



CERTIFICATE OF ANALYSIS

Sodium Calibration Standard for Protein Hydrolysate 012506H

Product: Sodium Calibration Standard for Protein Hydrolysate

Part Number: 012506H

Lot Number: 309017

Production Date: 24 Sep 2013

Expiration Date: 24 Sep 2016

Primary Application: This calibration standard is a solution of 18 amino acids and ammonia in 0.27 N sodium citrate buffer, pH 2.2. This calibration standard is intended to be used for calibration of chromatographic instrumentation for determination of amino acids.

Acceptance Criteria: The concentrations for 18 amino acids and ammonia are within $\pm 4\%$ 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 $\mu\text{M}/\text{mL}$
L-Alanine	0.25
Ammonia	0.25
L-Arginine	0.25
L-Aspartic acid	0.25
L-Cystine	0.25
L-Glutamic acid	0.25
Glycine	0.25
L-Histidine	0.25
L-Isoleucine	0.25
L-Leucine	0.25
L-Lysine	0.25
L-Methionine	0.25
L-Phenylalanine	0.25
L-Proline	0.25
L-Serine	0.25
L-Threonine	0.25
L-Tryptophan	0.25
L-Tyrosine	0.25
L-Valine	0.25

Analysis Certified by:

Jim Murphy

President

Title

Date:

06 Nov 2013

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