

# ***CDC Vitamin D Standardization-Certification Program (CDC VDSCP)***

## **Certified Total 25-hydroxyvitamin D Assays**

From 2019 Q4 and forward

(UPDATED 04/2024)

CDC VDSCP started quarterly certification from November 2019 shipment.

See <https://www.cdc.gov/clinical-standardization-programs/media/pdfs/2024/04/CDC-Certified-Vitamin-D-Procedures-508.pdf> for previous list of certified assays.

- The following assays have successfully met the performance criterion of  $\pm 5.0\%$  mean bias when compared to the CDC reference measurement procedure and an overall imprecision of  $<10\%$ . **Only data for total 25-hydroxyvitamin D was used for certification.**
- It is not the intent of the CDC VDSCP to certify each lot of reagents. Participants are awarded certificates for successfully meeting bias and imprecision criteria using specific methods that consist of different reagent and calibrator lots.
- Analytical performance in the CDC VDSCP 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, 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 assay’s reported analytical measurement range (AMR) and is not the certification range.

“Certification Measurement Range” is the concentration range the of the samples used for VDSCP 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 certification criteria of  $\pm 5\%$  bias. This information was provided starting February 2017.

Note: The  $\pm 5\%$  mean bias used for certification can be considered the allowable calibration bias. Certification indicates that the assay is calibrated to meet those limits. Due to differences in test selectivity, measurements on individual samples can exceed the calibration bias. Therefore, the individual sample pass rate provides some information about the selectivity of a test that meets the calibration criteria.

**Table 1: Currently Certified Assays**

Participant	Measurement Principle	Assay Identifier	Assay Measurement Range (nmol/L)	Certification Measurement Range (nmol/L)	Certification Date (active for 1 quarter)	Individual Samples Pass Rate (%)	Participant's Contact Information
Abbott GmbH Longford, Ireland	Chemiluminescence Immunoassay	ALINITY 25-OH Vitamin D (List Number 08P45)	8.5 - 385.5	12.1 - 182	Q4 2023	25	Ronan O'Neill <a href="mailto:Ronan.O'Neill@abbott.com">Ronan.O'Neill@abbott.com</a> +353 (0)43-33-31008
				17.4 - 149	Q2 2021	45	
				16.7 - 149	Q1 2021	42	
				13.1 - 183	Q1 2020	25	
				13.1 - 183	Q4 2019	32	
Abbott GmbH Longford, Ireland	Chemiluminescence Immunoassay	ARCHITECT 25-OH Vitamin D (List Number 5P02)	8.5 - 389.8	16.1 - 208	Q3 2023	33	Ronan O'Neill <a href="mailto:Ronan.O'Neill@abbott.com">Ronan.O'Neill@abbott.com</a> +353 (0)43-33-31008
				16.1 - 123	Q2 2021	40	
				13.1 - 136	Q1 2021	38	
				13.1 - 149	Q4 2020	38	
				12.1 - 220	Q3 2020	35	
				12.1 - 220	Q2 2020	28	
				12.1 - 220	Q1 2020	28	
				12.1 - 220	Q4 2019	35	
Affimedix, Inc. Hayward, CA	Sandwich ELISA	MicrO - D™ 25-OH Vitamin D (total)	4.2 - 375	16.1 - 175	Q4 2019	35	Kevin Wang <a href="mailto:Kwang@affimedix.com">Kwang@affimedix.com</a>

Participant	Measurement Principle	Assay Identifier	Assay Measurement Range (nmol/L)	Certification Measurement Range (nmol/L)	Certification Date (active for 1 quarter)	Individual Samples Pass Rate (%)	Participant's Contact Information
<b>ARUP Laboratories, Inc.</b> Salt Lake City, UT	LC/MS/MS+	25-Hydroxyvitamin D2 and D3 by Tandem Mass Spectrometry, Serum	2.5 - 249.6	12.1 - 157	Q1 2023	50	Kayla West <a href="mailto:Kayla.west@aruplab.com">Kayla.west@aruplab.com</a> 801-583-2787 x2893
				12.1 - 142	Q1 2023	50	
				12.1 - 139	Q4 2022	65	
				12.1 - 162	Q3 2022	65	
				16.1 - 305	Q2 2022	48	
				16.1 - 305	Q1 2022	55	
				16.1 - 305	Q4 2021	60	
				16.7 - 305	Q3 2021	50	
				16.7 - 135	Q2 2021	65	
				16.1 - 135	Q1 2021	62	
				16.1 - 149	Q4 2020	65	
				16.1 - 149	Q3 2020	78	
				16.1 - 149	Q2 2020	65	
				18.1 - 183	Q1 2020	65	
19.7 - 183	Q4 2019	60					
<b>AUTOBIO DIAGNOSTICS CO., LTD.</b> Zhengzhou, China	Chemiluminescence Immunoassay	AutoLumo 25-OH Vitamin D Total Assay	11.25 - 375	13.1 - 140	Q2 2020	26	Zhang Yujiao <a href="mailto:zhangyujiao@autobio.com.cn">zhangyujiao@autobio.com.cn</a> 86-371-66785303

Participant	Measurement Principle	Assay Identifier	Assay Measurement Range (nmol/L)	Certification Measurement Range (nmol/L)	Certification Date (active for 1 quarter)	Individual Samples Pass Rate (%)	Participant's Contact Information
Boditech Med Inc. South Korea	Fluorescence Immunoassay	Boditech Med Ichroma Vitamin D 25(OH)D2/D3	20 - 175	22.0 - 158	Q3 2023	20	Jieun Lee <a href="mailto:lje@boditech.co.kr">lje@boditech.co.kr</a> 82-70-4264-7575
				22.6 - 157	Q2 2023	22	
				22.0 - 157	Q1 2023	21	
				22.0 - 162	Q3 2022	29	
				22.0 - 162	Q2 2022	32	
				22.6 - 139	Q3 2021	32	
				22.6 - 123	Q2 2021	42	
				22.6 - 183	Q1 2021	38	
				22.0 - 183	Q4 2020	38	
				12.1 - 183	Q3 2020	36	
				12.1 - 183	Q2 2020	28	
				12.1 - 183	Q1 2020	25	
12.1 - 183	Q4 2019	22					
Boditech Med Inc. South Korea	Fluorescence Immunoassay	Boditech Med AFIAS Vitamin D 25(OH)D2/D3	20 - 175	22.0 - 157	Q4 2023	18	Jieun Lee <a href="mailto:lje@boditech.co.kr">lje@boditech.co.kr</a> 82-70-4264-7575
				22.0 - 157	Q3 2023	11	
				22.0 - 162	Q2 2023	11	
				22.0 - 162	Q1 2023	8	
				22.0 - 162	Q3 2022	10	
				28.5 - 157	Q3 2021	40	
				28.5 - 140	Q2 2021	38	
				12.1 - 140	Q1 2021	31	
				12.1 - 135	Q4 2020	31	
				12.1 - 140	Q3 2020	24	

Participant	Measurement Principle	Assay Identifier	Assay Measurement Range (nmol/L)	Certification Measurement Range (nmol/L)	Certification Date (active for 1 quarter)	Individual Samples Pass Rate (%)	Participant's Contact Information
<b>CCR Laboratory</b> <b>University of Maryland</b> <b>Clinical Pathology</b> Baltimore, MD	LC/MS/MS <sup>+</sup>	Total 25 OH-Vitamin D 10 – 400 nmol/mL	10 - 400	12.1 - 208	Q4 2023	48	Dr. Show-Hong Duh <a href="mailto:sduh@umm.edu">sduh@umm.edu</a> (410) 328-5705
				12.1 - 208	Q3 2023	50	
				12.1 - 208	Q2 2023	38	
				12.1 - 208	Q1 2023	48	
				22.0 - 162	Q4 2022	38	
				12.1 - 162	Q3 2022	38	
				12.1 - 162	Q2 2022	42	
				12.1 - 162	Q1 2022	32	
				12.1 - 162	Q4 2021	38	
				16.7 - 158	Q3 2021	42	
				17.4 - 140	Q2 2021	50	
				16.7 - 183	Q1 2021	50	
				13.1 - 183	Q3 2020	38	
				13.1 - 183	Q2 2020	35	
13.1 - 149	Q1 2020	42					
13.1 - 136	Q4 2019	52					

Participant	Measurement Principle	Assay Identifier	Assay Measurement Range (nmol/L)	Certification Measurement Range (nmol/L)	Certification Date (active for 1 quarter)	Individual Samples Pass Rate (%)	Participant's Contact Information
<b>Covance Central Laboratory Services, Inc.</b> Indianapolis, IN	LC/MS/MS†	Total 25 Hydroxy-Vitamin D2/D3	1.25 - 1,996.80	16.1 - 208	Q1 2022	92	Cristina Hedin <a href="mailto:cristina.hedin@covance.com">cristina.hedin@covance.com</a> (317) 273-7842
				16.1 - 208	Q4 2021	95	
				16.1 - 157	Q3 2021	80	
				16.1 - 135	Q2 2021	75	
				12.1 - 183	Q1 2021	72	
				12.1 - 183	Q4 2020	62	
				12.1 - 183	Q3 2020	78	
				12.1 - 183	Q2 2020	82	
				16.1 - 140	Q1 2020	82	
				18.1 - 140	Q4 2019	90	

Participant	Measurement Principle	Assay Identifier	Assay Measurement Range (nmol/L)	Certification Measurement Range (nmol/L)	Certification Date (active for 1 quarter)	Individual Samples Pass Rate (%)	Participant's Contact Information
<b>Centre Hospitalier Universitaire de Liège</b> Sart-Tilman, Belgium	LC/MS/MS+	25(OH)D3+25(OH)D2+C3-epimer+24,25(OH)2D	3.7 - 624	17.4 - 162	Q4 2023	78	Prof. Etienne Cavalier <a href="mailto:etienne.cavalier@chu.ulg.ac.be">etienne.cavalier@chu.ulg.ac.be</a> +32 4 3668822
				17.4 - 182	Q3 2023	72	
				16.7 - 182	Q2 2023	70	
				16.7 - 182	Q1 2023	62	
				16.7 - 182	Q4 2022	70	
				16.7 - 157	Q3 2022	72	
				18.1 - 162	Q2 2022	70	
				18.1 - 162	Q1 2022	68	
				21.5 - 162	Q4 2021	70	
				21.5 - 162	Q3 2021	80	
				21.5 - 128	Q2 2021	85	
				12.1 - 136	Q1 2021	92	
				12.1 - 149	Q4 2020	92	
				12.1 - 149	Q3 2020	85	
12.1 - 198	Q2 2020	75					
18.1 - 198	Q1 2020	62					
18.1 - 198	Q4 2019	57					
<b>Department of Obstetrics and Gynaecology, The University of Hong Kong</b> Hong Kong, China	Immunoassay	ARCHITECT® 25-OH Vitamin D Assay	8.5 - 389.8	16.1 - 158	Q4 2023	32	Raymond Li <a href="mailto:raymondli@hku.hk">raymondli@hku.hk</a> 85222554517
				17.4 - 208	Q3 2022	38	
				17.4 - 182	Q2 2022	40	
				16.1 - 158	Q4 2021	38	

Participant	Measurement Principle	Assay Identifier	Assay Measurement Range (nmol/L)	Certification Measurement Range (nmol/L)	Certification Date (active for 1 quarter)	Individual Samples Pass Rate (%)	Participant's Contact Information
DiaSorin Stillwater, MN	Chemiluminescence Immunoassay	LIAISON® 25 OH Vitamin D TOTAL Assay	10 - 375	12.1 - 208	Q4 2023	30	Cole Gilman <a href="mailto:cole.gilman@diasorin.com">cole.gilman@diasorin.com</a> (651) 351-5933
				16.7 - 157	Q1 2023	22	
				17.4 - 157	Q4 2022	20	
				17.4 - 162	Q3 2022	20	
				17.4 - 305	Q2 2022	22	
				16.7 - 305	Q1 2022	30	
				16.7 - 305	Q4 2021	30	
				16.1 - 305	Q3 2021	30	
				13.1 - 183	Q2 2021	22	
				13.1 - 183	Q1 2021	12	
				13.1 - 183	Q4 2020	10	
				13.1 - 138	Q3 2020	10	
				16.7 - 220	Q2 2020	12	
				17.4 - 220	Q1 2020	15	
17.4 - 220	Q4 2019	28					



Participant	Measurement Principle	Assay Identifier	Assay Measurement Range (nmol/L)	Certification Measurement Range (nmol/L)	Certification Date (active for 1 quarter)	Individual Samples Pass Rate (%)	Participant's Contact Information
<b>Diazyme Laboratories, Inc.</b> Poway, CA	Immunoturbidimetric Assay	Diazyme EZ Vitamin D Total Assay	18.9 - 369	32.4 - 182	Q4 2022	12	Dr. Chao Dou <a href="mailto:chao.dou@diazyme.com">chao.dou@diazyme.com</a> 858-455-4763
				27.5 - 194	Q2 2022	13	
				22.2 - 194	Q1 2022	16	
				21.5 - 194	Q4 2021	8	
				21.5 - 194	Q3 2021	8	
				21.5 - 140	Q2 2021	14	
				16.7 - 140	Q1 2021	11	
				16.7 - 149	Q2 2020	19	
				18.1 - 149	Q1 2020	21	
				19.7 - 136	Q4 2019	18	
<b>Douglass Hanly Moir Pathology</b> Sydney, Australia	LC/MS/MS†	25-Hydroxyvitamin D2 and D3 by Tandem Mass Spectrometry, Serum	3.90 - 600	12.1 - 162	Q1 2023	10	Andy Liu <a href="mailto:aliu@dhm.com.au">aliu@dhm.com.au</a> +61298555275
				16.7 - 194	Q4 2022	32	
				16.7 - 194	Q1 2022	45	
				16.7 - 140	Q4 2021	55	
				13.1 - 183	Q2 2021	55	
				12.1 - 183	Q1 2021	68	
				12.1 - 183	Q4 2020	68	

Participant	Measurement Principle	Assay Identifier	Assay Measurement Range (nmol/L)	Certification Measurement Range (nmol/L)	Certification Date (active for 1 quarter)	Individual Samples Pass Rate (%)	Participant's Contact Information
<b>Endocrine Sciences Laboratory, LabCorp</b> Calabasas Hills, CA	LC/MS/MS+	Test Code 500510 (Total)	2.4 - 625	12.0 - 158	Q4 2023	78	Dr. Brett Holmquist <a href="mailto:Holmqub@labcorp.com">Holmqub@labcorp.com</a> (818)867-1362
				12.1 - 208	Q3 2023	70	
				12.1 - 208	Q2 2023	68	
				12.1 - 208	Q1 2023	62	
				12.1 - 208	Q4 2022	60	
				12.1 - 149	Q3 2022	60	
				17.4 - 208	Q2 2022	60	
				16.1 - 208	Q1 2022	65	
				16.1 - 208	Q4 2021	70	
				16.1 - 208	Q3 2021	78	
				13.1 - 140	Q2 2021	72	
				13.1 - 149	Q1 2021	68	
				13.1 - 149	Q4 2020	62	
				10.4 - 149	Q3 2020	57	
				10.4 - 175	Q2 2020	65	
10.4 - 175	Q1 2020	72					
10.4 - 183	Q4 2019	70					
<b>Fujirebio INC.</b> Tokyo, Japan	Chemiluminescence Enzyme Immunoassay	Lumipulse® G 25-OH Vitamin D	10 - 375	16.1 - 183	Q1 2020	45	Satoshi Saito <a href="mailto:satoshi.kojima@miraca.com">satoshi.kojima@miraca.com</a> +81-42-645-4742

Participant	Measurement Principle	Assay Identifier	Assay Measurement Range (nmol/L)	Certification Measurement Range (nmol/L)	Certification Date (active for 1 quarter)	Individual Samples Pass Rate (%)	Participant's Contact Information
<b>GC Labs</b> Yongin-si, Gyeonggi-do, Republic of Korea	LC/MS/MS†	Serum Total 25OHD, 25OHD3, 25OHD2 and 3-epi-25OHD3	D3: 0.871- 364 D2: 1.21 - 329 epi: 1.25 - 67	12.1 - 208	Q4 2023	85	Sung-Eun Cho, M.D., Ph.D. <a href="mailto:secho1206!!@gclabs.co.kr">secho1206!!@gclabs.co.kr</a> Jung-Sun Han <a href="mailto:jshan@gclabs.co.kr">jshan@gclabs.co.kr</a>
				12.1 - 208	Q3 2023	85	
				12.1 - 208	Q2 2023	82	
				12.1 - 208	Q1 2023	75	
				17.4 - 162	Q4 2022	70	
				17.4 - 149	Q3 2022	68	
				17.4 - 182	Q2 2022	68	
<b>Heartland Assays</b> Ames, IA	LC/MS/MS†	25(OH)D2/D3 via LC/MS/MS	3.75 - 500	17.4 - 158	Q3 2023	60	Drew Makowski <a href="mailto:Drew.makowski@heartlandassays.com">Drew.makowski@heartlandassays.com</a> or John Rathmacher <a href="mailto:John.rathmacher@heartlandassays.com">John.rathmacher@heartlandassays.com</a>
				12.1 - 158	Q2 2023	50	
				12.1 - 162	Q1 2023	62	
				18.1 - 211	Q2 2022	52	
				22.2 - 211	Q1 2022	48	
				22.2 - 211	Q4 2021	70	
				17.4 - 211	Q3 2021	75	
				17.4 - 132	Q2 2021	67	
				16.7 - 136	Q1 2021	65	
				12.1 - 136	Q4 2020	57	
				12.1 - 136	Q3 2020	65	
				12.1 - 183	Q2 2020	75	
				12.1 - 183	Q1 2020	65	
				13.1 - 183	Q4 2019	68	

Participant	Measurement Principle	Assay Identifier	Assay Measurement Range (nmol/L)	Certification Measurement Range (nmol/L)	Certification Date (active for 1 quarter)	Individual Samples Pass Rate (%)	Participant's Contact Information
<b>Immunodiagnostic Systems (IDS)</b> Tyne and Wear, GB	ELISA	25-Hydroxy Vitamin D EIA	16.3 - 250	17.4 - 208	Q4 2023	41	Heather Pham <a href="mailto:Heather.pham@idsplc.com">Heather.pham@idsplc.com</a>
				16.1 - 208	Q3 2023	33	
				16.1 - 208	Q2 2023	35	
				16.1 - 157	Q1 2023	33	
				16.1 - 157	Q4 2022	33	
				17.4 - 182	Q2 2022	26	
				16.7 - 182	Q1 2022	20	
				16.7 - 182	Q4 2021	18	
				16.7 - 182	Q3 2021	26	
				16.7 - 134	Q2 2021	23	
				16.1 - 220	Q1 2021	29	
				16.1 - 220	Q4 2020	35	
				16.1 - 220	Q3 2020	24	
				16.1 - 220	Q2 2020	29	
10.4 - 183	Q1 2020	24					
10.4 - 183	Q4 2019	18					

Participant	Measurement Principle	Assay Identifier	Assay Measurement Range (nmol/L)	Certification Measurement Range (nmol/L)	Certification Date (active for 1 quarter)	Individual Samples Pass Rate (%)	Participant's Contact Information
<b>Immunodiagnostic Systems (IDS)</b> Tyne and Wear, GB	CLIA	IDS 25 VitD <sup>s</sup>	10 - 275	16.1 - 162	Q4 2023	45	Heather Pham <a href="mailto:Heather.pham@idsplc.com">Heather.pham@idsplc.com</a>
				16.1 - 162	Q3 2023	50	
				12.1 - 162	Q2 2023	45	
				12.1 - 162	Q1 2023	42	
				12.1 - 158	Q4 2022	35	
				12.1 - 149	Q3 2022	28	
				17.4 - 162	Q2 2022	25	
				12.1 - 162	Q1 2022	22	
				12.1 - 162	Q4 2021	30	
				12.1 - 162	Q3 2021	38	
				12.1 - 135	Q2 2021	40	
				16.1 - 136	Q1 2021	45	
				16.1 - 136	Q4 2020	38	
				12.1 - 138	Q3 2020	33	
10.4 - 183	Q1 2020	24					
10.4 - 183	Q4 2019	26					
<b>Instituto Nacional de Ciencias Medicas Salvador Zubirán</b> Mexico City, Mexico	CLIA	ARCHITECT® 25-OH Vitamin D Assay	8.5 – 389.8	16.1 - 182	Q4 2022	35	QFB. Alejandra Pacheco Cervantes <a href="mailto:alepachecoc@hotmail.com">alepachecoc@hotmail.com</a>
<b>Mayo Clinic Florida</b> Jacksonville, FL	LC/MS/MS†	25 hydroxyvitamin D2 and D3	D2: 5 - 250 D3: 10 - 250	12.1 - 208	Q4 2023	60	Charles Barmore <a href="mailto:barmore.charles@mayo.edu">barmore.charles@mayo.edu</a> (904) 953-6411
				12.1 - 208	Q3 2023	55	
				12.1 - 208	Q2 2023	55	

Participant	Measurement Principle	Assay Identifier	Assay Measurement Range (nmol/L)	Certification Measurement Range (nmol/L)	Certification Date (active for 1 quarter)	Individual Samples Pass Rate (%)	Participant's Contact Information
<b>Mayo Medical Laboratories</b> Rochester, MN	LC/MS/MS <sup>+</sup>	Serum 25 hydroxyvitamin D2 and D3	15 - 740	17.4 - 162	Q1 2022	55	<p>Larry Dodge  <a href="mailto:Dodge.larry@mayo.edu">Dodge.larry@mayo.edu</a>  (507) 538-0400</p> <p>Eric Bro  <a href="mailto:Bro.eric@mayo.edu">Bro.eric@mayo.edu</a>  (507) 266-4348</p>
				17.4 - 162	Q4 2021	55	
				17.4 - 157	Q3 2021	50	
				17.4 - 135	Q2 2021	50	
				18.1 - 135	Q1 2021	52	
				16.1 - 149	Q4 2020	55	
				10.4 - 183	Q3 2020	62	
				10.4 - 183	Q2 2020	62	
				10.4 - 183	Q1 2020	67	
				10.4 - 183	Q4 2019	62	
<b>Shenzhen Mindray Bio-medical Electronics Co., Ltd. (Mindray)</b> Shenzhen, China	Chemiluminescence Immunoassay	Mindray 25-OH-Vitamin D Total	10 - 375	17.4 - 208	Q4 2023	67	Lai Wenquan <a href="mailto:laiwenquan@mindray.com">laiwenquan@mindray.com</a>

Participant	Measurement Principle	Assay Identifier	Assay Measurement Range (nmol/L)	Certification Measurement Range (nmol/L)	Certification Date (active for 1 quarter)	Individual Samples Pass Rate (%)	Participant's Contact Information
Nutrition Research Division Health Canada Ottawa, Canada	LC-MS/MS <sup>+</sup>	Serum Total 25OHD, 25OHD3, 25OHD2 and 3-epi-25OHD3	2.5 - 275	16.1 - 208	Q4 2023	55	Dr. Stephen Brooks <a href="mailto:steve.brooks@hc-sc.gc.ca">steve.brooks@hc-sc.gc.ca</a> (603) 957-0932  Kurtis Sarafin <a href="mailto:kurtis.sarafin@hc-sc.gc.ca">kurtis.sarafin@hc-sc.gc.ca</a> (613) 957-0921
				16.1 - 208	Q2 2023	57	
				16.7 - 162	Q1 2023	70	
				16.7 - 157	Q4 2022	68	
				16.7 - 149	Q3 2022	75	
				17.4 - 211	A2 2022	72	
				17.4 - 211	Q1 2022	68	
				17.4 - 211	Q4 2021	72	
				18.1 - 211	Q3 2021	78	
				13.1 - 183	Q2 2021	80	
				13.1 - 220	Q1 2021	72	
				13.1 - 220	Q4 2020	62	
				13.1 - 220	Q3 2020	50	
				16.1 - 220	Q2 2020	40	
16.7 - 140	Q1 2020	45					
19.7 - 140	Q4 2019	45					

Participant	Measurement Principle	Assay Identifier	Assay Measurement Range (nmol/L)	Certification Measurement Range (nmol/L)	Certification Date (active for 1 quarter)	Individual Samples Pass Rate (%)	Participant's Contact Information
<b>Nutritional Biomarkers Branch</b> <b>CDC</b> Atlanta, GA	LC-MS/MS†	#4027 routine method for serum 25OHD3, 25OHD2, C3-epimer-25OHD3	4 - 430	12.1 - 208	Q4 2023	80	Rosemary Schleicher, PhD <a href="mailto:RSchleicher@cdc.gov">RSchleicher@cdc.gov</a> (770) 488-4424
				12.1 - 208	Q3 2023	82	
				12.1 - 158	Q2 2023	85	
				12.1 - 139	Q1 2023	90	
				16.7 - 149	Q4 2022	90	
				16.7 - 158	Q3 2022	90	
				16.7 - 158	Q2 2022	90	
				17.4 - 158	Q1 2022	92	
				22.0 - 158	Q4 2021	82	
				17.4 - 157	Q3 2021	78	
				17.4 - 140	Q2 2021	80	
				13.1 - 140	Q1 2021	72	
				13.1 - 140	Q4 2020	80	
				13.1 - 140	Q3 2020	78	
				13.1 - 140	Q2 2020	70	
19.7 - 140	Q1 2020	65					
19.7 - 183	Q4 2019	70					



Participant	Measurement Principle	Assay Identifier	Assay Measurement Range (nmol/L)	Certification Measurement Range (nmol/L)	Certification Date (active for 1 quarter)	Individual Samples Pass Rate (%)	Participant's Contact Information
<b>Ortho Clinical Diagnostics</b> Pencoed, Wales, UK	CIA	Vitros	21.6 - 315	36.4 - 182	Q3 2023	15	Aled Yates <a href="mailto:aled.yates@orthoclinicaldiagnostics.com">aled.yates@orthoclinicaldiagnostics.com</a> (+44) 1656 778397
				36.4 - 162	Q1 2023	23	
				36.4 - 162	Q4 2022	23	
				36.4 - 197	Q3 2022	18	
				36.7 - 211	Q2 2022	13	
				36.7 - 211	Q1 2022	10	
				36.4 - 211	Q4 2021	21	
				36.4 - 211	Q3 2021	21	
				36.4 - 123	Q2 2021	20	
				27.5 - 134	Q1 2021	15	
				22.6 - 136	Q4 2020	15	
				10.4 - 135	Q2 2020	15	
				10.4 - 140	Q1 2020	18	
19.7 - 220	Q4 2019	22					
<b>Penn State University, Hershey Medical Center, Dept. of Pathology and Laboratory Medicine</b> Hershey, PA	LC/MS/MS†	25OHD2 and 25OHD3 (39D0657304)	9.98 - 399	16.7 - 147	Q4 2019	62	Yusheng Zhu, PhD, DABCC, FAACC <a href="mailto:yzhu@pennstatehealth.psu.edu">yzhu@pennstatehealth.psu.edu</a> (717) 731-5123
<b>PerkinElmer Health Sciences, Inc</b> Hayward, CA	ELISA	25 OH Vitamin D ELISA 80min	4.18 - 375	17.4 - 198	Q4 2019	28	Shawn You <a href="mailto:Shaofang.you@perkinelmer.com">Shaofang.you@perkinelmer.com</a> (650) 872-1800

Participant	Measurement Principle	Assay Identifier	Assay Measurement Range (nmol/L)	Certification Measurement Range (nmol/L)	Certification Date (active for 1 quarter)	Individual Samples Pass Rate (%)	Participant's Contact Information
<b>Quest Diagnostics Nichols Institute of Valencia, Inc</b> Valencia, California	LC/MS/MS+	Total 25-Hydroxyvitamin D (Vitamin D2/Vitamin D3)	10 - 1,280	17.4 - 162	Q1 2023	57	Amit Ghoshal PhD <a href="mailto:Amit.K.Ghoshal@QuestDiagnostics.com">Amit.K.Ghoshal@QuestDiagnostics.com</a> Quest Diagnostics Nichols Institute Valencia, Inc. (661) 799-6204
				16.1 - 182	Q1 2022	25	
				12.1 - 158	Q4 2021	42	
				12.1 - 158	Q3 2021	35	
				12.1 - 123	Q2 2021	42	
				12.1 - 220	Q1 2021	50	
				16.7 - 220	Q3 2020	55	
				16.7 - 220	Q2 2020	65	
				18.1 - 149	Q1 2020	62	
				18.1 - 140	Q4 2019	62	
<b>Roche Diagnostics GmbH</b> Penzberg, DE	ECL binding assay	Elecsys Vitamin D total II	7.38 - 885	16.1 - 182	Q3 2023	92	Christian Vogl <a href="mailto:christian.vogl.cv1@roche.com">christian.vogl.cv1@roche.com</a> +49 8856 60 19758
				16.7 - 208	Q3 2022	28	
				16.7 - 182	Q2 2022	20	
				16.1 - 183	Q1 2022	20	
				16.1 - 183	Q4 2021	20	
				22.0 - 183	Q1 2021	42	
				16.7 - 134	Q4 2020	40	
				13.1 - 136	Q3 2020	42	
				13.1 - 198	Q2 2020	38	
				13.1 - 198	Q1 2020	45	
13.1 - 198	Q4 2019	45					

Participant	Measurement Principle	Assay Identifier	Assay Measurement Range (nmol/L)	Certification Measurement Range (nmol/L)	Certification Date (active for 1 quarter)	Individual Samples Pass Rate (%)	Participant's Contact Information
Roche Diagnostics GmbH Penzberg, DE	ECL binding assay	Elecsys Vitamin D total III	7.5 - 300	12.1 - 182	Q4 2023	22	Christian Vogl <a href="mailto:christian.vogl.cv1@roche.com">christian.vogl.cv1@roche.com</a> +49 8856 60 19758
				12.1 - 182	Q3 2023	22	
				12.1 - 158	Q2 2023	42	
				17.4 - 158	Q1 2023	40	
				18.1 - 158	Q4 2022	40	
				18.1 - 162	Q3 2022	38	
				17.4 - 208	Q2 2022	28	
				17.4 - 208	Q1 2022	35	
				17.4 - 208	Q4 2021	32	
				12.1 - 208	Q3 2021	22	
				12.1 - 149	Q2 2021	15	
				12.1 - 149	Q4 2020	25	
Roche Diagnostics GmbH Penzberg, DE	LC/MS/MS <sup>+</sup>	25-Hydroxyvitamin D3 and 25-Hydroxyvitamin D2 in serum	D3: 3.75 - 450 D2: 3.64 - 437	16.1 - 152	Q4 2023	90	Judith Taibon <a href="mailto:judith.taibon@roche.com">judith.taibon@roche.com</a> 0049 8856 60 12941
				16.1 - 182	Q3 2023	92	
				12.1 - 182	Q2 2023	92	
				12.1 - 182	Q1 2023	90	
				12.1 - 182	Q4 2022	90	
				12.1 - 162	Q3 2022	80	
				17.4 - 182	Q2 2022	70	
				18.1 - 182	Q1 2022	68	
				21.5 - 182	Q4 2021	68	
				16.1 - 182	Q3 2021	72	
				16.1 - 134	Q2 2021	78	
				16.1 - 134	Q1 2021	65	

Participant	Measurement Principle	Assay Identifier	Assay Measurement Range (nmol/L)	Certification Measurement Range (nmol/L)	Certification Date (active for 1 quarter)	Individual Samples Pass Rate (%)	Participant's Contact Information
<b>Roche Diagnostics GmbH</b> Munich, Germany	LC/MS/MS	Total 25 – hydroxyvitamin D in serum	6.94 – 520.5	16.1 - 182	Q4 2023	80	Sandra Lackner <a href="mailto:muc.testsidestudy@roche.com">muc.testsidestudy@roche.com</a>
<b>SCIEX Diagnostics</b> Framingham, MA	LC/MS/MS†	Total 25-Hydroxyvitamin D (Vitamin D2/Vitamin D3)	10 - 800	12.1 - 183 19.7 - 183	Q1 2020 Q4 2019	55 52	Theresa Irvine <a href="mailto:Theresa.Irvine@sciex.com">Theresa.Irvine@sciex.com</a> (508) 383-7409
<b>Siemens Healthcare Diagnostics</b> Tarrytown, NY	Chemiluminescence Immunoassay	ADVIA Centaur® Vitamin D Total assay	10.5 - 375	16.1 - 162 22.2 - 162 12.1 - 162 12.1 - 162 12.1 - 208 16.1 - 208 16.1 - 208 17.4 - 197 17.4 - 197 13.1 - 135 13.1 - 149 13.1 - 149 13.1 - 149 16.1 - 149 16.1 - 147 17.4 - 183	Q4 2023 Q3 2023 Q2 2023 Q1 2023 Q4 2022 Q2 2022 Q1 2022 Q4 2021 Q3 2021 Q2 2021 Q1 2021 Q4 2020 Q3 2020 Q2 2020 Q1 2020 Q4 2019	20 28 28 28 25 25 23 26 15 18 18 18 20 15 15 22	Neil Parker <a href="mailto:neil.np.parker@siemens-healthineers.com">neil.np.parker@siemens-healthineers.com</a>

Participant	Measurement Principle	Assay Identifier	Assay Measurement Range (nmol/L)	Certification Measurement Range (nmol/L)	Certification Date (active for 1 quarter)	Individual Samples Pass Rate (%)	Participant's Contact Information
Siemens Healthcare Diagnostics Tarrytown, NY	Chemiluminescence Immunoassay	Atellica® IM Vitamin D Total assay	10.5 - 375	16.1 - 158	Q4 2023	33	Neil Parker <a href="mailto:neil.np.parker@siemens-healthineers.com">neil.np.parker@siemens-healthineers.com</a>
				16.1 - 158	Q3 2023	32	
				12.1 - 158	Q2 2023	38	
				12.1 - 158	Q1 2023	35	
				12.1 - 208	Q4 2022	30	
				12.1 - 208	Q3 2022	30	
				17.4 - 208	Q2 2022	32	
				12.1 - 208	Q1 2022	38	
				12.1 - 162	Q4 2021	38	
				12.1 - 162	Q3 2021	36	
				12.1 - 132	Q2 2021	18	
				12.1 - 132	Q1 2021	28	
				12.1 - 132	Q4 2020	31	
				12.1 - 134	Q3 2020	32	
				12.1 - 220	Q2 2020	38	
16.7 - 220	Q1 2020	35					
19.7 - 220	Q4 2019	30					
Siemens Healthcare Diagnostics Tarrytown, NY	Immunoassay	Atellica® CI Vitamin D Total assay	10.5 - 375	12.1 - 208	Q4 2023	18	Neil Parker <a href="mailto:neil.np.parker@siemens-healthineers.com">neil.np.parker@siemens-healthineers.com</a>

Participant	Measurement Principle	Assay Identifier	Assay Measurement Range (nmol/L)	Certification Measurement Range (nmol/L)	Certification Date (active for 1 quarter)	Individual Samples Pass Rate (%)	Participant's Contact Information
Siemens Healthcare Diagnostics Glasgow, DE	Chemiluminescence Immunoassay	Dimension®ExL™ Vitamin D Total assay	12.5 - 375	18.1 - 182	Q4 2023	38	<p>Dr. Tie Wei  <a href="mailto:tie.q.wei@siemens-healthineers.com">tie.q.wei@siemens-healthineers.com</a>  (302) 631-6929</p> <p>Jie Li  <a href="mailto:jie.l.li@siemens-healthineers.com">jie.l.li@siemens-healthineers.com</a>  (302) 631-7708</p>
				22.2 - 208	Q3 2023	35	
				22.0 - 208	Q2 2023	44	
				16.7 - 208	Q1 2023	44	
				16.7 - 208	Q4 2022	44	
				16.7 - 157	Q3 2022	41	
				16.7 - 162	Q2 2022	40	
				22.2 - 162	Q1 2022	50	
				18.1 - 162	Q4 2021	45	
				18.1 - 162	Q3 2021	48	
				18.1 - 140	Q2 2021	50	
				16.7 - 140	Q4 2020	38	
				12.1 - 140	Q3 2020	38	
				12.1 - 175	Q2 2020	35	
				10.4 - 183	Q1 2020	38	
10.4 - 183	Q4 2019	32					
SNIBE Shenzhen, China	LC/MS/MS†	25-OH Vitamin D	12 - 250	12.1-149	Q2 2023	65	Huijun Cui <a href="mailto:huijun.cui@snibe.cn">huijun.cui@snibe.cn</a> 0086 18171423440
SNIBE Shenzhen, China	Chemiluminescence Immunoassay	Maglumi 25-OH Vitamin D	7.5 - 375	16.7 - 208	Q4 2023	56	Jinyun Yuan <a href="mailto:jinyun.yuan@snibe.cn">jinyun.yuan@snibe.cn</a>
				12.1 - 149	Q4 2022	32	Huijun Cui <a href="mailto:huijun.cui@snibe.cn">huijun.cui@snibe.cn</a>
				22.0 - 230	Q4 2019	28	

Participant	Measurement Principle	Assay Identifier	Assay Measurement Range (nmol/L)	Certification Measurement Range (nmol/L)	Certification Date (active for 1 quarter)	Individual Samples Pass Rate (%)	Participant's Contact Information
Thermo Fisher Scientific Vantaa, Finland	LC/MS/MS <sup>†</sup>	Thermo Scientific™ Cascadion™ SM 25-Hydroxy Vitamin D	8.24 - 649.3	16.1 - 149	Q3 2022	80	Sirpa Riistama-Laari <a href="mailto:Sirpa.riistama-laari@thermofisher.com">Sirpa.riistama-laari@thermofisher.com</a> +358 103292215
				16.1 - 157	Q2 2022	85	
				16.1 - 157	Q1 2022	82	
				18.1 - 157	Q4 2021	82	
				18.1 - 157	Q3 2021	82	
				18.1 - 149	Q2 2021	80	
				18.1 - 149	Q1 2021	80	
				13.1 - 135	Q4 2020	75	
				13.1 - 147	Q3 2020	78	
				13.1 - 147	Q2 2020	75	
				13.1 - 220	Q1 2020	75	
16.1 - 220	Q4 2019	80					
Tosoh Corporation Tokyo, Japan	Enzyme Immunoassay	ST AIA-PACK 25-OH Vitamin D	10 - 375	12.1 - 208	Q2 2023	18	Dr. Sachi-yuki Hasegawa <a href="mailto:sachi-yuki-hasegawa-de@tosoh.co.jp">sachi-yuki-hasegawa-de@tosoh.co.jp</a>  Hisao Tsukamoto <a href="mailto:hisao-tsukamoto-rn@tosoh.co.jp">hisao-tsukamoto-rn@tosoh.co.jp</a> +81-467-76-5384
				16.1 - 162	Q1 2023	13	
				16.1 - 149	Q4 2022	15	
				16.1 - 182	Q3 2022	12	
				12.1 - 181	Q3 2021	15	
				12.1 - 128	Q2 2021	22	
				12.1 - 149	Q1 2021	20	
				16.7 - 149	Q4 2020	20	
				16.7 - 183	Q3 2020	18	
				16.7 - 198	Q2 2020	12	
				19.7 - 198	Q1 2020	20	
19.7 - 198	Q4 2019	28					

Participant	Measurement Principle	Assay Identifier	Assay Measurement Range (nmol/L)	Certification Measurement Range (nmol/L)	Certification Date (active for 1 quarter)	Individual Samples Pass Rate (%)	Participant's Contact Information
University Hospital – Biochemistry Laboratory Grenoble, France	LC/MS/MS†	LC/MS/MS† assay 2D LC METHODE	4 - 360	13.1 - 183	Q1 2020	72	Anne Sophie Gauchez <a href="mailto:ASGauchez@chu-grenoble.fr">ASGauchez@chu-grenoble.fr</a> <a href="mailto:SGazzah@chu-grenoble.fr">SGazzah@chu-grenoble.fr</a>
University of Minnesota, Molecular Epidemiology and Biomarker Research Laboratory (MEBRL) Minneapolis, MN	LC/MS/MS†	25-Hydroxy Vitamin D2 and D3	5.3 - 1,240	12.1 - 197 16.1 - 197 16.1 - 197 16.1 - 149 13.1 - 136 12.1 - 140 12.1 - 183	Q2 2022 Q4 2021 Q3 2021 Q2 2021 Q1 2021 Q2 2020 Q4 2019	40 52 52 60 55 42 45	Dr. Myron Gross <a href="mailto:gross001@umn.edu">gross001@umn.edu</a> (612) 624-5417
Waters Technologies Wexford, Ireland	LC/MS/MS†	Total 25-Hydroxyvitamin D (Vitamin D2/Vitamin D3)	20 - 750	12.1 - 208 22.0 - 162 27.5 - 211 22.2 - 211 22.2 - 211 22.0 - 211 22.0 - 140 13.1 - 140 13.1 - 140 13.1 - 140	Q3 2023 Q3 2022 Q2 2022 Q1 2022 Q4 2021 Q3 2021 Q2 2021 Q1 2021 Q4 2020 Q3 2020	85 50 57 60 57 57 65 60 60 55	Norma Breen <a href="mailto:Norma_Breen@waters.com">Norma_Breen@waters.com</a> 00353 (0)53-9160514

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

\* Certification is only provided for serum. No assessment was performed in plasma.