



Central Analytical Laboratories

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MARTEK BIOSCIENCES
CORPORATION
ATTN: ANNI CHANG
6480 DOBBIN ROAD
COLUMBIA, MD 21046

Reporting Date 01/21/2011

REPORT OF ANALYSIS



AR-10-QA-028432-03

This analytical report supersedes AR-10-QA-028432-02.

Sample Code 468-2010-1208B092
Description OIL
Client Sample Code 08-6530
Reference DHB

Reception Date 12/08/2010
Purchase Order

Test Results

Result

QA377 - Moisture (Air Oven - Feeds)
Completion Date: 01/07/2011 **Method:** AOAC 930.15
Moisture

<0.05 %

QA263 - Fat (Acid Hydrolysis)
Completion Date: 01/14/2011 **Method:** AOAC 950.54
Fat

99.33 g/100 g

QA13A - Ash (NLEA)
Completion Date: 01/04/2011 **Method:** AOAC 923.03 / 32.1.05 16th Ed.
Ash

<0.1 %

QA155 - Calcium (ICP-AES)
Completion Date: 12/17/2010 **Method:** AOCS Ca 17-01
Calcium (Ca)

0.9 mg/kg

QA302 - Magnesium (ICP-AES)
Completion Date: 12/17/2010 **Method:** AOCS Ca 17-01
Magnesium (Mg)

1.6 mg/kg

QA388 - Sodium (ICP-AES)
Completion Date: 12/17/2010 **Method:** AOCS Ca 17-01
Sodium

<1.0 mg/kg

QAA21 - Zinc (ICP-AES)
Completion Date: 12/17/2010 **Method:** AOCS Ca 17-01
Zinc (Zn)

<0.1 mg/kg

QA293 - Flash Point (Pensky Martin Closed Cup)
Completion Date: 12/15/2010 **Method:** AOCS Cc 9c-95



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Client Sample Code: 08-6530

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AR-10-QA-028432-03

Test Results	Result
Flash Point (PMCC)	440 °F
QA204 - Carbohydrate	
Completion Date: 01/11/2011 Method: Carbohydrate	<1.0 %
QA04H - Potassium (ICP-AES)	
Completion Date: 12/17/2010 Method: AOCS Ca 17-01 Potassium	1.9 mg/kg
QD052 - Protein - Combustion	
Completion Date: 01/21/2011 Method: AOAC 990.03; AOCS Ba 4e-93 Protein, Combustion	<0.10 %
QD297 - Protein - Kjeltex	
Completion Date: 01/11/2011 Method: AOAC 2001.11 Protein- Kjeltex	<1.00 %
QS02X - Aerobic Plate Count	
Completion Date: 12/14/2010 Method: AOAC 966.23 Aerobic Plate Count	<1 cfu/g
QS03D - MPN (3x3) Total Coliforms & E. coli, w/ MUG+GT	
Completion Date: 12/14/2010 Method: AOAC 988.19 Mod. MPN E. coli	<0.3 per g
MPN Total Coliforms	<0.3 per g
QS05Z - Yeast & Mold Count (CV), per mL	
Completion Date: 12/16/2010 Method: FDA BAM Ch 18 Mould Count	<1 cfu/g
Yeast Count	<1 cfu/g
QS177 - Salmonella per 25 g, PCR	
Completion Date: 12/14/2010 Method: AOAC 2003.09 Salmonella spp.	Negative per 25 g
QS191 - Staph. aureus, Plate Method	
Completion Date: 12/14/2010 Method: AOAC 975.55 Staphylococcus aureus	<1 cfu/g

A2LA ISO 17025:2005
NQA ISO 9001: 2008
Food and Drug Administration

American Oil Chemists Society
Grain and Feed Trade Association
Federation of Oils, Seed, and Fats Associations, Ltd.

Japanese Ministry of Health and Welfare
Association of Official Analytical Chemists
United States Department of Agriculture

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Analytical report: AR-10-QA-028432-03

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Eurofins Sample Code: 468-2010-1208B092

Client Sample Code: 08-6530

REPORT OF ANALYSIS

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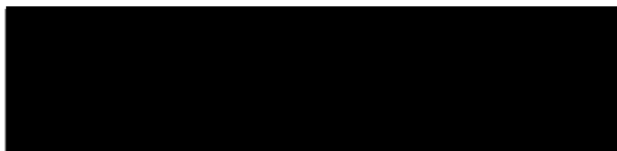


AR-10-QA-028432-03

Test Results

Result

Respectfully Submitted,
Eurofins Central Analytical Laboratories



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ATTN: ANNI CHANG
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Reporting Date 03/10/2011

Preliminary Report REPORT OF ANALYSIS



PR-11-QA-000059-02

Sample Code 468-2011-0201B219
Description DHB OIL
Client Sample Code 08-6530
Reference
Reception Date 02/01/2011
Purchase Order 915110

Test Results

Result

QA307 - Glyceride Profile

Completion Date: 02/03/2011 **Method:** AOCS Cd 11c-93

Diglycerides	2.1 %
Monoglycerides	1.1 %
Triglycerides	94.3 %

QA188 - Vitamin E- Total Tocopherols

Completion Date: 02/08/2011 **Method:** AOAC 971.30 with HPLC quantification mod.

Alpha-Tocopherol	37.8 mg/100 g
Beta-Tocopherol	4.06 mg/100 g
Delta-Tocopherol	60.0 mg/100 g
Gamma Tocopherol	130 mg/100 g
Total Vitamin E (Tocopherols)	232 mg/100 g

QA196 - Docosahexaenoic Acid (DHA)

Completion Date: 03/10/2011 **Method:** AOCS Ce 1b-89

DHA Docosahexaenoic acid C22:6	42.71 %weight
DHA Docosahexaenoic acid C22:6	427.1 mg/g

QA156 - Fatty Acid Profile NLEA

Completion Date: 03/10/2011 **Method:** AOAC 996.06

C 6:0 (Caproic acid)	<0.02 g/100 g
C 8:0 (Caprylic acid)	<0.02 g/100 g
C 10:0 (Capric acid)	<0.02 g/100 g
C 12:0 (Lauric acid)	0.08 g/100 g
C 14:0 (Myristic acid)	1.23 g/100 g
C 14:1 (Myristoleic acid)	<0.02 g/100 g
C 15:0 (Pentadecanoic acid)	0.22 g/100 g
C 15:1 (Pentadecenoic acid)	<0.02 g/100 g
C 16:0 (Palmitic acid)	13.3 g/100 g
C 16:1 (Palmitoleic acid)	<0.02 g/100 g

Eurofins Sample Code: 468-2011-0201B219

Client Sample Code: 08-6530

Preliminary Report

REPORT OF ANALYSIS



PR-11-QA-000059-02

Test Results

Result

C 17:0 (Margaric acid)	<0.02 g/100 g
C 17:1 (Heptadecenoic acid)	<0.02 g/100 g
C 18:0 (Stearic acid)	1.53 g/100 g
C 18:1 (Oleic acid)	23.7 g/100 g
C 18:1n7 (Vaccenic acid)	0.31 g/100 g
C 18:2n6 (Linoleic acid)	1.93 g/100 g
C 18:3n3 (alpha-Linolenic Acid)	0.07 g/100 g
C 18:3n6 (gamma-Linolenic Acid)	<0.02 g/100 g
C 18:4n3 (Stearidonic acid)	<0.02 g/100 g
C 20:0 (Arachidic acid)	0.30 g/100 g
C 20:1 (Eicosanoic Acid)	0.07 g/100 g
C 20:1 (Eicosenoic acid)	<0.02 g/100 g
C 20:2n6 (Eicosadienoic acid)	0.10 g/100 g
C 20:3n3 (Eicosatrienoic acid)	<0.02 g/100 g
C 20:3n6 (homo-gamma-Linolenic acid)	<0.02 g/100 g
C 20:4n6 (Arachidonic Acid)	0.62 g/100 g
C 20:5n3 (Eicosapentaenoic acid)	5.60 g/100 g
C 21:0 (Heneicosanoic acid)	<0.02 g/100 g
C 22:0 (Behenic acid)	0.32 g/100 g
C 22:1n9 (Erucic acid)	<0.02 g/100 g
C 22:2n6 (Docosadienoic acid)	0.50 g/100 g
C 22:6n3 (Docosahexaenoic acid)	43.5 %weight
C 22:5n3 (Docosapentaenoic acid)	0.51 g/100 g
C 22:5n6 (Docosapentaenoic acid)	2.48 g/100 g
C 23:0 (Tricosanoic acid)	<0.02 g/100 g
C 24:0 (Lignoceric acid)	0.11 g/100 g
C 24:1 (Nervonic acid)	<0.02 g/100 g

J8001 - Sterol profile and content

Completion Date: 02/17/2011 Method: DGF F-III 1

24-methylene-cholesterol (% tot. sterols)	1.3 %
beta-sitosterol (% tot. sterols)	10.2 %
brassicasterol (% tot. sterols)	1.3 %
campestanol (% tot. sterols)	0.1 %
campesterol (% tot. sterols)	2.0 %
chlerosterol (% tot. sterols)	1.6 %
cholesterol (% tot. sterols)	13.3 %
delta-5,23-stigmastadienol (% tot. sterols)	1.0 %
delta-5,24-stigmastadienol (% tot. sterols)	0.4 %
delta-5-avenasterol (% tot. sterols)	1.7 %
delta-7-avenasterol (% tot. sterols)	0.3 %
delta-7-campesterol (% tot. sterols)	0.4 %
delta-7-stigmastanol (% tot. sterols)	1.7 %
Other sterols (% tot. sterols)	<0.1 %

Eurofins Sample Code: 468-2011-0201B219

Client Sample Code: 08-6530

Preliminary Report
REPORT OF ANALYSIS



Test Results

sitostanol (% tot. sterols)
stigmasterol (% tot. sterols)
Total sterols in fat

Result

0.6 %
64.2 %
5,610 mg/kg

QA864 - Specific Gravity

Completion Date: 02/02/2011 Method: AOCS Cc 10c-95

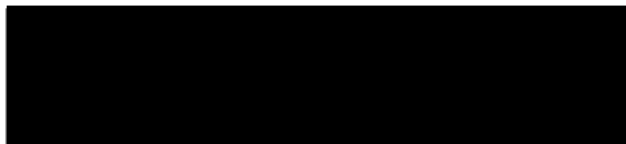
@25°C

Temperature of measurement

0.93460

25.0 °C

Respectfully Submitted,
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Reporting Date 01/27/2011



AR-11-QA-002607-01

REPORT OF ANALYSIS

Sample Code 468-2011-0114B142
Description DHB
Client Sample Code 08-6530
Reference

Reception Date 01/14/2011
Purchase Order 914644

Test Results

Result

QA021 - Aflatoxin Profile (LC-MSMS)

Completion Date: 01/20/2011 **Method:** AOAC 991.31

Aflatoxin B1	<1 µg/kg
Aflatoxin B2	<1 µg/kg
Aflatoxin G1	<1 µg/kg
Aflatoxin G2	<1 µg/kg

QA299 - Fumonisin, total (LC-MSMS)

Completion Date: 01/19/2011 **Method:** Internal Method

Fumonisin, total	<0.03 mg/kg
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QA404 - Ochratoxin A (LC-MSMS)

Completion Date: 01/20/2011 **Method:** Internal Method

Ochratoxin A	<0.2 µg/kg
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QA907 - T-2 Toxin (LC-MSMS)

Completion Date: 01/19/2011 **Method:** Internal Method

T-2 Toxin	<1 µg/kg
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QAA07 - Vomitoxin (DON) LC-MSMS

Completion Date: 01/19/2011 **Method:** Internal Method

Vomitoxin (Deoxynivalenol)	<0.01 mg/kg
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QAA19 - Zearalenone

Completion Date: 01/19/2011 **Method:** Internal Method

Zearalenone	<5.0 µg/kg
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QA052 - Polychlorinated Biphenyls (Oils & Fats)

Completion Date: 01/24/2011 **Method:** FDA PAM 304 E3C5

PCB 1	<0.02 mg/kg
PCB 8	<0.02 mg/kg

A2LA ISO 17025:2005

NQA ISO 9001: 2008

Food and Drug Administration

American Oil Chemists Society

Grain and Feed Trade Association

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Eurofins Sample Code: 468-2011-0114B142

Client Sample Code: 08-6530

REPORT OF ANALYSIS



AR-11-QA-002607-01

Test Results

	Result
PCB 18	<0.02 mg/kg
PCB 28	<0.02 mg/kg
PCB 29	<0.02 mg/kg
PCB 44	<0.02 mg/kg
PCB 50	<0.02 mg/kg
PCB 52	<0.02 mg/kg
PCB 66	<0.02 mg/kg
PCB 77	<0.02 mg/kg
PCB 87	<0.02 mg/kg
PCB 101	<0.02 mg/kg
PCB 104	<0.02 mg/kg
PCB 105	<0.02 mg/kg
PCB 118	<0.02 mg/kg
PCB 126	<0.02 mg/kg
PCB 128	<0.02 mg/kg
PCB 138	<0.02 mg/kg
PCB 153	<0.02 mg/kg
PCB 170	<0.02 mg/kg
PCB 180	<0.02 mg/kg
PCB 187	<0.02 mg/kg
PCB 188	<0.02 mg/kg
PCB 195	<0.02 mg/kg
PCB 201	<0.02 mg/kg
PCB 206	<0.02 mg/kg
PCB 209	<0.02 mg/kg
Total PCB	<0.02 mg/kg

A7158 - PCDD/F ~ 17 congeners ~ food / feed

Completion Date: 01/25/2011 Method: SOP QMA504-341

WHO(1998)-PCDD/F-TEQ incl. LOQ 0.263 pg/g

A7347 - PCB ~ dioxin-like / 12 WHO ~ food / feed

Completion Date: 01/25/2011 Method: SOP QMA504-341

WHO(1998)-PCB TEQ incl. LOQ 0.140 pg/g

GF004 - WHO-PCDD/F+PCB TEQ

Completion Date: 01/25/2011 Method:

WHO(1998)-PCDD/F+PCB TEQ incl. LOQ 0.403 pg/g

QA016 - Acrylamide (LC-MSMS, FDA method)

Completion Date: 01/24/2011 Method: FDA method

Acrylamide <50 µg/kg

QA049 - Polynuclear Aromatic Hydrocarbons (GC-MS, Oils)

Completion Date: 01/21/2011 Method: EPA 8275

A2LA ISO 17025:2005

NQA ISO 9001: 2008

Food and Drug Administration

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Eurofins Sample Code: 468-2011-0114B142

Client Sample Code: 08-6530

REPORT OF ANALYSIS



AR-11-QA-002607-01

Test Results

Acenaphthene
Acenaphthylene
Anthracene
Benzo(a)anthracene
Benzo(a)pyrene
Benzo(b)-Fluoranthene
Benzo(ghi)perylene
Benzo(k)fluoranthene
Chrysene
Dibenzo(a,h)anthracene
Fluoranthene
Fluorene
Indeno(1,2,3-cd)pyrene
Naphthalene
Phenanthrene
Pyrene

Result

<1.0 µg/kg
<2.0 µg/kg
<3.0 µg/kg
<2.0 µg/kg
<2.0 µg/kg
<3.0 µg/kg
<3.0 µg/kg
<4.0 µg/kg
<1.0 µg/kg
<3.0 µg/kg
<1.0 µg/kg
<2.0 µg/kg
<3.0 µg/kg
<2.0 µg/kg
<2.0 µg/kg
<1.0 µg/kg

JC00E - 3-MCPD-esters and 3-MCPD forming substances e.g. Glycidol

Completion Date: 01/27/2011 Method: DGF C-III 18 (09) mod.

Total 3-MCPD (free and bound)

<0.15 mg/kg

Respectfully Submitted,
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A2LA ISO 17025:2005

NQA ISO 9001: 2008

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Analytical report: AR-11-QA-002607-01

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ATTN: ANNI CHANG
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COLUMBIA, MD 21045

Reporting Date 02/15/2011



AR-11-QA-004457-01

REPORT OF ANALYSIS

Sample Code 468-2011-0114B148
Description DHB
Client Sample Code 08-8530
Reference VALIDATION PROJECT

Reception Date 01/14/2011
Purchase Order 914644

Test Results

Result

QA10E - Furan (SPME GC-MS)

Completion Date: 02/14/2011 **Method:** J. Agric. Food Chem. 2008, 56, 246-254

Furan

<100 µg/kg

QA10G - 5-HMF (HPLC)

Completion Date: 02/11/2011 **Method:** Internal method

5-Hydroxymethylfurfural (HMF)

<0.2 mg/kg

QA10H - Lysinoalanine (Oils and Fats, HPLC)

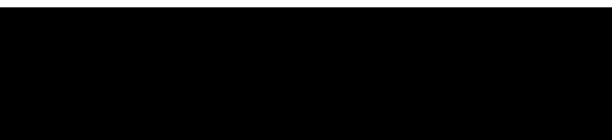
Completion Date: 02/14/2011 **Method:** Internal method

Lysinoalanine (LL+DL)

<10 mg/kg

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NQA ISO 9001: 2008
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Analytical report: AR-11-QA-004457-01

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Reporting Date 01/21/2011

REPORT OF ANALYSIS



AR-10-QA-028433-03

This analytical report supersedes AR-10-QA-028433-02.

Sample Code 468-2010-1208B093
Description OIL
Client Sample Code 08-6586
Reference DHB

Reception Date 12/08/2010
Purchase Order

Test Results

Result

QA377 - Moisture (Air Oven - Feeds)

Completion Date: 01/07/2011 **Method:** AOAC 930.15
Moisture

<0.05 %

QA263 - Fat (Acid Hydrolysis)

Completion Date: 01/14/2011 **Method:** AOAC 950.54
Fat

99.80 g/100 g

QA13A - Ash (NLEA)

Completion Date: 01/04/2011 **Method:** AOAC 923.03 / 32.1.05 16th Ed.
Ash

<0.1 %

QA155 - Calcium (ICP-AES)

Completion Date: 12/17/2010 **Method:** AOCS Ca 17-01
Calcium (Ca)

1.3 mg/kg

QA302 - Magnesium (ICP-AES)

Completion Date: 12/17/2010 **Method:** AOCS Ca 17-01
Magnesium (Mg)

2.8 mg/kg

QA388 - Sodium (ICP-AES)

Completion Date: 12/17/2010 **Method:** AOCS Ca 17-01
Sodium

<1.0 mg/kg

QAA21 - Zinc (ICP-AES)

Completion Date: 12/17/2010 **Method:** AOCS Ca 17-01
Zinc (Zn)

<0.1 mg/kg

QA293 - Flash Point (Pensky Martin Closed Cup)

Completion Date: 12/15/2010 **Method:** AOCS Cc 9c-95

Eurofins Sample Code: 468-2010-1208B093

Client Sample Code: 08-6586

REPORT OF ANALYSIS

This analytical report supersedes AR-10-QA-028433-02.



AR-10-QA-028433-03

Test Results

Result

Flash Point (PMCC)

455 °F

QA204 - Carbohydrate

Completion Date: 01/11/2011 Method:
Carbohydrate

<1.0 %

QA04H - Potassium (ICP-AES)

Completion Date: 12/17/2010 Method: AOCS Ca 17-01
Potassium

4.4 mg/kg

QD052 - Protein - Combustion

Completion Date: 01/21/2011 Method: AOAC 990.03; AOCS Ba 4e-93
Protein, Combustion

<0.10 %

QS02X - Aerobic Plate Count

Completion Date: 12/14/2010 Method: AOAC 966.23
Aerobic Plate Count

<1 cfu/g

QS03D - MPN (3x3) Total Coliforms & E. coli, w/ MUG+GT

Completion Date: 12/14/2010 Method: AOAC 988.19 Mod.
MPN E. coli
MPN Total Coliforms

<0.3 per g

<0.3 per g

QS05Z - Yeast & Mold Count (CV), per mL

Completion Date: 12/16/2010 Method: FDA BAM Ch 18
Mould Count
Yeast Count

<1 cfu/g

<1 cfu/g

QS177 - Salmonella per 25 g, PCR

Completion Date: 12/14/2010 Method: AOAC 2003.09
Salmonella spp.

Negative per 25 g

QS191 - Staph. aureus, Plate Method

Completion Date: 12/14/2010 Method: AOAC 975.55
Staphylococcus aureus

<1 cfu/g

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Reporting Date 03/10/2011

Preliminary Report REPORT OF ANALYSIS



PR-11-QA-000060-02

Sample Code 468-2011-0201B220
Description DHB OIL
Client Sample Code 08-6586
Reference

Reception Date 02/01/2011
Purchase Order 915110

Test Results

Result

QA307 - Glyceride Profile

Completion Date: 02/03/2011 **Method:** AOCS Cd 11c-93

Diglycerides	2.6 %
Monoglycerides	1.8 %
Triglycerides	91.0 %

QQ188 - Vitamin E- Total Tocopherols

Completion Date: 02/08/2011 **Method:** AOAC 971.30 with HPLC quantification mod.

Alpha-Tocopherol	30.5 mg/100 g
Beta-Tocopherol	3.41 mg/100 g
Delta-Tocopherol	39.4 mg/100 g
Gamma Tocopherol	98.0 mg/100 g
Total Vitamin E (Tocopherols)	171 mg/100 g

QA196 - Docosahexaenoic Acid (DHA)

Completion Date: 03/10/2011 **Method:** AOCS Ce 1b-89

DHA Docosahexaenoic acid C22:6	40.03 %weight
DHA Docosahexaenoic acid C22:6	400.3 mg/g

QA156 - Fatty Acid Profile NLEA

Completion Date: 03/10/2011 **Method:** AOAC 996.06

C 6:0 (Caproic acid)	<0.02 g/100 g
C 8:0 (Caprylic acid)	<0.02 g/100 g
C 10:0 (Capric acid)	<0.02 g/100 g
C 12:0 (Lauric acid)	0.06 g/100 g
C 14:0 (Myristic acid)	1.00 g/100 g
C 14:1 (Myristoleic acid)	<0.02 g/100 g
C 15:0 (Pentadecanoic acid)	0.20 g/100 g
C 15:1 (Pentadecenoic acid)	<0.02 g/100 g
C 16:0 (Palmitic acid)	11.9 g/100 g
C 16:1 (Palmitoleic acid)	<0.02 g/100 g

Eurofins Sample Code: 468-2011-0201B220

Client Sample Code: 08-6586

Preliminary Report

REPORT OF ANALYSIS



PR-11-QA-000060-02

Test Results

Result

C 17:0 (Margaric acid)	<0.02 g/100 g
C 17:1 (Heptadecenoic acid)	<0.02 g/100 g
C 18:0 (Stearic acid)	1.51 g/100 g
C 18:1 (Oleic acid)	23.7 g/100 g
C 18:1n7 (Vaccenic acid)	0.15 g/100 g
C 18:2n6 (Linoleic acid)	1.87 g/100 g
C 18:3n3 (alpha-Linolenic Acid)	0.06 g/100 g
C 18:3n6 (gamma-Linolenic Acid)	<0.02 g/100 g
C 18:4n3 (Stearidonic acid)	<0.02 g/100 g
C 20:0 (Arachidic acid)	0.29 g/100 g
C 20:1 (Eicosanoic Acid)	0.07 g/100 g
C 20:1 (Eicosenoic acid)	<0.02 g/100 g
C 20:2n6 (Eicosodienoic acid)	0.10 g/100 g
C 20:3n3 (Eicosatrienoic acid)	<0.02 g/100 g
C 20:3n6 (homo-gamma-Linolenic acid)	<0.02 g/100 g
C 20:4n6 (Arachidonic Acid)	0.81 g/100 g
C 20:5n3 (Eicosapentaenoic acid)	5.36 g/100 g
C 21:0 (Heneicosanoic acid)	<0.02 g/100 g
C 22:0 (Behenic acid)	0.32 g/100 g
C 22:1n9 (Erucic acid)	<0.02 g/100 g
C 22:2n6 (Docosadienoic acid)	0.45 g/100 g
C 22:6n3 (Docosahexaenoic acid)	39.8 %weight
C 22:5n3 (Docosapentaenoic acid)	0.53 g/100 g
C 22:5n6 (Docosapentaenoic acid)	2.33 g/100 g
C 23:0 (Tricosanoic acid)	<0.02 g/100 g
C 24:0 (Lignoceric acid)	0.12 g/100 g
C 24:1 (Nervonic acid)	<0.02 g/100 g

J8001 - Sterol profile and content

Completion Date: 02/17/2011 Method: DGF F-III 1

24-methylene-cholesterol (% tot. sterols)	2.0 %
beta-sitosterol (% tot. sterols)	11.4 %
brassicasterol (% tot. sterols)	1.7 %
campestanol (% tot. sterols)	0.1 %
campesterol (% tot. sterols)	1.7 %
chlerosterol (% tot. sterols)	1.6 %
cholesterol (% tot. sterols)	14.4 %
delta-5,23-stigmastadienol (% tot. sterols)	0.8 %
delta-5,24-stigmastadienol (% tot. sterols)	0.5 %
delta-5-avenasterol (% tot. sterols)	1.8 %
delta-7-avenasterol (% tot. sterols)	0.4 %
delta-7-campesterol (% tot. sterols)	0.4 %
delta-7-stigmastanol (% tot. sterols)	2.0 %
Other sterols (% tot. sterols)	<0.1 %

Eurofins Sample Code: 468-2011-0201B220

Client Sample Code: 08-6586

Preliminary Report
REPORT OF ANALYSIS



PR-11-QA-000060-02

Test Results

sitostanol (% tot. sterols)
stigmasterol (% tot. sterols)
Total sterols in fat

Result

0.6 %
60.6 %
5,060 mg/kg

QA864 - Specific Gravity

Completion Date: 02/02/2011 Method: AOCS Cc 10c-95

@25°C

Temperature of measurement

0.93458

25.0 °C

Respectfully Submitted,
Eurofins Central Analytical Laboratories

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A2LA ISO 17025:2005

NQA ISO 9001: 2008

Food and Drug Administration

American Oil Chemists Society

Grain and Feed Trade Association

Federation of Oils, Seed, and Fats Associations, Ltd.

Japanese Ministry of Health and Welfare

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COLUMBIA, MD 21045

Reporting Date 01/27/2011



AR-11-QA-002608-01

REPORT OF ANALYSIS

Sample Code 468-2011-0114B143
Description DHB
Client Sample Code 08-6586
Reference

Reception Date 01/14/2011
Purchase Order 914644

Test Results

Result

QA021 - Aflatoxin Profile (LC-MSMS)

Completion Date: 01/20/2011 **Method:** AOAC 991.31

Aflatoxin B1	<1 µg/kg
Aflatoxin B2	<1 µg/kg
Aflatoxin G1	<1 µg/kg
Aflatoxin G2	<1 µg/kg

QA299 - Fumonisin, total (LC-MSMS)

Completion Date: 01/19/2011 **Method:** Internal Method

Fumonisin, total	<0.03 mg/kg
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QA404 - Ochratoxin A (LC-MSMS)

Completion Date: 01/20/2011 **Method:** Internal Method

Ochratoxin A	<0.2 µg/kg
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QA907 - T-2 Toxin (LC-MSMS)

Completion Date: 01/19/2011 **Method:** Internal Method

T-2 Toxin	<1 µg/kg
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QAA07 - Vomitoxin (DON) LC-MSMS

Completion Date: 01/19/2011 **Method:** Internal Method

Vomitoxin (Deoxynivalenol)	<0.01 mg/kg
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QAA19 - Zearalenone

Completion Date: 01/19/2011 **Method:** Internal Method

Zearalenone	<5.0 µg/kg
-------------	------------

QA052 - Polychlorinated Biphenyls (Oils & Fats)

Completion Date: 01/24/2011 **Method:** FDA PAM 304 E3C5

PCB 1	<0.02 mg/kg
PCB 8	<0.02 mg/kg

A2LA ISO 17025:2005

NQA ISO 9001: 2008

Food and Drug Administration

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Analytical report: AR-11-QA-002608-01

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Client Sample Code: 08-6586

REPORT OF ANALYSIS



Result

PCB 18	<0.02 mg/kg
PCB 28	<0.02 mg/kg
PCB 29	<0.02 mg/kg
PCB 44	<0.02 mg/kg
PCB 50	<0.02 mg/kg
PCB 52	<0.02 mg/kg
PCB 66	<0.02 mg/kg
PCB 77	<0.02 mg/kg
PCB 87	<0.02 mg/kg
PCB 101	<0.02 mg/kg
PCB 104	<0.02 mg/kg
PCB 105	<0.02 mg/kg
PCB 118	<0.02 mg/kg
PCB 126	<0.02 mg/kg
PCB 128	<0.02 mg/kg
PCB 138	<0.02 mg/kg
PCB 153	<0.02 mg/kg
PCB 170	<0.02 mg/kg
PCB 180	<0.02 mg/kg
PCB 187	<0.02 mg/kg
PCB 188	<0.02 mg/kg
PCB 195	<0.02 mg/kg
PCB 201	<0.02 mg/kg
PCB 206	<0.02 mg/kg
PCB 209	<0.02 mg/kg
Total PCB	<0.02 mg/kg

0.258 pg/g

0.137 pg/g

0.395 pg/g

<50 µg/kg

Analytical report: AR-11-QA-002608-01



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Client Sample Code: 08-6586

REPORT OF ANALYSIS



AR-11-QA-002608-01

Test Results

Acenaphthene
Acenaphthylene
Anthracene
Benzo(a)anthracene
Benzo(a)pyrene
Benzo(b)-Fluoranthene
Benzo(g,h,i)perylene
Benzo(k)fluoranthene
Chrysene
Dibenzo(a,h)anthracene
Fluoranthene
Fluorene
Indeno(1,2,3-cd)pyrene
Naphthalene
Phenanthrene
Pyrene

Result

<1.0 µg/kg
<2.0 µg/kg
<3.0 µg/kg
<2.0 µg/kg
<2.0 µg/kg
<3.0 µg/kg
<3.0 µg/kg
<4.0 µg/kg
<1.0 µg/kg
<3.0 µg/kg
<1.0 µg/kg
<2.0 µg/kg
<3.0 µg/kg
<2.0 µg/kg
<2.0 µg/kg
<1.0 µg/kg

JC00E - 3-MCPD-esters and 3-MCPD forming substances e.g. Glycidol

Completion Date: 01/27/2011 Method: DGF C-III 18 (09) mod.

Total 3-MCPD (free and bound)

<0.15 mg/kg

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Eurofins Central Analytical Laboratories

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Reporting Date 02/15/2011



AR-11-QA-004458-01

REPORT OF ANALYSIS

Sample Code 468-2011-0114B149
Description DHB
Client Sample Code 08-6586
Reference VALIDATION PROJECT

Reception Date 01/14/2011
Purchase Order 914644

Test Results

Result

QA10E - Furan (SPME GC-MS)

Completion Date: 02/14/2011 **Method:** J. Agric. Food Chem. 2008, 56, 246-254

Furan

<100 µg/kg

QA10G - 5-HMF (HPLC)

Completion Date: 02/11/2011 **Method:** Internal method

5-Hydroxymethylfurfural (HMF)

<0.2 mg/kg

QA10H - Lysinoalanine (Oils and Fats, HPLC)

Completion Date: 02/14/2011 **Method:** Internal method

Lysinoalanine (LL+DL)

<10 mg/kg

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Reporting Date 01/21/2011



AR-10-QA-028435-03

REPORT OF ANALYSIS

This analytical report supersedes AR-10-QA-028435-02.

Sample Code 468-2010-1210B171
Description OIL
Client Sample Code 08-6585
Reference DHB

Reception Date 12/10/2010
Purchase Order

Test Results

Result

QA377 - Moisture (Air Oven - Feeds)
Completion Date: 01/07/2011 **Method:** AOAC 930.15
Moisture

<0.05 %

QA263 - Fat (Acid Hydrolysis)
Completion Date: 01/14/2011 **Method:** AOAC 950.54
Fat

99.27 g/100 g

QA13A - Ash (NLEA)
Completion Date: 01/04/2011 **Method:** AOAC 923.03 / 32.1.05 16th Ed.
Ash

<0.1 %

QA155 - Calcium (ICP-AES)
Completion Date: 12/17/2010 **Method:** AOCS Ca 17-01
Calcium (Ca)

3.0 mg/kg

QA302 - Magnesium (ICP-AES)
Completion Date: 12/17/2010 **Method:** AOCS Ca 17-01
Magnesium (Mg)

4.2 mg/kg

QA388 - Sodium (ICP-AES)
Completion Date: 12/17/2010 **Method:** AOCS Ca 17-01
Sodium

<1.0 mg/kg

QAA21 - Zinc (ICP-AES)
Completion Date: 12/17/2010 **Method:** AOCS Ca 17-01
Zinc (Zn)

<0.1 mg/kg

QA293 - Flash Point (Pensky Martin Closed Cup)
Completion Date: 12/16/2010 **Method:** AOCS Cc 9c-95



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Eurofins Sample Code: 468-2010-1210B171

Client Sample Code: 08-6585

REPORT OF ANALYSIS

This analytical report supersedes AR-10-QA-028435-02.



AR-10-QA-028435-03

Test Results	Result
Flash Point (PMCC)	445 °F
QA204 - Carbohydrate	
Completion Date: 01/11/2011 Method:	
Carbohydrate	<1.0 %
QA875 - Aerobic Plate Count	
Completion Date: 12/14/2010 Method: AOAC 966.23	
Aerobic Plate Count	10 cfu/g
QA04H - Potassium (ICP-AES)	
Completion Date: 12/17/2010 Method: AOCS Ca 17-01	
Potassium	4.9 mg/kg
QAA17 - Yeast & Mold Count	
Completion Date: 12/16/2010 Method: FDA BAM Ch 18	
Mold Count	<10 cfu/g
Yeast Count	<10 cfu/g
QD052 - Protein - Combustion	
Completion Date: 01/21/2011 Method: AOAC 990.03; AOCS Ba 4e-93	
Protein, Combustion	<0.10 %
QD297 - Protein - Kjeltex	
Completion Date: 01/11/2011 Method: AOAC 2001.11	
Protein- Kjeltex	<1.00 %
QS03D - MPN (3x3) Total Coliforms & E. coli, w/ MUG+GT	
Completion Date: 12/14/2010 Method: AOAC 988.19 Mod.	
MPN E. coli	<3 per g
MPN Total Coliforms	<3 per g
QS177 - Salmonella per 25 g, PCR	
Completion Date: 12/14/2010 Method: AOAC 2003.09	
Salmonella spp.	Negative per 25 g
QS191 - Staph. aureus, Plate Method	
Completion Date: 12/14/2010 Method: AOAC 975.55	
Staphylococcus aureus	<10 cfu/g



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Client Sample Code: 08-6585

REPORT OF ANALYSIS

This analytical report supersedes AR-10-QA-028435-02.

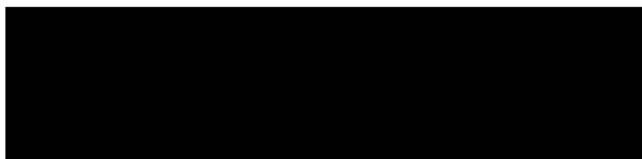


AR-10-QA-028435-03

Test Results

Result

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Reporting Date 03/10/2011

Preliminary Report REPORT OF ANALYSIS



PR-11-QA-000061-02

Sample Code 468-2011-0201B221
Description DHB OIL
Client Sample Code 08-6585
Reference

Reception Date 02/01/2011
Purchase Order 915110

Test Results

Result

QA307 - Glyceride Profile

Completion Date: 02/03/2011 **Method:** AOCS Cd 11c-93

Diglycerides	1.7 %
Monoglycerides	1.6 %
Triglycerides	94.6 %

QA188 - Vitamin E- Total Tocopherols

Completion Date: 02/08/2011 **Method:** AOAC 971.30 with HPLC quantification mod.

Alpha-Tocopherol	32.6 mg/100 g
Beta-Tocopherol	3.74 mg/100 g
Delta-Tocopherol	44.5 mg/100 g
Gamma Tocopherol	108 mg/100 g
Total Vitamin E (Tocopherols)	189 mg/100 g

QA196 - Docosahexaenoic Acid (DHA)

Completion Date: 03/10/2011 **Method:** AOCS Ce 1b-89

DHA Docosahexaenoic acid C22:6	40.20 %weight
DHA Docosahexaenoic acid C22:6	402.0 mg/g

QA156 - Fatty Acid Profile NLEA

Completion Date: 03/10/2011 **Method:** AOAC 996.06

C 6:0 (Caproic acid)	<0.02 g/100 g
C 8:0 (Caprylic acid)	<0.02 g/100 g
C 10:0 (Capric acid)	<0.02 g/100 g
C 12:0 (Lauric acid)	0.06 g/100 g
C 14:0 (Myristic acid)	0.96 g/100 g
C 14:1 (Myristoleic acid)	<0.02 g/100 g
C 15:0 (Pentadecanoic acid)	0.22 g/100 g
C 15:1 (Pentadecenoic acid)	<0.02 g/100 g
C 16:0 (Palmitic acid)	12.9 g/100 g
C 16:1 (Palmitoleic acid)	<0.02 g/100 g

Eurofins Sample Code: 468-2011-0201B221

Client Sample Code: 08-6585

Preliminary Report

REPORT OF ANALYSIS



PR-11-QA-000061-02

Test Results

Result

C 17:0 (Margaric acid)	<0.02 g/100 g
C 17:1 (Heptadecenoic acid)	<0.02 g/100 g
C 18:0 (Stearic acid)	1.55 g/100 g
C 18:1 (Oleic acid)	23.2 g/100 g
C 18:1n7 (Vaccenic acid)	0.35 g/100 g
C 18:2n6 (Linoleic acid)	1.84 g/100 g
C 18:3n3 (alpha-Linolenic Acid)	0.06 g/100 g
C 18:3n6 (gamma-Linolenic Acid)	<0.02 g/100 g
C 18:4n3 (Stearidonic acid)	<0.02 g/100 g
C 20:0 (Arachidic acid)	0.31 g/100 g
C 20:1 (Eicosanoic Acid)	0.08 g/100 g
C 20:1 (Eicosenoic acid)	<0.02 g/100 g
C 20:2n6 (Eicosadienoic acid)	0.08 g/100 g
C 20:3n3 (Eicosatrienoic acid)	<0.02 g/100 g
C 20:3n6 (homo-gamma-Linolenic acid)	<0.02 g/100 g
C 20:4n6 (Arachidonic Acid)	0.60 g/100 g
C 20:5n3 (Eicosapentaenoic acid)	5.79 g/100 g
C 21:0 (Heneicosanoic acid)	<0.02 g/100 g
C 22:0 (Behenic acid)	0.32 g/100 g
C 22:1n9 (Erucic acid)	<0.02 g/100 g
C 22:2n6 (Docosadienoic acid)	0.45 g/100 g
C 22:6n3 (Docosahexaenoic acid)	40.9 %weight
C 22:5n3 (Docosapentaenoic acid)	0.87 g/100 g
C 22:5n6 (Docosapentaenoic acid)	2.10 g/100 g
C 23:0 (Tricosanoic acid)	<0.02 g/100 g
C 24:0 (Lignoceric acid)	0.12 g/100 g
C 24:1 (Nervonic acid)	<0.02 g/100 g

J8001 - Sterol profile and content

Completion Date: 02/17/2011 Method: DGF F-III 1

24-methylene-cholesterol (% tot. sterols)	1.2 %
beta-sitosterol (% tot. sterols)	10.7 %
brassicasterol (% tot. sterols)	1.0 %
campestanol (% tot. sterols)	0.1 %
campesterol (% tot. sterols)	1.8 %
chlerosterol (% tot. sterols)	1.6 %
cholesterol (% tot. sterols)	11.2 %
delta-5,23-stigmastadienol (% tot. sterols)	0.8 %
delta-5,24-stigmastadienol (% tot. sterols)	0.4 %
delta-5-avenasterol (% tot. sterols)	2.9 %
delta-7-avenasterol (% tot. sterols)	0.3 %
delta-7-campesterol (% tot. sterols)	0.4 %
delta-7-stigmastenol (% tot. sterols)	1.8 %
Other sterols (% tot. sterols)	0.1 %

Eurofins Sample Code: 468-2011-0201B221

Client Sample Code: 08-6585

Preliminary Report
REPORT OF ANALYSIS



PR-11-QA-000061-02

Test Results

sitostanol (% tot. sterols)
stigmasterol (% tot. sterols)
Total sterols in fat

Result

0.5 %
65.2 %
5,500 mg/kg

QA864 - Specific Gravity

Completion Date: 02/02/2011 Method: AOCS Cc 10c-95

@25°C

Temperature of measurement

0.93508

25.0 °C

Respectfully Submitted,
Eurofins Central Analytical Laboratories

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Reporting Date 01/21/2011

REPORT OF ANALYSIS



AR-10-QA-028434-03

This analytical report supersedes AR-10-QA-028434-02.

Sample Code 468-2010-1208B094
Description OIL
Client Sample Code 08-6592
Reference DHB

Reception Date 12/08/2010

Purchase Order

Test Results

Result

QA377 - Moisture (Air Oven - Feeds)
Completion Date: 01/07/2011 **Method:** AOAC 930.15
Moisture

<0.05 %

QA263 - Fat (Acid Hydrolysis)
Completion Date: 01/14/2011 **Method:** AOAC 950.54
Fat

99.71 g/100 g

QA13A - Ash (NLEA)
Completion Date: 01/04/2011 **Method:** AOAC 923.03 / 32.1.05 16th Ed.
Ash

<0.1 %

QA155 - Calcium (ICP-AES)
Completion Date: 12/17/2010 **Method:** AOCS Ca 17-01
Calcium (Ca)

1.3 mg/kg

QA302 - Magnesium (ICP-AES)
Completion Date: 12/17/2010 **Method:** AOCS Ca 17-01
Magnesium (Mg)

3.0 mg/kg

QA388 - Sodium (ICP-AES)
Completion Date: 12/17/2010 **Method:** AOCS Ca 17-01
Sodium

<1.0 mg/kg

QAA21 - Zinc (ICP-AES)
Completion Date: 12/17/2010 **Method:** AOCS Ca 17-01
Zinc (Zn)

<0.1 mg/kg

QA293 - Flash Point (Pensky Martin Closed Cup)
Completion Date: 12/16/2010 **Method:** AOCS Cc 9c-95



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Eurofins Sample Code: 468-2010-1208B094

Client Sample Code: 08-6592

REPORT OF ANALYSIS

This analytical report supersedes AR-10-QA-028434-02.



AR-10-QA-028434-03

Test Results

Result

Flash Point (PMCC)

460 °F

QA204 - Carbohydrate

Completion Date: 01/11/2011 Method:
Carbohydrate

<1.0 %

QA04H - Potassium (ICP-AES)

Completion Date: 12/17/2010 Method: AOCS Ca 17-01
Potassium

4.7 mg/kg

QD052 - Protein - Combustion

Completion Date: 01/21/2011 Method: AOAC 990.03; AOCS Ba 4e-93
Protein, Combustion

<0.10 %

QD297 - Protein - Kjeltex

Completion Date: 01/11/2011 Method: AOAC 2001.11
Protein- Kjeltex

<1.00 %

QS02X - Aerobic Plate Count

Completion Date: 12/14/2010 Method: AOAC 966.23
Aerobic Plate Count

<1 cfu/g

QS03D - MPN (3x3) Total Coliforms & E. coli, w/ MUG+GT

Completion Date: 12/14/2010 Method: AOAC 988.19 Mod.
MPN E. coli
MPN Total Coliforms

<0.3 per g

<0.3 per g

QS05Z - Yeast & Mold Count (CV), per mL

Completion Date: 12/16/2010 Method: FDA BAM Ch 18
Mould Count
Yeast Count

<1 cfu/g

<1 cfu/g

QS177 - Salmonella per 25 g, PCR

Completion Date: 12/14/2010 Method: AOAC 2003.09
Salmonella spp.

Negative per 25 g

QS191 - Staph. aureus, Plate Method

Completion Date: 12/14/2010 Method: AOAC 975.55
Staphylococcus aureus

<1 cfu/g

A2LA ISO 17025:2005
NQA ISO 9001: 2008
Food and Drug Administration

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Analytical report: AR-10-QA-028434-03

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Eurofins Sample Code: 468-2010-1208B094

Client Sample Code: 08-6592

REPORT OF ANALYSIS

This analytical report supersedes AR-10-QA-028434-02.



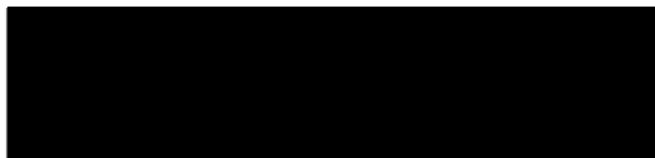
AR-10-QA-028434-03

Test Results

Result

Respectfully Submitted,
Eurofins Central Analytical Laboratories

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Uncertainty can be obtained upon request.



A2LA ISO 17025:2005
NQA ISO 9001: 2008
Food and Drug Administration

American Oil Chemists Society
Grain and Feed Trade Association
Federation of Oils, Seed, and Fats Associations, Ltd.

Japanese Ministry of Health and Welfare
Association of Official Analytical Chemists
United States Department of Agriculture

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Page 3 of 3

Analytical report: AR-10-QA-028434-03

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MARTEK BIOSCIENCES CORPORATION
ATTN: ANNI CHANG
6480 DOBBIN ROAD
COLUMBIA, MD 21045

Reporting Date 03/10/2011

Preliminary Report REPORT OF ANALYSIS



PR-11-QA-000062-02

Sample Code 468-2011-0201B222
Description DHB OIL
Client Sample Code 08-6592
Reference

Reception Date 02/01/2011
Purchase Order 915110

Test Results

Result

QA307 - Glyceride Profile

Completion Date: 02/03/2011 **Method:** AOCS Cd 11c-93

Diglycerides	2.4 %
Monoglycerides	2.2 %
Triglycerides	91.6 %

QA188 - Vitamin E- Total Tocopherols

Completion Date: 02/08/2011 **Method:** AOAC 971.30 with HPLC quantification mod.

Alpha-Tocopherol	31.5 mg/100 g
Beta-Tocopherol	<3.28 mg/100 g
Delta-Tocopherol	41.8 mg/100 g
Gamma Tocopherol	98.7 mg/100 g
Total Vitamin E (Tocopherols)	172 mg/100 g

QA196 - Docosahexaenoic Acid (DHA)

Completion Date: 03/10/2011 **Method:** AOCS Ce 1b-89

DHA Docosahexaenoic acid C22:6	39.30 %weight
DHA Docosahexaenoic acid C22:6	393.0 mg/g

QA156 - Fatty Acid Profile NLEA

Completion Date: 03/10/2011 **Method:** AOAC 996.06

C 6:0 (Caproic acid)	<0.02 g/100 g
C 8:0 (Caprylic acid)	<0.02 g/100 g
C 10:0 (Capric acid)	<0.02 g/100 g
C 12:0 (Lauric acid)	0.06 g/100 g
C 14:0 (Myristic acid)	0.92 g/100 g
C 14:1 (Myristoleic acid)	<0.02 g/100 g
C 15:0 (Pentadecanoic acid)	0.20 g/100 g
C 15:1 (Pentadecenoic acid)	<0.02 g/100 g
C 16:0 (Palmitic acid)	12.2 g/100 g
C 16:1 (Palmitoleic acid)	<0.02 g/100 g

Eurofins Sample Code: 468-2011-0201B222

Client Sample Code: 08-6592

Preliminary Report REPORT OF ANALYSIS



PR-11-QA-000062-02

Test Results
Result

C 17:0 (Margaric acid)	<0.02 g/100 g
C 17:1 (Heptadecenoic acid)	<0.02 g/100 g
C 18:0 (Stearic acid)	1.56 g/100 g
C 18:1 (Oleic acid)	25.5 g/100 g
C 18:1n7 (Vaccenic acid)	0.31 g/100 g
C 18:2n6 (Linoleic acid)	1.77 g/100 g
C 18:3n3 (alpha-Linolenic Acid)	<0.02 g/100 g
C 18:3n6 (gamma-Linolenic Acid)	<0.02 g/100 g
C 18:4n3 (Stearidonic acid)	<0.02 g/100 g
C 20:0 (Arachidic acid)	0.30 g/100 g
C 20:1 (Eicosanoic Acid)	0.08 g/100 g
C 20:1 (Eicosenoic acid)	<0.02 g/100 g
C 20:2n6 (Eicosodienoic acid)	0.08 g/100 g
C 20:3n3 (Eicosatrienoic acid)	<0.02 g/100 g
C 20:3n6 (homo-gamma-Linolenic acid)	<0.02 g/100 g
C 20:4n6 (Arachidonic Acid)	0.56 g/100 g
C 20:5n3 (Eicosapentaenoic acid)	5.49 g/100 g
C 21:0 (Heneicosanoic acid)	<0.02 g/100 g
C 22:0 (Behenic acid)	0.34 g/100 g
C 22:1n9 (Erucic acid)	<0.02 g/100 g
C 22:2n6 (Docosadienoic acid)	0.43 g/100 g
C 22:6n3 (Docosahexaenoic acid)	38.0 %weight
C 22:5n3 (Docosapentaenoic acid)	0.83 g/100 g
C 22:5n6 (Docosapentaenoic acid)	2.04 g/100 g
C 23:0 (Tricosanoic acid)	<0.02 g/100 g
C 24:0 (Lignoceric acid)	0.13 g/100 g
C 24:1 (Nervonic acid)	<0.02 g/100 g

J8001 - Sterol profile and content

Completion Date: 02/17/2011 Method: DGF F-III 1

24-methylene-cholesterol (% tot. sterols)	1.1 %
beta-sitosterol (% tot. sterols)	14.6 %
brassicasterol (% tot. sterols)	0.9 %
campestanol (% tot. sterols)	0.1 %
campesterol (% tot. sterols)	2.2 %
chlerosterol (% tot. sterols)	1.6 %
cholesterol (% tot. sterols)	9.8 %
delta-5,23-stigmastadienol (% tot. sterols)	0.8 %
delta-5,24-stigmastadienol (% tot. sterols)	0.5 %
delta-5-avenasterol (% tot. sterols)	0.9 %
delta-7-avenasterol (% tot. sterols)	3.2 %
delta-7-campesterol (% tot. sterols)	0.6 %
delta-7-stigmastenol (% tot. sterols)	2.5 %
Other sterols (% tot. sterols)	<0.1 %

Eurofins Sample Code: 468-2011-0201B222

Client Sample Code: 08-6592

Preliminary Report
REPORT OF ANALYSIS



PR-11-QA-000062-02

Test Results

sitostanol (% tot. sterols)
stigmasterol (% tot. sterols)
Total sterols in fat

Result

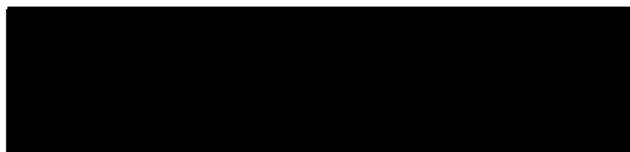
0.5 %
60.7 %
5,070 mg/kg

QA864 - Specific Gravity

Completion Date: 02/02/2011 Method: AOCS Cc 10c-95
@25°C
Temperature of measurement

0.93360
25.0 °C

Respectfully Submitted,
Eurofins Central Analytical Laboratories



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MARTEK BIOSCIENCES CORPORATION
ATTN: ANNI CHANG
6480 DOBBIN ROAD
COLUMBIA, MD 21045

Reporting Date 02/01/2011

REPORT OF ANALYSIS



AR-11-QA-003173-01

Sample Code 468-2011-0106B053
Description DHB OIL SAMPLE
Client Sample Code 08-6592
Reference

Reception Date 01/06/2011
Purchase Order

Test Results

Result

QA021 - Aflatoxin Profile (LC-MSMS)

Completion Date: 01/11/2011 **Method:** AOAC 991.31

Aflatoxin B1	<1 µg/kg
Aflatoxin B2	<1 µg/kg
Aflatoxin G1	<1 µg/kg
Aflatoxin G2	<1 µg/kg

QA299 - Fumonisin, total (LC-MSMS)

Completion Date: 01/13/2011 **Method:** Internal Method

Fumonisin, total	<0.03 mg/kg
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QA404 - Ochratoxin A (LC-MSMS)

Completion Date: 01/11/2011 **Method:** Internal Method

Ochratoxin A	<0.2 µg/kg
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QA907 - T-2 Toxin (LC-MSMS)

Completion Date: 01/12/2011 **Method:** Internal Method

T-2 Toxin	<1 µg/kg
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QAA07 - Vomitoxin (DON) LC-MSMS

Completion Date: 01/12/2011 **Method:** Internal Method

Vomitoxin (Deoxynivalenol)	<0.01 mg/kg
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QAA19 - Zearalenone

Completion Date: 01/12/2011 **Method:** Internal Method

Zearalenone	<5.0 µg/kg
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QA052 - Polychlorinated Biphenyls (Oils & Fats)

Completion Date: 01/14/2011 **Method:** FDA PAM 304 E3C5

PCB 1	<0.02 mg/kg
PCB 8	<0.02 mg/kg

Client Sample Code: 08-6592

AR-11-QA-003173-01

Result

PCB 18	<0.02 mg/kg
PCB 28	<0.02 mg/kg
PCB 29	<0.02 mg/kg
PCB 44	<0.02 mg/kg
PCB 50	<0.02 mg/kg
PCB 52	<0.02 mg/kg
PCB 66	<0.02 mg/kg
PCB 77	<0.02 mg/kg
PCB 87	<0.02 mg/kg
PCB 101	<0.02 mg/kg
PCB 104	<0.02 mg/kg
PCB 105	<0.02 mg/kg
PCB 118	<0.02 mg/kg
PCB 126	<0.02 mg/kg
PCB 128	<0.02 mg/kg
PCB 138	<0.02 mg/kg
PCB 153	<0.02 mg/kg
PCB 170	<0.02 mg/kg
PCB 180	<0.02 mg/kg
PCB 187	<0.02 mg/kg
PCB 188	<0.02 mg/kg
PCB 195	<0.02 mg/kg
PCB 201	<0.02 mg/kg
PCB 206	<0.02 mg/kg
PCB 209	<0.02 mg/kg
Total PCB	<0.02 mg/kg

Completion Date: 01/13/2011 **Method:** FDA PAM 304 E3C5

a, β , d-BHC (Benzene hexachloride)	<0.01 mg/kg
Alachlor	<0.02 mg/kg
Aldrin	<0.01 mg/kg
Benfluralin	<0.02 mg/kg
BifenoX	<0.03 mg/kg
Boscalid	<0.02 mg/kg
Bromacil	<0.02 mg/kg
Captafol	<0.01 mg/kg
Captan	<0.02 mg/kg
Chlordane (total)	<0.01 mg/kg
Chlorfenapyr	<0.01 mg/kg
Chlorobenzilate	<0.04 mg/kg
Chlorothalonil	<0.02 mg/kg
Cyanazine	<0.02 mg/kg
Dacthal (Chlorthal)	<0.02 mg/kg

Eurofins Sample Code: 468-2011-0106B053

Client Sample Code: 08-6592

REPORT OF ANALYSIS



AR-11-QA-003173-01

Test Results

Result

DDD	<0.01 mg/kg
DDE	<0.01 mg/kg
DDT	<0.01 mg/kg
Dichlobenil	<0.01 mg/kg
Dichlone	<0.05 mg/kg
Dicloran	<0.01 mg/kg
Dicofol	<0.02 mg/kg
Dieldrin	<0.01 mg/kg
Endosulfan beta	<0.01 mg/kg
Endosulfan, alpha-	<0.01 mg/kg
Endosulfan-sulfate	<0.01 mg/kg
Endrin	<0.01 mg/kg
Ethalfuralin	<0.01 mg/kg
Fenhexamid	<0.02 mg/kg
Folpet	<0.02 mg/kg
HCB (Hexachlorbenzene)	<0.01 mg/kg
Heptachlor	<0.01 mg/kg
Heptachlor epoxide	<0.01 mg/kg
Indoxacarb	<0.02 mg/kg
Iprodione	<0.02 mg/kg
Lindane (gamma-HCH)	<0.01 mg/kg
Linuron	<0.10 mg/kg
Methoxychlor	<0.02 mg/kg
Metribuzin	<0.01 mg/kg
Mirex	<0.01 mg/kg
Myclobutanil	<0.0100 mg/kg
Oxadiazon	<0.02 mg/kg
Oxyfluorfen	<0.01 mg/kg
Pendimethalin	<0.01 mg/kg
Pentachloroaniline	<0.01 mg/kg
Pentachloronitrobenzene (PCNB)	<0.01 mg/kg
Perthane	<0.01 mg/kg
Procymidone	<0.01 mg/kg
Profluralin	<0.02 mg/kg
Pronamide	<0.02 mg/kg
Propanil	<0.01 mg/kg
Pyrethrins (total)	<0.02 mg/kg
Tetradifon	<0.02 mg/kg
Toxaphene (camphechlor)	<0.01 mg/kg
Tridimephon	<0.02 mg/kg
Trifloxystrobin	<0.01 mg/kg
Triflumizole	<0.01 mg/kg
Trifluralin	<0.02 mg/kg
Vegadex	<0.02 mg/kg

Eurofins Sample Code: 468-2011-0106B053

Client Sample Code: 08-6592

REPORT OF ANALYSIS



AR-11-QA-003173-01

Test Results

Vinclozolin

Result

<0.02 mg/kg

QA02D - Pesticides - Organophosphorus (Oils & Fats)

Completion Date: 01/13/2011 Method: FDA PAM 304 E3C5

Azinphos-methyl	<0.02 mg/kg
Carbophenothion	<0.02 mg/kg
Chlorfenvinphos	<0.02 mg/kg
Chlorpyrifos	<0.02 mg/kg
Chlorpyrifos-methyl	<0.02 mg/kg
Coumaphos	<0.02 mg/kg
Diazinon	<0.02 mg/kg
Dibrom (Naled)	<0.02 mg/kg
Dicrotophos	<0.02 mg/kg
Dimethoate	<0.02 mg/kg
Disulfoton	<0.02 mg/kg
EPN	<0.02 mg/kg
Ethion	<0.02 mg/kg
Ethoprop	<0.02 mg/kg
Fenamiphos	<0.02 mg/kg
Fenitrothion	<0.02 mg/kg
Fenthion	<0.02 mg/kg
Fonofos	<0.02 mg/kg
Isofenphos	<0.02 mg/kg
Malathion	<0.02 mg/kg
Methyl Parathion	<0.02 mg/kg
Mevinphos	<0.02 mg/kg
Omethoate	<0.02 mg/kg
Parathion	<0.02 mg/kg
Phorate	<0.02 mg/kg
Phosalone	<0.02 mg/kg
Phosmet	<0.02 mg/kg
Phosphamidon	<0.02 mg/kg
Pirimiphos-methyl	<0.02 mg/kg
Profenofos	<0.02 mg/kg
Propetamphos	<0.02 mg/kg
Ronnel	<0.02 mg/kg
Sulprofos	<0.02 mg/kg
Tetrachlorvinphos	<0.02 mg/kg
Thionazin	<0.02 mg/kg

QA02C - Pesticides - Pyrethroids (Oils & Fats)

Completion Date: 01/13/2011 Method: FDA PAM 304 E3C5

Bifenthrin	<0.02 mg/kg
Cyfluthrin	<0.02 mg/kg

Eurofins Sample Code: 468-2011-0106B053

Client Sample Code: 08-6592

REPORT OF ANALYSIS



AR-11-QA-003173-01

Test Results

Cyhalothrin lambda
Cypermethrin
Deltamethrin
Esfenvalerate
Fenpropathrin
Fluvalinate
Permethrin
Tralomethrin

Result

<0.02 mg/kg
<0.02 mg/kg
<0.02 mg/kg
<0.02 mg/kg
<0.02 mg/kg
<0.02 mg/kg
<0.02 mg/kg
<0.02 mg/kg

A7158 - PCDD/F ~ 17 congeners ~ food / feed

Completion Date: 01/20/2011 Method: SOP QMA504-341
WHO(1998)-PCDD/F-TEQ incl. LOQ

0.178 pg/g

A7347 - PCB ~ dioxin-like / 12 WHO ~ food / feed

Completion Date: 01/20/2011 Method: SOP QMA504-341
WHO(1998)-PCB TEQ incl. LOQ

0.0950 pg/g

GF004 - WHO-PCDD/F+PCB TEQ

Completion Date: 01/20/2011 Method:
WHO(1998)-PCDD/F+PCB TEQ incl. LOQ

0.273 pg/g

QA016 - Acrylamide (LC-MSMS, FDA method)

Completion Date: 01/14/2011 Method: FDA method
Acrylamide

<50 µg/kg

QA049 - Polynuclear Aromatic Hydrocarbons (GC-MS, Oils)

Completion Date: 01/12/2011 Method: EPA 8275

Acenaphthene	<1.0 µg/kg
Acenaphthylene	<2.0 µg/kg
Anthracene	<3.0 µg/kg
Benzo(a)anthracene	<2.0 µg/kg
Benzo(a)pyrene	<2.0 µg/kg
Benzo(b)-Fluoranthene	<3.0 µg/kg
Benzo(ghi)perylene	<3.0 µg/kg
Benzo(k)fluoranthene	<4.0 µg/kg
Chrysene	<1.0 µg/kg
Dibenzo(a,h)anthracene	<3.0 µg/kg
Fluoranthene	<1.0 µg/kg
Fluorene	<2.0 µg/kg
Indeno(1,2,3-cd)pyrene	<3.0 µg/kg
Naphthalene	11.4 µg/kg
Phenanthrene	5.5 µg/kg
Pyrene	1.0 µg/kg

JC00E - 3-MCPD-esters and 3-MCPD forming substances e.g. Glycidol

A2LA ISO 17025:2005
NQA ISO 9001: 2008
Food and Drug Administration

American Oil Chemists Society
Grain and Feed Trade Association
Federation of Oils, Seed, and Fats Associations, Ltd.

Japanese Ministry of Health and Welfare
Association of Official Analytical Chemists
United States Department of Agriculture

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Eurofins Sample Code: 468-2011-0106B053

Client Sample Code: 08-6592

REPORT OF ANALYSIS



Test Results

Completion Date: 02/01/2011 Method: DGF C-III 18 (09) mod.
Total 3-MCPD (free and bound)

Result

0.56 mg/kg

Respectfully Submitted,
Eurofins Central Analytical Laboratories

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A2LA ISO 17025:2005
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Japanese Ministry of Health and Welfare
Association of Official Analytical Chemists
United States Department of Agriculture

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ATTN: ANNI CHANG
6480 DOBBIN ROAD
COLUMBIA, MD 21045

Reporting Date 02/15/2011



AR-11-QA-004456-01

REPORT OF ANALYSIS

Sample Code 468-2011-0106B083
Description DHB OIL
Client Sample Code 08-6592
Reference VALIDATION PROJECT

Reception Date 01/06/2011
Purchase Order 914643

Test Results

Result

QA10E - Furan (SPME GC-MS)

Completion Date: 02/14/2011 **Method:** J. Agric. Food Chem. 2008, 56, 246-254

Furan

<100 µg/kg

QA10G - 5-HMF (HPLC)

Completion Date: 02/14/2011 **Method:** Internal method

5-Hydroxymethylfurfural (HMF)

<0.2 mg/kg

QA10H - Lysinoalanine (Oils and Fats, HPLC)

Completion Date: 02/14/2011 **Method:** Internal method

Lysinoalanine (LL+DL)

<10 mg/kg

Respectfully Submitted,
Eurofins Central Analytical Laboratories

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Central Analytical Laboratories

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Person in charge
Client Support

www.centralanalytical.com

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COLUMBIA, MD 21045

Reporting Date 01/21/2011

REPORT OF ANALYSIS



AR-11-QA-001557-02

This analytical report supersedes AR-11-QA-001557-01.

Sample Code 468-2011-0104B077
Description DHB
Client Sample Code 08-6643
Reference

Reception Date 01/04/2011
Purchase Order

Test Results	Result
QA377 - Moisture (Air Oven - Feeds) Completion Date: 01/12/2011 Method: AOAC 930.15 Moisture	<0.05 %
QA263 - Fat (Acid Hydrolysis) Completion Date: 01/20/2011 Method: AOAC 950.54 Fat	99.39 g/100 g
QA13A - Ash (NLEA) Completion Date: 01/11/2011 Method: AOAC 923.03 / 32.1.05 16th Ed. Ash	<0.1 %
QA155 - Calcium (ICP-AES) Completion Date: 01/14/2011 Method: AOCS Ca 17-01 Calcium (Ca)	7.4 mg/kg
QA302 - Magnesium (ICP-AES) Completion Date: 01/14/2011 Method: AOCS Ca 17-01 Magnesium (Mg)	2.2 mg/kg
QA388 - Sodium (ICP-AES) Completion Date: 01/14/2011 Method: AOCS Ca 17-01 Sodium	1.6 mg/kg
QA421 - Zinc (ICP-AES) Completion Date: 01/14/2011 Method: AOCS Ca 17-01 Zinc (Zn)	0.4 mg/kg
QA293 - Flash Point (Pensky Martin Closed Cup) Completion Date: 01/06/2011 Method: AOCS Cc 9c-95	



Central Analytical Laboratories

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Eurofins Sample Code: 468-2011-0104B077

Client Sample Code: 08-6643

REPORT OF ANALYSIS

This analytical report supersedes AR-11-QA-001557-01.



AR-11-QA-001557-02

Test Results

Result

Flash Point (PMCC)	445 °F
QA204 - Carbohydrate	
Completion Date: 01/18/2011 Method:	
Carbohydrate	<1.0 %
QA04H - Potassium (ICP-AES)	
Completion Date: 01/14/2011 Method: AOCS Ca 17-01	
Potassium	4.8 mg/kg
QD052 - Protein - Combustion	
Completion Date: 01/21/2011 Method: AOAC 990.03; AOCS Ba 4e-93	
Protein, Combustion	<0.10 %
QD297 - Protein - Kjeltex	
Completion Date: 01/12/2011 Method: AOAC 2001.11	
Protein- Kjeltex	<1.00 %
UMAEK - Salmonella /25 g AOAC 2003.09	
Completion Date: 01/12/2011 Method: AOAC 2003.09	
Salmonella	Negative per 25 g
UMFRR - Coliforms-Escherichia Coli /g AOAC 988.19	
Completion Date: 01/11/2011 Method: AOAC 988.19	
E. coli	<3 MPN/g
Total Coliforms	<3 MPN/g
UMJR7 - Staphylococcus Aureus /g AOAC 2003.07	
Completion Date: 01/11/2011 Method: AOAC 2003.07	
Staphylococcus Aureus	<10 cfu/g
UMMFL - Aerobic Plate Count /g AOAC 966-23	
Completion Date: 01/11/2011 Method: AOAC 966-23	
Aerobic Plate Count	<10 cfu/g
UMN2K - Moulds-Yeast /g BAM Chapter 18	
Completion Date: 01/11/2011 Method: BAM Chapter 18	
Mold	<10 cfu/g
Yeast	<10 cfu/g

A2LA ISO 17025:2005

NQA ISO 9001: 2008

Food and Drug Administration

American Oil Chemists Society

Grain and Feed Trade Association

Federation of Oils, Seed, and Fats Associations, Ltd.

Japanese Ministry of Health and Welfare

Association of Official Analytical Chemists

United States Department of Agriculture

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Page 2 of 3

Analytical report: AR-11-QA-001557-02

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Central Analytical Laboratories

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Eurofins Sample Code: 468-2011-0104B077

Client Sample Code: 08-6643

REPORT OF ANALYSIS

This analytical report supersedes AR-11-QA-001557-01.

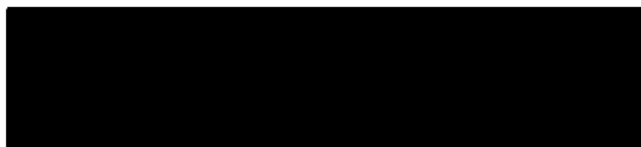


AR-11-QA-001557-02

Test Results

Result

Respectfully Submitted,
Eurofins Central Analytical Laboratories



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Uncertainty can be obtained upon request.

MARTEK BIOSCIENCES CORPORATION
ATTN: ANNI CHANG
6480 DOBBIN ROAD
COLUMBIA, MD 21045

Reporting Date 03/10/2011

Preliminary Report
REPORT OF ANALYSIS



PR-11-QA-000063-02

Sample Code 468-2011-0201B223
Description DHB OIL
Client Sample Code 08-6643
Reference

Reception Date 02/01/2011
Purchase Order 915110

Test Results

Result

QA307 - Glyceride Profile

Completion Date: 02/03/2011 **Method:** AOCS Cd 11c-93

Diglycerides	2.6 %
Monoglycerides	2.2 %
Triglycerides	94.6 %

QA188 - Vitamin E- Total Tocopherols

Completion Date: 02/08/2011 **Method:** AOAC 971.30 with HPLC quantification mod.

Alpha-Tocopherol	27.1 mg/100 g
Beta-Tocopherol	3.42 mg/100 g
Delta-Tocopherol	41.8 mg/100 g
Gamma Tocopherol	100 mg/100 g
Total Vitamin E (Tocopherols)	172 mg/100 g

QA196 - Docosahexaenoic Acid (DHA)

Completion Date: 03/10/2011 **Method:** AOCS Ce 1b-89

DHA Docosahexaenoic acid C22:6	42.42 %weight
DHA Docosahexaenoic acid C22:6	424.2 mg/g

QA156 - Fatty Acid Profile NLEA

Completion Date: 03/10/2011 **Method:** AOAC 996.06

C 6:0 (Caproic acid)	<0.02 g/100 g
C 8:0 (Caprylic acid)	<0.02 g/100 g
C 10:0 (Capric acid)	<0.02 g/100 g
C 12:0 (Lauric acid)	0.04 g/100 g
C 14:0 (Myristic acid)	1.16 g/100 g
C 14:1 (Myristoleic acid)	<0.02 g/100 g
C 15:0 (Pentadecanoic acid)	0.24 g/100 g
C 15:1 (Pentadecenoic acid)	<0.02 g/100 g
C 16:0 (Palmitic acid)	13.3 g/100 g
C 16:1 (Palmitoleic acid)	<0.02 g/100 g

Eurofins Sample Code: 468-2011-0201B223

Client Sample Code: 08-6643

REPORT OF ANALYSIS



PR-11-QA-000063-02

Test Results

Result

C 17:0 (Margaric acid)	<0.02 g/100 g
C 17:1 (Heptadecenoic acid)	<0.02 g/100 g
C 18:0 (Stearic acid)	1.38 g/100 g
C 18:1 (Oleic acid)	19.9 g/100 g
C 18:1n7 (Vaccenic acid)	<0.02 g/100 g
C 18:2n6 (Linoleic acid)	1.61 g/100 g
C 18:3n3 (alpha-Linolenic Acid)	<0.02 g/100 g
C 18:3n6 (gamma-Linolenic Acid)	<0.02 g/100 g
C 18:4n3 (Stearidonic acid)	<0.02 g/100 g
C 20:0 (Arachidic acid)	0.30 g/100 g
C 20:1 (Eicosanoic Acid)	0.06 g/100 g
C 20:1 (Eicosenoic acid)	<0.02 g/100 g
C 20:2n6 (Eicosodienoic acid)	0.10 g/100 g
C 20:3n3 (Eicosatrienoic acid)	<0.02 g/100 g
C 20:3n6 (homo-gamma-Linolenic acid)	<0.02 g/100 g
C 20:4n6 (Arachidonic Acid)	0.69 g/100 g
C 20:5n3 (Eicosapentaenoic acid)	5.93 g/100 g
C 21:0 (Heneicosanoic acid)	<0.02 g/100 g
C 22:0 (Behenic acid)	0.28 g/100 g
C 22:1n9 (Erucic acid)	<0.02 g/100 g
C 22:2n6 (Docosadienoic acid)	<0.02 g/100 g
C 22:6n3 (Docosahexaenoic acid)	43.2 %weight
C 22:5n3 (Docosapentaenoic acid)	0.59 g/100 g
C 22:5n6 (Docosapentaenoic acid)	2.51 g/100 g
C 23:0 (Tricosanoic acid)	<0.02 g/100 g
C 24:0 (Lignoceric acid)	0.10 g/100 g
C 24:1 (Nervonic acid)	<0.02 g/100 g

J8001 - Sterol profile and content

Completion Date: 02/17/2011 Method: DGF F-III 1

24-methylene-cholesterol (% tot. sterols)	1.9 %
beta-sitosterol (% tot. sterols)	9.7 %
brassicasterol (% tot. sterols)	1.5 %
campestanol (% tot. sterols)	0.1 %
campesterol (% tot. sterols)	1.5 %
chlerosterol (% tot. sterols)	1.6 %
cholesterol (% tot. sterols)	12.8 %
delta-5,23-stigmastadienol (% tot. sterols)	0.8 %
delta-5,24-stigmastadienol (% tot. sterols)	0.4 %
delta-5-avenasterol (% tot. sterols)	1.6 %
delta-7-avenasterol (% tot. sterols)	0.3 %
delta-7-campesterol (% tot. sterols)	0.4 %
delta-7-stigmastanol (% tot. sterols)	1.6 %
Other sterols (% tot. sterols)	<0.1 %

Eurofins Sample Code: 468-2011-0201B223

Client Sample Code: 08-6643

Preliminary Report
REPORT OF ANALYSIS



PR-11-QA-000063-02

Test Results

sitostanol (% tot. sterols)
stigmasterol (% tot. sterols)
Total sterols in fat

Result

0.5 %
65.3 %
5,450 mg/kg

QA864 - Specific Gravity

Completion Date: 02/02/2011 Method: AOCS Cc 10c-95

@25°C

Temperature of measurement

0.93671

25.0 °C

Respectfully Submitted,
Eurofins Central Analytical Laboratories

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COLUMBIA, MD 21045

Reporting Date 01/27/2011

REPORT OF ANALYSIS



AR-11-QA-002609-01

Sample Code 468-2011-0114B144
Description DHB
Client Sample Code 08-6643
Reference

Reception Date 01/14/2011
Purchase Order 914644

Test Results

Result

QA021 - Aflatoxin Profile (LC-MSMS)

Completion Date: 01/20/2011 Method: AOAC 991.31

Aflatoxin B1

<1 µg/kg

Aflatoxin B2

<1 µg/kg

Aflatoxin G1

<1 µg/kg

Aflatoxin G2

<1 µg/kg

QA299 - Fumonisin, total (LC-MSMS)

Completion Date: 01/19/2011 Method: Internal Method

Fumonisin, total

<0.03 mg/kg

QA404 - Ochratoxin A (LC-MSMS)

Completion Date: 01/20/2011 Method: Internal Method

Ochratoxin A

<0.2 µg/kg

QA907 - T-2 Toxin (LC-MSMS)

Completion Date: 01/19/2011 Method: Internal Method

T-2 Toxin

<1 µg/kg

QAA07 - Vomitoxin (DON) LC-MSMS

Completion Date: 01/19/2011 Method: Internal Method

Vomitoxin (Deoxynivalenol)

<0.01 mg/kg

QAA19 - Zearalenone

Completion Date: 01/19/2011 Method: Internal Method

Zearalenone

<5.0 µg/kg

QA052 - Polychlorinated Biphenyls (Oils & Fats)

Completion Date: 01/24/2011 Method: FDA PAM 304 E3C5

PCB 1

<0.02 mg/kg

PCB 8

<0.02 mg/kg

A2LA ISO 17025:2005

NQA ISO 9001: 2008

Food and Drug Administration

American Oil Chemists Society

Grain and Feed Trade Association

Federation of Oils, Seed, and Fats Associations, Ltd.

Japanese Ministry of Health and Welfare

Association of Official Analytical Chemists

United States Department of Agriculture

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Analytical report: AR-11-QA-002609-01

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Eurofins Sample Code: 468-2011-0114B144

Client Sample Code: 08-6643

REPORT OF ANALYSIS



Test Results

Result

PCB 18	<0.02 mg/kg
PCB 28	<0.02 mg/kg
PCB 29	<0.02 mg/kg
PCB 44	<0.02 mg/kg
PCB 50	<0.02 mg/kg
PCB 52	<0.02 mg/kg
PCB 66	<0.02 mg/kg
PCB 77	<0.02 mg/kg
PCB 87	<0.02 mg/kg
PCB 101	<0.02 mg/kg
PCB 104	<0.02 mg/kg
PCB 105	<0.02 mg/kg
PCB 118	<0.02 mg/kg
PCB 126	<0.02 mg/kg
PCB 128	<0.02 mg/kg
PCB 138	<0.02 mg/kg
PCB 153	<0.02 mg/kg
PCB 170	<0.02 mg/kg
PCB 180	<0.02 mg/kg
PCB 187	<0.02 mg/kg
PCB 188	<0.02 mg/kg
PCB 195	<0.02 mg/kg
PCB 201	<0.02 mg/kg
PCB 206	<0.02 mg/kg
PCB 209	<0.02 mg/kg
Total PCB	<0.02 mg/kg

A7158 - PCDD/F ~ 17 congeners ~ food / feed

Completion Date: 01/25/2011 Method: SOP QMA504-341

WHO(1998)-PCDD/F-TEQ incl. LOQ

0.265 pg/g

A7347 - PCB ~ dioxin-like / 12 WHO ~ food / feed

Completion Date: 01/25/2011 **Method:** SOP QMA504-341

WHO(1998)-PCB TEQ incl. LOQ

0.141 pg/g

GF004 - WHO-PCDD/F+PCB TEQ

Completion Date: 01/25/2011 Method:

WHO(1998)-PCDD/F+PCB TEQ incl. LOQ

0.406 pg/g

QA016 - Acrylamide (LC-MSMS, FDA method)

Completion Date: 01/24/2011 **Method:** FDA method

Acrylamide

<50 µg/kg

QA049 - Polynuclear Aromatic Hydrocarbons (GC-MS, Oils)

Completion Date: 01/21/2011 Method: EPA 8275

A2LA ISO 17025:2005

NQA ISO 9001:2008

Food and Drug Administration

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Grain and Feed Trade Association

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Japanese Ministry of Health and Welfare

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Eurofins Sample Code: 468-2011-0114B144

Client Sample Code: 08-6643

REPORT OF ANALYSIS



AR-11-QA-002609-01

Test Results

Acenaphthene
Acenaphthylene
Anthracene
Benzo(a)anthracene
Benzo(a)pyrene
Benzo(b)-Fluoranthene
Benzo(ghi)perylene
Benzo(k)fluoranthene
Chrysene
Dibenzo(a,h)anthracene
Fluoranthene
Fluorene
Indeno(1,2,3-cd)pyrene
Naphthalene
Phenanthrene
Pyrene

Result

<1.0 µg/kg
<2.0 µg/kg
<3.0 µg/kg
<2.0 µg/kg
<2.0 µg/kg
<3.0 µg/kg
<3.0 µg/kg
<4.0 µg/kg
<1.0 µg/kg
<3.0 µg/kg
<1.0 µg/kg
<2.0 µg/kg
<3.0 µg/kg
<2.0 µg/kg
<2.0 µg/kg
<1.0 µg/kg

JC00E - 3-MCPD-esters and 3-MCPD forming substances e.g. Glycidol

Completion Date: 01/27/2011 Method: DGF C-III 18 (09) mod.

Total 3-MCPD (free and bound)

0.25 mg/kg

Respectfully Submitted,
Eurofins Central Analytical Laboratories

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Reporting Date 02/15/2011



AR-11-QA-004459-01

REPORT OF ANALYSIS

Sample Code 468-2011-0114B150
Description DHB
Client Sample Code 08-8643
Reference VALIDATION PROJECT

Reception Date 01/14/2011
Purchase Order 914644

Test Results

Result

QA10E - Furan (SPME GC-MS)

Completion Date: 02/14/2011 **Method:** J. Agric. Food Chem. 2008, 56, 246-254

Furan

<100 µg/kg

QA10G - 5-HMF (HPLC)

Completion Date: 02/11/2011 **Method:** Internal method

5-Hydroxymethylfurfural (HMF)

<0.2 mg/kg

QA10H - Lysinoalanine (Oils and Fats, HPLC)

Completion Date: 02/14/2011 **Method:** Internal method

Lysinoalanine (LL+DL)

<10 mg/kg

Respectfully Submitted,
Eurofins Central Analytical Laboratories

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A2LA ISO 17025:2005

NQA ISO 9001: 2008

Food and Drug Administration

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