

Certificate of Analysis

12034926-1

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HEALTH SCIENCES
GESONDHEIDSWETENSKAPPE



GeneScan

GMO Testing Facility

Contact: Mariam Mayet Telephone: 083 273 7304
Company: African Centre for Biosafety Fax: 011 486 1156
Address: P.O. Box 29170, Melville, 2109

Certificate No: 12034926-1 Date of issue: 12-03-2012
Unique Sample No: 4926

Sample Identification: Futurelife energy meal
Sample Description: Energy meal
Sample size: ± 50 g
Priority: Standard

Date of Order: 05-03-2012
Date sample received: 05-03-2012

Test Requested:

Qualitative PCR screening: GMO double screen (35S and NOS)
Species detection: Maize, Soybean
Quantitative PCR: 35S Maize Quant; GTS40-3-2 Soy Quant

Test Sample: 2 x 2g

Analysis of GMO screening

PCR System	PCR Cycles	Limit of Detection	Test Result Comment
35S	50	20 copies	35S detected
NOS	50	20 copies	NOS detected

35S: The 35S PCR system detects transgenic DNA sequences that are characteristic for the 35S promoter of the Cauliflower Mosaic Virus (CaMV). The limit of detection of genetically modified DNA is 0.01% or 20 copies.

NOS: The NOS PCR system detects transgenic DNA sequences that are characteristic for the NOS terminator derived from *Agrobacterium tumefaciens*. The limit of detection of genetically modified DNA is 0.01% or 20 copies.

Analysis of species detection

PCR System	PCR Cycles	Limit of Detection	Test Result Comment
Maize	50	20 copies	Maize detected
Soybean	50	20 copies	Soybean detected

Maize: Gene specific detection of HMG sequence only found in maize. The limit of detection of genetically modified DNA is 0.01% or 20 copies.

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Soybean: Gene specific detection of lectin sequence only found in soybean. The limit of detection of genetically modified DNA is 0.01% or 20 copies.

Analysis of Real-time GMO Quantification

PCR System	PCR Cycles	LOQ	Test Result Comment
35S Maize Quant	50	5.00%	35S maize detected: 100.00% (SD 19.95)
GTS40-3-2 Soy Quant	50	1.00%	GTS40-3-2 soybean detected: 36.13% (SD 4.28)

35S Maize Quant: This system detects transgenic DNA sequences that are characteristic for the 35S promoter of the Cauliflower Mosaic Virus (CaMV). The amount of GMO in the sample was measured by Real-time PCR using the ABI 7500 (Applied Biosystems). Different amounts of transgenic DNA were analysed in order to generate standard curves for a naturally occurring reference gene and the CaMV 35S promoter DNA. Defined amounts of the sample DNA were analysed accordingly, and the GMO content determined by comparison to the standard curves.

The sample contains 100.00% (SD 19.96) of transgenic 35S promoter DNA in relation to total maize DNA. The limit of quantification (LOQ) is 5.00%.

GTS40-3-2 Soy Quant: The RRS PCR system detects transgenic DNA sequences that are characteristic for the CP4 EPSPS gene in soybean. The amount of GMO in the sample was measured by Real-time PCR using the ABI 7500 (Applied Biosystems). Different amounts of transgenic DNA were analysed in order to generate standard curves for a naturally occurring reference soy gene and sequences specific for the CP4 EPSPS gene. Defined amounts of the sample DNA were analysed accordingly, and the GMO content determined by comparison to the standard curves.

The sample contains 36.13% (SD 4.28) of transgenic CP4 EPSPS DNA in relation to total soybean DNA. The limit of quantification (LOQ) is 1.00%.

Disclaimer:

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- The result refers only to the laboratory test performed as requested by the client and does not exclude the presence of other GMOs not detected by the requested test(s).

Prof. C.D. Viljoen



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Contact: Mariam Mayet Telephone: 083 273 7304
Company: African Centre for Biosafety Fax: 011 486 1156
Address: P.O. Box 29170, Melville, 2109

Certificate No: 12034925-1 Date of issue: 12-03-2012
Unique Sample No: 4925

Sample Identification: Impata maize meal
Sample Description: Maize meal
Sample Code / Batch: 6'0012'5042783
Sample size: ± 200 g
Priority: Standard

Date of Order: 05-03-2012
Date sample received: 05-03-2012

Test Requested:
Qualitative PCR screening: GMO double screen (35S and NOS)
Quantitative PCR: 35S Maize Quant

Test Sample: 2 x 2g

Analysis of GMO screening

PCR System	PCR Cycles	Limit of Detection	Test Result Comment
35S	50	20 copies	35S detected
NOS	50	20 copies	NOS detected

35S: The 35S PCR system detects transgenic DNA sequences that are characteristic for the 35S promoter of the Cauliflower Mosaic Virus (CaMV). The limit of detection of genetically modified DNA is 0.01% or 20 copies.

NOS: The NOS PCR system detects transgenic DNA sequences that are characteristic for the NOS terminator derived from *Agrobacterium tumefaciens*. The limit of detection of genetically modified DNA is 0.01% or 20 copies.

Analysis of Real-time GMO Quantification

PCR System	PCR Cycles	LOQ	Test Result Comment
35S Maize Quant	50	0.05%	35S maize detected: 66.18% (SD 4.13)

35S Maize Quant: This system detects transgenic DNA sequences that are characteristic for the 35S promoter of the Cauliflower Mosaic Virus (CaMV). The amount of GMO in the sample was measured by Real-time PCR using the ABI 7500 (Applied Biosystems). Different amounts of transgenic DNA were

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analysed in order to generate standard curves for a naturally occurring reference gene and the CaMV 35S promoter DNA. Defined amounts of the sample DNA were analysed accordingly, and the GMO content determined by comparison to the standard curves.

The sample contains 66.18% (SD 4.13) of transgenic 35S promoter DNA in relation to total maize DNA. The limit of quantification (LOQ) is 0.05%.

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Address: P.O. Box 29170, Melville, 2109

Certificate No: 12034923-1 Date of issue: 12-03-2012
Unique Sample No: 4923

Sample Identification: Wheat free Pronuro
Sample Description: Cereal
Sample Code / Batch: 6 0010 21064525
Sample size: ± 200 g
Priority: Standard

Date of Order: 05-03-2012
Date sample received: 05-03-2012

Test Requested:

Qualitative PCR screening: GMO double screen (35S and NOS)

Species detection: Maize, Soybean

Quantitative PCR: 35S Maize Quant, GTS40-3-2 Soy Quant

Test Sample: 2 x 2g

Analysis of GMO screening

PCR System	PCR Cycles	Limit of Detection	Test Result	Comment
35S	50	20 copies	35S detected	
NOS	50	20 copies	NOS detected	

35S: The 35S PCR system detects transgenic DNA sequences that are characteristic for the 35S promoter of the Cauliflower Mosaic Virus (CaMV). The limit of detection of genetically modified DNA is 0.01% or 20 copies.

NOS: The NOS PCR system detects transgenic DNA sequences that are characteristic for the NOS terminator derived from *Agrobacterium tumefaciens*. The limit of detection of genetically modified DNA is 0.01% or 20 copies.

Analysis of species detection

PCR System	PCR Cycles	Limit of Detection	Test Result	Comment
Maize	50	20 copies	Maize detected	
Soybean	50	20 copies	Soybean detected	

Maize: Gene specific detection of HMG sequence only found in maize. The limit of detection of genetically modified DNA is 0.01% or 20 copies.

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Soybean: Gene specific detection of lectin sequence only found in soybean. The limit of detection of genetically modified DNA is 0.01% or 20 copies.

Analysis of Real-time GMO Quantification

PCR System	PCR Cycles	LOQ	Test Result Comment
35S Maize Quant	50	1.00%	35S maize detected: 90.36% (SD 2.41)
GTS40-3-2 Soy Quant	50	1.00%	GTS40-3-2 soybean detected: 71.42% (SD 4.50)

35S Maize Quant: This system detects transgenic DNA sequences that are characteristic for the 35S promoter of the Cauliflower Mosaic Virus (CaMV). The amount of GMO in the sample was measured by Real-time PCR using the ABI 7500 (Applied Biosystems). Different amounts of transgenic DNA were analysed in order to generate standard curves for a naturally occurring reference gene and the CaMV 35S promoter DNA. Defined amounts of the sample DNA were analysed accordingly, and the GMO content determined by comparison to the standard curves.

The sample contains 90.36% (SD 2.41) of transgenic 35S promoter DNA in relation to total maize DNA. The limit of quantification (LOQ) is 1.00%.

GTS40-3-2 Soy Quant: The RRS PCR system detects transgenic DNA sequences that are characteristic for the CP4 EPSPS gene in soybean. The amount of GMO in the sample was measured by Real-time PCR using the ABI 7500 (Applied Biosystems). Different amounts of transgenic DNA were analysed in order to generate standard curves for a naturally occurring reference soy gene and sequences specific for the CP4 EPSPS gene. Defined amounts of the sample DNA were analysed accordingly, and the GMO content determined by comparison to the standard curves.

The sample contains 71.42% (SD 4.50) of transgenic CP4 EPSPS DNA in relation to total soybean DNA. The limit of quantification (LOQ) is 1.00%.

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Address: P.O. Box 29170, Melville, 2109

Certificate No: 12034924-1 Date of issue: 12-03-2012
Unique Sample No: 4924

Sample Identification: Cerefac Honey
Sample Description: Cereal
Sample Code / Batch: 6 0010 68625604
Sample size: ± 200 g
Priority: Standard

Date of Order: 05-03-2012
Date sample received: 05-03-2012

Test Requested:
Qualitative PCR screening: GMO double screen (35S and NOS)
Species detection: Maize, Soybean
Quantitative PCR: 35S Maize Quant, GFS40-3-2 Soy Quant

Test Sample: 2 x 2g

Analysis of GMO screening

PCR System	PCR Cycles	Limit of Detection	Test Result Comment
35S	50	20 copies	35S detected
NOS	50	20 copies	NOS detected

35S: The 35S PCR system detects transgenic DNA sequences that are characteristic for the 35S promoter of the Cauliflower Mosaic Virus (CaMV). The limit of detection of genetically modified DNA is 0.01% or 20 copies.

NOS: The NOS PCR system detects transgenic DNA sequences that are characteristic for the NOS terminator derived from *Agrobacterium tumefaciens*. The limit of detection of genetically modified DNA is 0.01% or 20 copies.

Analysis of species detection

PCR System	PCR Cycles	Limit of Detection	Test Result Comment
Maize	50	20 copies	Maize detected
Soybean	50	20 copies	Soybean not detected

Maize: Gene specific detection of HMG sequence only found in maize. The limit of detection of genetically modified DNA is 0.01% or 20 copies.

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Soybean: Gene specific detection of lectin sequence only found in soybean. The limit of detection of genetically modified DNA is 0.01% or 20 copies.

Analysis of Real-time GMO Quantification:

PCR System	PCR Cycles	LOQ	Test Result Comment
35S Maize Quant	50	3.00%	35S maize detected: 77.65% (SD 8.83)

35S Maize Quant: This system detects transgenic DNA sequences that are characteristic for the 35S promoter of the Cauliflower Mosaic Virus (CaMV). The amount of GMO in the sample was measured by Real-time PCR using the ABI 7500 (Applied Biosystems). Different amounts of transgenic DNA were analysed in order to generate standard curves for a naturally occurring reference gene and the CaMV 35S promoter DNA. Defined amounts of the sample DNA were analysed accordingly, and the GMO content determined by comparison to the standard curves.

The sample contains 77.65% (SD 8.83) of transgenic 35S promoter DNA in relation to total maize DNA. The limit of quantification (LOQ) is 3.00%.

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