PICKERING LABORATORIES

CERTIFICATE OF ANALYSIS

Amino Acids Calibration Standard (Without Norleucine and α-Amino-β-Guanidinopropionic acid) For Lithium Systems 1700-0170

Product: Amino Acids Calibration Standard (Without Norleucine and α-Amino-β-Guanidinopropionic acid) for Native samples
Part Number: 1700-0170
Lot Number: 209031
Production Date: 15 Sep 2012
Expiration Date: 15 Sep 2015

Primary Application: This calibration standard is a solution of 41 amino acids and ammonia in 0.27 N Lithium citrate buffer, pH 2.36. This calibration standard is intended to be used for calibration of chromatographic instrumentation for determination of amino acids.
Acceptance Criteria: The concentrations for 41 amino acids and ammonia are within ± 4% of those stated below. These values are based on the results of HPLC analysis using certified NIST amino acids standard and Sigma amino acids standard.

Compound	Concentrations µM/mL
β-Alanine	0.25
L-Alanine	0.25
D,L-α-amino-adipic acid	0.25
γ-Amino-butyric acid	0.25
α-Amino-*n*-butyric acid	0.25
D,L-β-Amino-*i*-butyric acid	0.25
L-Ammonia	0.25
L-Anserine	0.25
L-Arginine	0.25
L-Asparagine	0.25
L-Aspartic acid	0.25
L-Carnosine	0.25
L-Citrulline	0.25
Creatinine	0.25
L-Cystathionine	0.25
L-Cystine	0.25
Ethanolamine	0.25
L-Glutamic acid	0.25
L-Glycine	0.25
L-Histidine	0.25

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L-Homocystine	0.25
Compound	**Concentrations µM/mL**
D,L&allo-Hydroxylysine	0.25
4-trans-L-Hydroxyproline	0.25
L-Isoleucine	0.25
L-Leucine	0.25
L-Lysine	0.25
L-Methionine	0.25
1-Methyl-L-histidine	0.25
3-Methyl-L-histidine	0.25
L-Ornithine	0.25
L-Phenylalanine	0.25
o-Phosphoethanolamine	0.25
o-Phospho-L-serine	0.25
L-Proline	0.25
Sarcosine	0.25
L-Serine	0.25
Taurine	0.25
L-Threonine	0.25
L-Tryptophan	0.25
L-Tyrosine	0.25
Urea	0.25
L-Valine	0.25

Analysis Certified by: Jim Murphy **Date:** 15 Oct 2012

VP Operations

Title

Rev. 2, 11/28/2011

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