



## Certificate of Analysis

Prolife Foods  
100 Maui Street, Pukete  
Hamilton 3200  
Attention: Harry Bomans  
Phone: 07 834 3333  
Email: harry.bomans@prolife.co.nz

Lab Reference: 16-11199  
Submitted by:  
Date Received: 24/08/2016  
Date Completed: 25/08/2016  
Order Number:  
Reference:

### Results Summary

#### 3in1 Honey Analysis

Laboratory ID	Sample ID	Dihydroxyacetone DHA	Methylglyoxal MG	Non-peroxide Activity NPA*	Hydroxymethylfurfural HMF
		mg/kg 10	mg/kg 4	%w/v phenol eq. 0.8	mg/kg 1
<i>Units Reporting Limit</i>					
16-11199-1	2301620	1,620	887	20.8	26

### Method Summary

**3in1** Determination of Dihydroxyacetone (DHA), Methylglyoxal (MG) and Hydroxymethylfurfural (HMF) by aqueous extraction, derivatisation, and UPLC analysis.

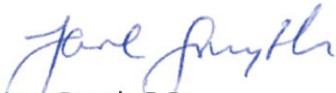
**NPA** Non-Peroxide Activity (NPA) values are not directly measured by the laboratory, but are calculated from the measured methylglyoxal concentration in the honey according to the requirements of the client. The calculation is based on published data<sup>(†)</sup> comparing the NPA and methylglyoxal concentration measured in a range of honey samples. These calculated values are not accredited by IANZ and do not imply that the honey is or is not manuka honey. NPA values less than 5 are an estimate based on extrapolation of the relationship between methylglyoxal and NPA

*(†) Isolation by HPLC and characterisation of the bioactive fraction of New Zealand manuka (Leptospermum scoparium) honey. C. J. Adams, et al. Carbohydrate Research 343 (2008) 651-659. And, Corrigendum to "Isolation by HPLC and characterization of the bioactive fraction of New Zealand manuka (Leptospermum scoparium) honey" [Carbohydr. Res. 343 (2008) 651]. Carbohydrate Research 344 (2009) 2609. C. J. Adams, et al.*

### Report Comments

Samples were received by Analytica Laboratories in acceptable condition unless otherwise noted on this report.

Production batch 2301620 relates to packing batch numbers 3079184 and 3079185.

  
Jane Smyth, B.Sc.  
Technologist



## Certificate of Analysis

Cambridge Bee Products Ltd  
63 Benn Rd, RD3  
Cambridge  
Attention: Rick Haddrell  
Phone:  
Email:

Lab Reference: 16-02800  
Submitted by:  
Date Received: 4/03/2016  
Date Completed: 7/03/2016  
Order Number:  
Reference:

### Results Summary

#### 3in1 Honey Analysis

Laboratory ID	Sample ID	Dihydroxyacetone DHA	Methylglyoxal MG	Non-peroxide Activity NPA*	Hydroxymethylfurfural HMF
	<i>Units Reporting Limit</i>	mg/kg 10	mg/kg 4	%w/v phenol eq. 0.8	mg/kg 1
16-02800-1	BT: 511613	928	489	14.6	23

### Method Summary

- 3in1** Determination of Dihydroxyacetone (DHA), Methylglyoxal (MG) and Hydroxymethylfurfural (HMF) by aqueous extraction, derivatisation, and UPLC analysis.
- NPA** Non-peroxide activity (NPA) is calculated from methylglyoxal using a conversion calculation supplied by the Unique Manuka Factor Honey Association (UMFHA).

### Report Comments

Samples were received by Analytica Laboratories in acceptable condition unless otherwise noted on this report.

Jacob Jaime, M.Sc.  
Senior Technologist



## Laboratory Test Report

Cambridge Bee Products Ltd  
63 Benn Rd, RD3  
Cambridge  
Attention: Rick Haddrell  
Phone: 07 827 3286  
Email: rick@haddrells.co.nz

Laboratory Reference: 15-13582  
Submitted by: Joel Perry  
Date Received: 10/11/2015  
Date Completed: 11/11/2015  
Order Number:  
Reference:

### Results Summary

Unless specified otherwise, all samples arrived in acceptable condition.

Laboratory ID	Sample ID	DHA Dihydroxyacetone mg/kg	MG Methylglyoxal mg/kg	NPA* phenol equivalent %w/v	HMF Hydroxymethylfurfural mg/kg
15-13582-1	BT:3011516	1,360	582	16.2	22

\*These results are outside the IANZ accreditation scope of the laboratory.

### Method Summary

Samples were analysed as received by the Laboratory using the 3-in-1 honey method, which involves aqueous extraction, derivatisation, and analysis by UPLC with diode array detection. NPA is calculated from Methylglyoxal using the conversion calculation supplied by UMFHA.

	DHA (mg/kg)	MG (mg/kg)	NPA (%w/v)	HMF (mg/kg)
Reporting Limits =	10	4.0	0.8	1

### Analyst Comments:

Lisa Zheng, MSc.  
Technologist  
Analytica Laboratories Ltd.



All tests reported herein have been performed in accordance with the laboratory's scope of accreditation, with the exception of tests marked \*, which are not accredited.