COVANCE

Report Number:	**1426010-0**
Report Date:	**15-Feb-2016**
Report Status:	**Final**

Certificate of Analysis

ERC, Inc

Sample Name:	**Proteinxyme (Vanilla)**	**Covance Sample:**	**4708792**
Project ID	ERC-20160206-0001	**Receipt Date**	04-Feb-2016
PO Number	9225	**Receipt Condition**	Ambient temperature
Lot Number	153242	**Login Date**	06-Feb-2016
Sample Serving Size	26 g	**Storage Condition**	Ambient temperature
		Online Order	20

Analysis	**Result**
Amino Acids	
Aspartic Acid	1.36 g/Serving Size
Threonine	0.445 g/Serving Size
Serine	0.619 g/Serving Size
Glutamic Acid	2.20 g/Serving Size
Proline	0.543 g/Serving Size
Glycine	0.572 g/Serving Size
Alanine	0.598 g/Serving Size
Valine	0.650 g/Serving Size
Isoleucine	0.590 g/Serving Size
Leucine	1.05 g/Serving Size
Tyrosine	0.497 g/Serving Size
Phenylalanine	0.676 g/Serving Size
Lysine	0.754 g/Serving Size
Histidine	0.289 g/Serving Size
Arginine	1.30 g/Serving Size
Cystine	0.136 g/Serving Size
Methionine	0.202 g/Serving Size
Tryptophan	
Tryptophan	0.158 g/Serving Size

Method References	**Testing Location**
Amino Acids (TAALC_S:17)	**Covance Laboratories - Madison**

R. Schuster, "Determination of Amino Acids in Biological, Pharmaceutical, Plant and Food Samples by Automated Precolumn Derivatization and HPLC", Journal of Chromatography, 1988, 431, 271-284.

Henderson, J.W., Ricker, R.D. Bidlingmeyer, B.A., Woodward, C., "Rapid, Accurate, Sensitive, and Reproducible HPLC Analysis of Amino Acids, Amino Acid Analysis Using Zorbax Eclipse-AAA columns and the Agilent 1100 HPLC," Agilent Publication, 2000. Barkholt and Jensen, "Amino Acid Analysis: Determination of Cysteine plus Half-Cystine in Proteins after Hydrochloric Acid Hydrolysis with a Disulfide Compound as Additive", Analytical Biochemistry, 177, 318-322 (1989).

Henderson, J.W., Brooks, A., "Improved Amino Acid Methods using Agilent Zorbax Eclipse Plus C18 Columns for a Variety of Agilent LC Instrumentation and Separation Goals," Agilent Application Note 5990-4547 (2010).

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Method References	**Testing Location**
Tryptophan (TRPLC_S:13)	**Covance Laboratories - Madison**

Official Methods of Analysis of AOAC INTERNATIONAL, AOAC International Gaithersburg, MD, USA, Official Method 988.15.

R. Schuster, "Determination of Amino Acids in Biological, Pharmaceutical, Plant and Food Samples by Automated Precolumn Derivatization and HPLC", Journal of Chromatography. 1988, 431, 271-284.

Henderson, J.W., Ricker, R.D. Bidlingmeyer, B.A., Woodward, C., "Rapid, Accurate, Sensitive, and Reproducible HPLC Analysis of Amino Acids, Amino Acid Analysis Using Zorbax Eclipse-AAA columns and the Agilent 1100 HPLC," Agilent Publication, 2000.

Henderson, J.W., Brooks, A., "Improved Amino Acid Methods using Agilent Zorbax Eclipse Plus C18 Columns for a Variety of Agilent LC Instrumentation and Separation Goals," Agilent Application Note 5990-4547 (2010).

Testing Location(s)	**Released on Behalf of Covance by**
Covance Laboratories - Madison	**Lori Ross - Associate Director**

Covance Laboratories Inc.
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Madison WI 53704
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