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a division of
Harvard Bioscience, Inc.

Certificate of Analysis

Name: Physiological Standard, 2.5 mM

Item: 80-6002-80 Lot Issue Date: 22-May 2019

Lot: 0006453485 Expiration Date: 30-Jun- 2022

This Reference Material was manufactured and verified on behalf of Biochrom Ltd by a Registered Quality Control laboratory in accordance with the ISO Standards listed below.

The true value and the uncertainty value at the 95% confidence level for each analyte are listed in the table. These were calculated from the gravimetric measurements made during the manufacturing process. All Balances were calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1 and ISO 9001. Calibrated Class A glassware was used in the manufacturing of these standards.

Analyte	CAS#	True Value	True Value
O-Phospho-D,L-serine	017885-08-4	0.463 ± 0.002 g/L	**2.50mM**
Taurine	000107-35-7	0.313 ± 0.002 g/L	**2.50 mM**
O-Phosphorylethanolamine	001071-23-4	0.354 ± 0.002 g/L	**2.51 mM**
Urea	000057-13-6	1.51 ± 0.01 g/L	**25.1 mM**
L-Aspartic acid	000056-84-8	0.334 ± 0.002 g/L	**2.51 mM**
Hydroxyproline	000051-35-4	0.329 ± 0.002 g/L	**2.51 mM**
L-Threonine	000072-19-5	0.298 ± 0.001 g/L	**2.50 mM**
L-Serine	000056-45-1	0.264 ± 0.001 g/L	**2.51 mM**
L-Asparagine	000070-47-3	0.332 ± 0.002 g/L	**2.51 mM**
L-Glutamic acid	000056-86-0	0.370 ± 0.002 g/L	**2.52 mM**
Sarcosine	000107-97-1	0.224 ± 0.001 g/L	**2.51 mM**
α-Aminoadipic acid	001118-90-7	0.405 ± 0.002 g/L	**2.51 mM**
L-Proline	000147-85-3	0.289 ± 0.001 g/L	**2.51 mM**
Glycine	000056-40-6	0.188 ± 0.001 g/L	**2.50 mM**
L-Alanine	000056-41-7	0.223 ± 0.001 g/L	**2.50 mM**
L-Citrulline	000372-75-8	0.438 ± 0.002 g/L	**2.50 mM**
α-Amino-n-butyric acid	001492-24-6	0.259 ± 0.001 g/L	**2.51 mM**
L-Valine	000072-18-4	0.294 ± 0.001 g/L	**2.51 mM**
L-Cystine	000056-89-3	0.302 ± 0.002 g/L	**1.26 mM**
L-Methionine	000063-68-3	0.373 ± 0.002 g/L	**2.50 mM**
L-Isoleucine	000073-32-5	0.328 ± 0.002 g/L	**2.50 mM**
L-Leucine	000061-90-5	0.329 ± 0.002 g/L	**2.51 mM**

L-Tyrosine	000060-18-4	0.454 ± 0.002 g/L	**2.51 mM**
β-Alanine	000107-95-9	0.224 ± 0.001 g/L	**2.51 mM**
L-Phenylalanine	000063-91-2	0.414 ± 0.002 g/L	**2.51 mM**
L-Homocystine	000626-72-2	0.335 ± 0.002 g/L	**1.25 mM**
β-Aminoisobutyric acid	000144-90-1	0.257 ± 0.001 g/L	**2.49 mM**
γ-Amino-n-butyric acid	000056-12-2	0.258 ± 0.001 g/L	**2.50 mM**
Ethanolamine	000141-43-5	0.153 ± 0.001 g/L	**2.50 mM**
Ammonium chloride	012125-02-9	0.134 ± 0.001 g/L	**2.51 mM**
D,L-5-Hydroxy-L-Lysine hydrochloride	013204-98-3	0.495 ± 0.002 g/L	**2.49 mM**
L-Ornithine monohydrochloride	003184-13-2	0.423 ± 0.002 g/L	**2.51 mM**
L-Lysine	000056-87-1	0.366 ± 0.002 g/L	**2.50 mM**
1-Methylhistidine	000332-80-9	0.424 ± 0.002 g/L	**2.51 mM**
L-Histidine	000071-00-1	0.389 ± 0.002 g/L	**2.51 mM**
L-Tryptophan	000073-22-3	0.513 ± 0.003 g/L	**2.51 mM**
3-Methylhistidine	000368-16-1	0.424 ± 0.002 g/L	**2.51 mM**
L-Anserine nitrate salt (as L-anserine)	010030-52-1	0.758 ± 0.004 g/L	**2.50 mM**
L-Carnosine	000305-84-0	0.567 ± 0.003 g/L	**2.51 mM**
L-Arginine	000074-79-3	0.437 ± 0.002 g/L	**2.51 mM**
L-Alloisoleucine	001509-34-8	0.330 ± 0.002 g/L	**2.52 mM**

Matrix: 0.1 N Hydrochloric Acid

Quality Certifications.

This Reference Material was prepared by Agilent Technologies Inc., RI, USA, in compliance with the following ISO Standards:

- ISO 9001 Quality Management Systems Requirements (TUV USA Cert. No. 56 100 18560026)
- ISO Guide 34 General Requirements for the Competence of Reference Material Producers (ANAB Cert. No. AR-1936)
- ISO 17025 General Requirements for the Competence of Testing and Calibration Laboratories (ANAB Cert. No. AT-1937)

M Bourgeois

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