3 2021 Q2 2021 Q1 2021 Q4 2020 Q3 2020 Q2 2020 Q1 2020 Q4 2019	57 65 62 62 70 72 80 88 88	Carissa Schmitz MLS(ASCP)CM <a href="mailto:Schmic4@LabCrop.com">Schmic4@LabCrop.com</a> (509) 755-8358

Participant	Measurement Principle	Assay Identifier	Assay Measurement Range (ng/dL)	Certification Measurement Range (ng/dL)	Certification Date <i>(active for 1 quarter)</i>	Individual Samples Pass Rate (%)	Participant's Contact Information
Mayo Clinic Rochester, MN	LC/MS/MS <sup>+</sup>	Total Testosterone	7 – 2,000	10.1 - 941 10.1 - 941 10.1 - 941 8.77 - 651 8.77 - 941 8.77 - 941 8.77 - 941 10.6 - 941 9.63 - 915	Q4 2021 Q3 2021 Q2 2021 Q1 2021 Q4 2020 Q3 2020 Q2 2020 Q1 2020 Q4 2019	60 62 62 55 57 60 72 70 72	Sue Reicks <a href="mailto:reicks.sue@mayo.edu">reicks.sue@mayo.edu</a>
Penn State University Hershey Medical Center Hershey, PA	LC/MS/MS <sup>+</sup>	Total Testosterone in Serum	2 - 2,330	7.71 - 941 7.71 - 941 7.71 - 941 7.71 - 753 8.77 - 821 8.77 - 821 8.77 - 821 9.63 - 840 9.63 - 941	Q4 2021 Q3 2021 Q2 2021 Q1 2021 Q4 2020 Q3 2020 Q2 2020 Q1 2020 Q4 2019	65 72 70 68 68 68 75 78 82	Yusheng Zhu, PhD, DABCC, FAACC <a href="mailto:yzhu@pennstatehealth.psu.edu">yzhu@pennstatehealth.psu.edu</a> (717) 531-5123

Participant	Measurement Principle	Assay Identifier	Assay Measurement Range (ng/dL)	Certification Measurement Range (ng/dL)	Certification Date (active for 1 quarter)	Individual Samples Pass Rate (%)	Participant's Contact Information
<b>Quest Diagnostics Nichols Institute of Valencia, Inc.</b> Valencia, CA  See <b>Table 2</b> for AMP status	LC/MS/MS <sup>+</sup>	Serum Total Testosterone	2 - 2,000 (10,000 with dilution)	8.77 - 769	Q4 2021	72	Amit Ghoshal PhD <a href="mailto:Amit.K.Ghoshal@QuestDiagnostics.com">Amit.K.Ghoshal@QuestDiagnostics.com</a> (661) 799-6204
				8.77 - 821	Q3 2021	75	
				11.0 - 941	Q2 2021	65	
				8.77 - 941	Q1 2021	62	
				8.77 - 941	Q4 2020	65	
				8.49 - 941	Q3 2020	65	
				8.49 - 821	Q2 2020	72	
				8.49 - 821	Q1 2020	70	
				8.49 - 941	Q4 2019	70	
<b>Roche Diagnostics GmbH</b> Penzberg, Germany	LC/MS/MS <sup>+</sup>	Total Testosterone in Serum	0.8 – 1,800	8.53 - 821	Q4 2021	75	Rupert Schmid <a href="mailto:rupert.schmid@roche.com">rupert.schmid@roche.com</a> +498856-605256
				9.51 - 769	Q3 2021	65	
				10.1 - 769	Q2 2021	70	
				8.77 - 941	Q1 2021	70	
				8.77 - 941	Q4 2020	70	
<b>Siemens Healthcare Diagnostics</b> Newark, DE	Chemiluminescence Immunoassay	Serum Total Testosterone	8 - 1,000	10.9 - 680	Q4 2021	31 21 24 30 24 26 32	Dr. Craig Hixson <a href="mailto:craig.hixson@siemens.com">craig.hixson@siemens.com</a> (302) 631-7540
				9.51 - 680	Q3 2021		
				8.77 - 941	Q4 2020		
				8.49 - 941	Q3 2020		
				8.49 - 941	Q2 2020		
				8.49 - 941	Q1 2020		
				8.49 - 915	Q4 2019		

Participant	Measurement Principle	Assay Identifier	Assay Measurement Range (ng/dL)	Certification Measurement Range (ng/dL)	Certification Date (active for 1 quarter)	Individual Samples Pass Rate (%)	Participant's Contact Information
Siemens Healthcare Diagnostics Tarrytown, NY	Chemiluminescence Immunoassay	ADVIA Centaur® Testosterone II Assay	7.0 – 1,500	10.1 - 840	Q4 2021	32 28 35 35 38 38 38 35 32	Neil Parker <a href="mailto:neil.np.parker@siemens-healthineers.com">neil.np.parker@siemens-healthineers.com</a> (914) 524-2477
				8.53 - 840	Q3 2021		
				10.9 - 840	Q2 2021		
				8.77 - 821	Q1 2021		
				8.77 - 941	Q4 2020		
				8.77 - 941	Q3 2020		
				8.77 - 941	Q2 2020		
				7.71 - 941	Q1 2020		
				7.71 - 840	Q4 2019		
Siemens Healthcare Diagnostics Tarrytown, NY	Chemiluminescence Immunoassay	Atellica® Testosterone	7.0 – 1,500	8.53 - 941	Q4 2021	26 31 21 18 18 15 20 28 32	Neil Parker <a href="mailto:neil.np.parker@siemens-healthineers.com">neil.np.parker@siemens-healthineers.com</a> (914) 524-2477
				8.53 - 941	Q3 2021		
				10.1 - 736	Q2 2021		
				8.77 - 821	Q1 2021		
				8.49 - 821	Q4 2020		
				8.49 - 821	Q3 2020		
				8.49 - 821	Q2 2020		
				8.49 - 821	Q1 2020		
				8.49 - 941	Q4 2019		
Siemens Healthcare Diagnostics Tarrytown, NY	Chemiluminescence Immunoassay	ADVIA Centaur CP	7.0 – 1,500	9.51-736	Q4 2021	28 35 38 28 35 32	Neil Parker <a href="mailto:neil.np.parker@siemens-healthineers.com">neil.np.parker@siemens-healthineers.com</a> (914) 524-2477
				10.1 - 840	Q3 2021		
				8.53 - 840	Q2 2021		
				8.53 - 840	Q1 2021		
				8.53 - 941	Q4 2020		
				8.49 - 941	Q3 2020		



Participant	Measurement Principle	Assay Identifier	Assay Measurement Range (ng/dL)	Certification Measurement Range (ng/dL)	Certification Date (active for 1 quarter)	Individual Samples Pass Rate (%)	Participant's Contact Information
University of Minnesota (MEBRL) Minneapolis, MN	LC/MS/MS†	Total Testosterone in Serum	2 – 2,000	8.53 - 753 7.71 - 753 7.71 - 753 7.71 - 659 8.49 - 941	Q4 2021 Q3 2021 Q2 2021 Q1 2021 Q2 2020	80 70 60 57 75	Revati Koratkar <a href="mailto:kora0033@umn.edu">kora0033@umn.edu</a> 612-624-2959

† LC/MS/MS – Liquid Chromatography Tandem Mass Spectrometry

‡ GC/MS/MS – Gas Chromatography Tandem Mass Spectrometry

**Table 2: Accuracy-Based Monitoring Programs (AMP) status of secondary location**

Participant	Measurement Principle	Assay Identifier	AMP Active Date (active for 1 quarter)	Participant's Contact Information
Quest Diagnostics Chantilly, VA	LC/MS/MS†	Serum Total Testosterone	Q4 2021 Q3 2021 Q2 2021 Q1 2021 Q4 2020 Q3 2020 Q2 2020 Q1 2020 Q4 2019	William Wu PhD <a href="mailto:William.W.Wu@QuestDiagnostics.com">William.W.Wu@QuestDiagnostics.com</a> (703) 802-7210