



## Certificate of Analysis

Grade One Honey Ltd  
PO Box 4145  
Timaru 7942  
Attention: Di Gebbie  
Phone: 027 426 4140  
Email: admin@gradeonehoney.co.nz

Lab Reference: 22-43351  
Submitted by:  
Date Received: 28/11/2022  
Testing Initiated: 30/11/2022  
Date Completed: 12/06/2023  
Order Number: 22LC60 LAR22-05  
Reference: 22LC60 LAR22-05

### Report Comments

Samples were collected by yourselves (or your agent) and analysed as received at Analytica Laboratories. Samples were in acceptable condition unless otherwise noted on this report.  
Specific testing dates are available on request.

AMENDED REPORT. This report replaces in full a previous version R00 sent on 30/11/22. Excluding DHA requested.

### Results Summary

#### 3in1 in Honey

Laboratory ID	Sample ID	Methylglyoxal (MG/MGO)	Non-Peroxide Activity* (NPA)	Hydroxymethylfurfural (HMF)
	Units Reporting Limit	mg/kg 8	%w/v phenol eq. 1.3	mg/kg 1
22-43351-1	22LC60	642	17.2	19.8

#### 3in1 in Honey Approver:

Gurmeet Singh, Dip. Tech. (Sci)  
Senior Technician

### Method Summary

#### 3in1

Determination of Dihydroxyacetone (DHA), Methylglyoxal (MG/MGO) and Hydroxymethylfurfural (HMF) by aqueous extraction, derivatisation, and UPLC (diode array) analysis in accordance with in-house procedures.

#### 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

<sup>(†)</sup> 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.



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Lab Reference: 22-43351  
Submitted by:  
Date Received: 28/11/2022  
Testing Initiated: 30/11/2022  
Date Completed: 5/12/2022  
Order Number: 22LC60 LAR22-05  
Reference: 22LC60 LAR22-05

### Report Comments

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Specific testing dates are available on request.

### Results Summary

#### MPI Manuka Classification for Honey\*

Laboratory ID	Sample ID	MPI Manuka Classification*
22-43351-1	22LC60	MONOFLORAL MANUKA

#### MPI Manuka Classification for Honey\* Approver:

Alesha Avery, BSc(Tech),  
Laboratory Technician

#### MPI Manuka DNA in Honey

Laboratory ID	Sample ID	Manuka DNA
Units Reporting Limit		Cq
22-43351-1	22LC60	28.54

#### MPI Manuka DNA in Honey Approver:

Alesha Avery, BSc(Tech),  
Laboratory Technician

#### MPI Manuka Markers in Honey

Laboratory ID	Sample ID	4-Hydroxyphenyllactic acid (4-HPLA)	2-Methoxybenzoic acid (2-MBA)	2'-Methoxyacetophenone (2'-MAP)	3-Phenyllactic acid (3-PLA)
Units Reporting Limit		mg/kg 0.80	mg/kg 0.80	mg/kg 0.80	mg/kg 20
22-43351-1	22LC60	8.3	8.8	25	1,000