SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

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CHEMICAL

Valid to: July 31, 2019 Certificate Number: 2918.02

In recognition of the successful completion of the A2LA evaluation process (including an assessment of the laboratory's compliance with the A2LA Food Testing Program Requirements, containing the 2015 "*AOAC International Guidelines for Laboratories Performing Microbiological and Chemical Analyses of Food, Dietary Supplements, and Pharmaceuticals*"), accreditation is granted to this laboratory to perform the following tests on food and dietary supplements:

Test Method	**Test/Technology**	**Test Method Reference(s)**
MP-TRPLC	Amino Acid – Total Tryptophan	AOAC 988.15 (Modified) R. Schuster, "Determination of Amino Acids in Biological, Pharmaceutical, Plant and Food Samples by Automated Precolumn Derivatization and HPLC", Journal of Chromatography 431. 271-284 (1988) (Modified) 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) (Modified) Henderson, J.W., Books, 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)
MP-ICP_MS	As, Cd, Pb, Hg, Sb, Sn and Ni by ICPMS	AOAC 2011.19, 993.14 (Modified)
MP-ASHM	Ash	AOAC 923.03 (Modified)
MP-BLCMS	B-Vitamins by LC/MS/MS	Internally Developed Method
MP-AN_CAR	Beta Carotene and Lycopene by HPLC	Client Supplied Method

Test Method	**Test/Technology**	**Test Method Reference(s)**
MP-BCLC-MA CAR1	Beta Carotene in Infant Formula, Crops, and High Fat Content Food (SAP) by HPLC	AOAC 2005.07 (Modified) Quakenbush, F.W., Reverse Phase HPLC Separation of cis- and trans-Carotenoids and its Application to Beta Carotenes in Food Materials," Journal of Liquid Chromatography, 10:643-653 (1987) (Modified)
MP-BIOM-MA	Biotin (Total Biotin/Free Biotin) by the Microbiological Method	Scheiner, J. and DeRitter, "Biotin Content of Feedstuffs", Journal of Agriculture Chemistry, 23(6): 1157-1162 (1975) (Modified) Wright, L.D., Skeggs, H.R., "Determination of Biotin with *Lactobacillus arabinosis*," Procedures of the Society of Experimental Biology and Medicine, 56:95-98 (1944) (Modified) Free Biotin, Section C-13, Methods of Analysis for Infant Formulas, Infant Formula Council, (1985) (Modified) Scheiner, J., "Extraction of Added Biotin From Animal Feed Premix, "Journal of the AOAC, 49(4):882-883, (1996) (Modified)
MP-MCPD_TOT	Bound Monochloropropanediol (MCPD) and Bound 2,3-Epoxy-1-Propanol (Glycidol) in Edible Oils and Fats by GC/MS/MS	AOCS Official Method Cd 29b-13 (2013), (modified)
MP-ICP	Ca, Cu, Fe, K. Mg, Mn, Na, P, and Zn by ICP	AOAC 984.27, 985.01, 2011.14 (Modified)
MP-CALC-MA	Calories	Code of Federal Regulations, Title 21, Part 101.9, pp.24-25
MP-CHO-MA	Carbohydrates	United States Department of Agriculture, "Energy Value of Foods, "Agriculture Handbook No. 74. Pp 2-11 (1973)
MP-SALT	Chloride/Salt	AOAC 963.05, 971.27, 986.26 (Modified)
MP-CHOK	Cholesterol	AOAC 994.10 (Modified)
MP-COL4	Choline (Total)	AOAC 999.14 (Modified)
MP-SEIF	Cr, Mo, Se by ICP-MS	AOAC 2011.19
MP-SEMSPLUS	Cr, Mo, Se by ICP-MS	AOAC 2011.19

Test Method	Test/Technology	Test Method Reference(s)
MP-CFIB	Crude Fiber	AOAC 962.09 (Modified)
MP-B12F-MA	Cyanocobalamin (Vitamin B12) by the Microbiological Method	AOAC 952.20, 960.46 (Modified) Methods of Analysis for Infant Formulas, Infant Formula Council, Atlanta, Georgia, Section C-2, (1985)
MP-SPGP	Density	NIST Handbook 133 – Checking the Net Contents of Packaged Goods, 2015 Edition (Modified)
MP-INOSAOAC	Determination of Free Myo-Inositol by HPLC, Column Switching and Pulsed Amperometry	AOAC 2011.18
MP-FAT_AH	Fat by Acid Hydrolysis	AOAC 922.06, 954.02, 925.32, 933.05 (Modified)
MP-FAME	Fatty Acid Profile	AOAC 996.06; AOCS Ce 1h-05, Ce 2-66, Ce 2b-11, and Ce 1j-07
MP-FAT_BH	Fat by Alkaline Hydrolysis	AOAC 932.06, 989.25, 945.48B (Modified)
MP-FOAN-MA	Folic Acid by the Microbiological Method	AOAC 992.05, 960.46 (Modified) “Methods of Analysis of Infant Formulas,” Infant Formula Council, Atlanta, GA, Section C-2 (1985) (Modified)
MP-CARCOL	Free and Total Carnitine and Choline by LC/MS/MS in Infant Formula and Adult Nutritionals	AOAC 2015.10
MP-FOSR	Fructooligosaccharides with HPAEC and PAD	AOAC 997.08 (Modified) Stöber, P., Bénet, S., and Hischenhuber, C., “Simplified Enzymatic High-Performance Anion Exchange Chromatographic Determination of Total Fructans in Food and Pet Food–Limitations and Measurement Uncertainty,” Journal of Agricultural and Food Chemistry,52 (8):2137-2146 (2004) (Modified)
MP-GOSINT	Galactooligosacchrides	Internally Developed Method
MP-GOSRAW	Galactooligosacchrides	AOAC 2001.02 (Modified) Dionex/Thermo Application Note 155: Determination of Trans-Galactooligosaccharides in Foods by AOAC Method 2001.02 (2003) (Modified)

Test Method	Test/Technology	Test Method Reference(s)
MP-AN_HMB	3-Hydroxy-3-methylbutyric Acid by HPLC	Client Supplied Method
MP-INOS_IC	Myo-Inositol (Total Inositol/Free Inositol) by HPAEC with PAD	AOAC 2012.12 Ellingson, D.; Pritchard, T.; Foy, P.; King, K.; Mitchell, B.; Austad, J.; Winters, D.; Sullivan, D. "Analysis of Free and Total Myo-Inositol in Foods, Feeds, and Infant Formula by High-Performance Anion Exchange Chromatography with Pulsed Amperometric Detection, Including a Novel Total Extraction Using Microwave-Assisted Acid Hydrolysis and Enzymatic Treatment" Journal of AOAC INTERNATIONAL, 95(5):1469-1478 (2012)
MP-ISDF	Insoluble, Soluble, and Total Dietary Fiber (Lee)	AOAC 991.43 (Modified)
MP-IODICPMS	Iodine by Inductively Coupled Plasma-Mass Spectrometry	AOAC 2012.15
MP-AN_LUT	Lutein Determination by HPLC	Client Supplied Method
MP-LUTE_IF	Lutein in Infant Formula and Adult Nutritionals by HPLC	Internally Developed Method
MP-MEL_ANLG	Melamine and Analogs by UHPLC/MS/MS	Internally Developed Method
MP-MEL_CYA	Melamine and Cyanuric Acid by UHPLC/MS/MS	Client Supplied Method
MP-M100_T100	Moisture	AOAC 925.09, 926.08 (Modified)
MP-M70_T70	Moisture	AOAC 934.06 (Modified)
MP-MCPD_GE	Monochloropropanediols (MCPD), MCPD Fatty Acid Esters and Glycidyl Fatty Acid Esters in Infant Formula and Related Matrices by GC-MS/MS	Internally Developed method

Test Method	**Test/Technology**	**Test Method Reference(s)**
MP-NIAP-MA	Niacin/Niacinamide (Nicotinic Acid/Nicotinamide) by the Microbiological Method	AOAC 944.13, 960.46 (Modified)
MP-NO2NO3	Nitrite and Nitrate by Simultaneous Post Column Reduction and Derivatization Utilizing Ion Exchange Chromatography and Visible Spectroscopy	Casanova, J., Gross, L., McMullen, S., and Schenck, F. "Use of Griess Reagent Containing Vanadium (III) for Post-Column Derivatization and Simultaneous Determination of Nitrite and Nitrate in Baby Food" J. AOAC Int., 89(2): 447-451 (2006) (Modified) Gapper, L., Fong, B., Otter, D., Indyk, H., and Woollard, D. "Determination of Nitrite and Nitrate in Dairy Product by Ion Exchange LC with Spectrophotometric Detection," International Dairy Journal 14: 881-887 (2004) (Modified) George, S., Ofitserova, M., and Pickering, M., "Simultaneous Determination of Nitrite and Nitrate in Processed Foods, "Method Abstract for Post-Column Liquid Chromatography 123, Pickering Laboratories, Inc. (2011) http://www.pickeringlabs.com (accessed 06 Mar 2013).
MP-NUTD	Nucleotides by HPLC	Internally Developed Method
MP-PS05	Pesticides (Over 500 Analytes by GC/MS/MS and LC/MS/MS)	AOAC 2007.01 CEN Standard Method EN 15662: Food of plant origin – Determination of pesticide residues using GC-MS and/or LC-MS/MS following acetonitrile extraction/partitioning and clean-up by dispersive SPE – QuEChERS method.
MP-PHAL	pH (Hydrogen-Ion Activity)	AOAC 981.12 (Modified); FCC <Appendix II> (Modified); USP<791> (Modified)
MP-DGEN	Protein Dumas Method	AOAC 968.06, 992.15 (Modified)
MP-PGEN	Protein Kjeldahl Method	AOAC 979.09 (Modified) Official Methods and Recommended Practices of the American Oil Chemists' Society, Champaign, IL Official Methods Ac 4-91 (2011) (Modified)

Test Method	Test/Technology	Test Method Reference(s)
MP-MYCO_IF	Regulated Mycotoxins in Infant Formulas and Infant Cereals by UHPLC/MS/MS	Varga, E., Glauner, T., Koppen, R., Mayer, K., Sulyok, M., Schuhmacher, R., Krska, R. and Berthiller, F., "Stable isotope dilution assay for the accurate determination of mycotoxins in maize by UHPLC-MS/MS," Analytical and Bioanalytical Chemistry, 402:2675-2686 (2012) (Modified)
MP-MYCO_REG	Regulated Mycotoxins by UHPLC/MS/MS	Varga, E., Glauner, T., Koppen, R., Mayer, K., Sulyok, M., Schuhmacher, R., Krska, R. and Berthiller, F., table isotope dilution assay for the accurate determination of Mycotoxins in maize by UHPLC-MS/MS," Analytical and Bioanalytical Chemistry, 402:2675-2686 (2012)
MP-B2FV-MA	Riboflavin by the Microbiological Method	AOAC 940.33, 960.46 (Modified)
MP-SUGN	Sugar by GC	Brobst, K.M., "Gas-Liquid Chromatography of Trimethylsilyl Derivatives," Methods in Carbohydrate Chemistry, 6:3-8, Academic Press: New York, New York (1972) (Modified) Mason, B. S., and Stover, H. T., "A Gas Chromatographic Method for the Determination of Sugars in Foods," Journal of Agriculture and Food Chemistry 19(3):551-554 (1971) (Modified)
MP-SGIC_2	Sugar Profile by HPAEC with PAD	Ellingson, D., Anderson, P., Berg, D., "Analytical Method for Sugar Profile in Pet Food and Animal Feeds by High-Performance Anion-Exchange Chromatography with Pulsed Amperometric Detection", Journal of AOAC INTERNATIONAL 99 (2): 342-352 (2016) (modified).

Test Method	Test/Technology	Test Method Reference(s)
MP-TAUR_LC	Taurine by HPLC	AOAC 999.12 (Modified) R. Schuster, "Determination of Amino Acids in Biological, Pharmaceutical, Plant and Food Samples by Automated Precolumn Derivitization and HPLC", Journal of Chromatography. 1988, 431,271-284 (Modified) 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) (Modified) Henderson, J.W., Books, 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)
MP-BIDE-MA	Thiamine by the Microbiological Method	AOAC 942.23, 953.17, 957.17 (Modified)
MP-B1B2B6	Thiamine, Riboflavin, Pyridoxine by HPLC	Client Supplied Method
MP-TDF-MA	Total Dietary Fiber (Prosky)	AOAC 985.02(Modified)
MP-TAALC	Total Amino Acid by HPLC	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) R. Schuster, "Determination of Amino Acids in Biological, Pharmaceutical, Plant and Food Samples by Automated Precolumn Derivatization and HPLC", Journal of Chromatography. 431, 271-284 (1988) 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., Books, 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)

Test Method	Test/Technology	Test Method Reference(s)
MP-NONYLPH	Two Nonylphenol Isomers by LC-MS/MS	Internally Developed Method
MP-VITAE_IF	Vitamin A and E by HPLC	AOAC 992.06, 992.03 (Modified)
MP-AN_VITAE	Vitamin A and E by HPLC	Client Supplied Method
MP-VALC	Vitamin A by UHPLC/HPLC	AOAC 992.04, 992.06, 2001.13 (Modified)
MP-PANN	Vitamin B5 by the Microbiological Method	AOAC 992.07, 960.46, 945.74 (Modified)
MP-B6A	Vitamin B6 as Pyridoxine Hydrochloride/Pyridoxine Free Base by Microbiological Method	AOAC 961.15 (Modified) Atkins, L., Schultz, A. S., Williams, W. L., and Frey, C. N., "Yeast Microbiological Methods for Determination of Vitamins," Industrial and Engineering Chemistry, Analytical Edition,15(2):141-144, (1943)
MP-B12LC	Vitamin B12 by HPLC	AOAC 2011.10 (Modified)
MP-VCF	Vitamin C	AOAC 967.22 (Modified)
MP-CALL	Vitamin C and Erythorbic Acid	AOAC 967.22 (Modified) Fontannaz, P., Kilinc, T., Heudi, O., "HPLC –UV determination of total vitamin C in a wide range of fortified food products", Food Chemistry 94: 626-631, (2006) (Modified) Capellmann, M., Bolt. H., "Simultaneous determination of ascorbic acid and dehydroascorbic acid by HPLC with postcolumn derivatisation and fluorometric detection", Fresenius' Journal of Analytical Chemistry 342:462-466, (1992) (Modified)
MP-VDMS	Vitamin D by LC/MS/MS	AOAC 2011.11 (Modified) Huang, M., Laluzerne, P., Winters, D., Sullivan, D., "Measurement of Vitamin D in Foods and Nutritional Supplements by Liquid Chromatography/Tandem Mass Spectrometry," Journal of AOAC International, Volume (92). No. 5:1327-1335 (2009)

Test Method	Test/Technology	Test Method Reference(s)
MP-LCAT	Vitamin E, Tocopherols, Tocotrienols by Ultra or High Performance Liquid Chromatography	Speek, A.J., Schijver, J., and Schreurs, W.H.P., Journal of Food Science, 50: 121-124 (1985) (Modified) Cort, W.M., Vincente, T.S., Waysek, E.H., and Williams, B.D., Journal of Agricultural Food Chemistry, 31: 1330-1333 (1983) (Modified) McMurray, C.H., Blanchflower, W.J., and Rice, D.A., Journal of the Association of Official Analytical Chemists, 63: 1258-1261 (1980) (Modified)
MP-VKTK	Vitamin K1 and K2	AOAC: 999.15, 992.27 (Modified)
MP-WACT	Water Activity by Chilled-Mirror Dew Point	AOAC 978.18 (Modified)

Abbreviations used in References:

AOAC	AOAC International (Association of Analytical Communities)
AOCS	American Oil Chemists' Society
FCC	Food Chemicals Codex
NIST	National Institute of Standards and Technology
USP	U.S. Pharmacopeia

Accredited Laboratory

A2LA has accredited

EUROFINS FOOD TESTING SINGAPORE PTE LTD

Singapore, Singapore

for technical competence in the field of

Chemical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *General requirements for the competence of testing and calibration laboratories*. This laboratory also meets the requirements of A2LA R204 - *Specific Requirements - Food and Pharmaceutical Testing Laboratory Accreditation Program.* This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (*refer to joint ISO-ILAC-IAF Communiqué dated 8 January 2009*).

Presented this 29th day of November 2017.

President and CEO
For the Accreditation Council
Certificate Number 2918.02
Valid to July 31, 2019
Revised October 17, 2018

For the tests to which this accreditation applies, please refer to the laboratory's Chemical Scope of Accreditation.