KAIORA™

CERTIFICATE OF ANALYSIS

Product Description:	Processed 700+ Manuka Honey
Batch No:	BL23081
Manufacture Date:	4/04/2023
Best Before:	4/04/2026
Country Compliance	Germany

TEST	SPECIFICATION	RESULTS	PERFORMED BY
MG Methylglyoxal Test	Not less than applied Label	N/A	
Hydroxy Methyl Furfural Test	Not greater than 40mg/kg	N/A	
3-Phenyllactic acid	at a level greater than or equal to 400 mg/kg	1,110	Hills Laboratories
2'-Methoxyacetophenone	at a level greater than or equal to 5 mg/kg	25	Hills Laboratories
2-Methoxybenzoic acid	at a level greater than or equal to 1 mg/kg	17	Hills Laboratories
4-Hydroxyphenyllactic acid	at a level greater than or equal to 1 mg/kg	9.6	Hills Laboratories
Aerobic Plate Count (microbiology) Test	Not greater than 40mg/kg	N/A	
Moisture Test	Less than 20%	N/A	
Pollen Test	As tested and reported	N/A	
Tutin Test	Not greater than 0. 7mg/kg	PASS	Hills Laboratories
Yeast & Mould Test	Not greater than 1000 cfu/gram	N/A	
C4 Sugar Test	As tested and reported	N/A	
GLYPHOSATE	<0.010	N/A	
Mineral, Trace Elements and Heavy Metals Available upon request:			Not Requested

The above test includes: aluminium, arsenic, copper, chromium, iron, mercury, lead and zinc in honey.

Samples are tested as received.

Date Reported: 16/04/2023 Signed: B.M

Report Number : NZL2023/SBH1/333T

Hill Laboratories
TRIED, TESTED AND TRUSTED

R J Hill Laboratories Limited
28 Duke Street Frankton 3204
Private Bag 3205
Hamilton 3240 New Zealand

T 0508 HILL LAB (44 555 22)
T +64 7 858 2000
E mail@hill-labs.co.nz
W www.hill-laboratories.com

Certificate of Analysis

Client:	Springbank Honey Limited C/o - Kai Ora Honey Ltd	**Lab No:**	3142055 HMM5ASP-1v1
Contact:	Steven Brown C/- Springbank Honey Limited 1227 Oxford Road RD 1 Rangiora 7471	**Date Received:**	21-Dec-2022
		Date Reported:	21-Dec-2022
		Quote No:	108231
		Order No:	
		Client Reference:	
		Submitted By:	Emma MacIntyre

Sample Type: Honey

Sample Name:		BL23081
Lab Number:		3142055.1
MPI Manuka Classification		
MPI Manuka Honey Classification		Monofloral Manuka Honey
3-Phenyllactic acid (3-PA)	mg/kg	1,110
2'-Methoxyacetophenone (2'-MAP)	mg/kg	25
2-Methoxybenzoic acid (2-MBA)	mg/kg	17.0
4-Hydroxyphenyllactic acid (4-HPA)	mg/kg	9.6
Manuka DNA	Cq	27.01

MPI Manuka Classification Report: This report may represent a subset of the requested tests.

Analyst's Comments

Sample 1 Comment:
The results presented on the Certificate of Analysis have been rounded to an appropriate number of significant figures, based on the Uncertainty of Measurement of the methods performed. The 'MPI Manuka Honey Classification' has been determined using unrounded values. In cases where one or more values were close to the critical levels (as defined by MPI), there may be a seeming inconsistency between the classification and the rounded values reported.

Summary of Methods

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively simple matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis. A detection limit range indicates the lowest and highest detection limits in the associated suite of analytes. A full listing of compounds and detection limits are available from the laboratory upon request.
Unless otherwise indicated, analyses were performed at Hill Laboratories, 28 Duke Street, Frankton, Hamilton 3204.

Sample Type: Honey

Test	Method Description	Default Detection Limit	Sample No
MPI 5 Attributes Tests			
MPI Manuka Honey Classification	Evaluation of results against Ministry of Primary Industries (MPI) criteria for classification of monofloral and multifloral Manuka honey. General Export Requirements for Bee Products - 29 January 2018.	-	1
Manuka Honey Chemistry Profile			
3-Phenyllactic acid (3-PA)	Aqueous solvent extraction, dilution. LC-MSMS analysis. **RLP Official Test 10.05**.	5 mg/kg	1
2'-Methoxyacetophenone (2'-MAP)	Aqueous solvent extraction, dilution. LC-MSMS analysis. **RLP Official Test 10.05**.	0.5 mg/kg	1
2-Methoxybenzoic acid (2-MBA)	Aqueous solvent extraction, dilution. LC-MSMS analysis. **RLP Official Test 10.05**.	0.5 mg/kg	1
4-Hydroxyphenyllactic acid (4-HPA)	Aqueous solvent extraction, dilution. LC-MSMS analysis. **RLP Official Test 10.05**.	0.5 mg/kg	1
Manuka Honey PCR Profile			

Sample Type: Honey			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Manuka DNA	Quantification of Manuka (*Leptospermum scoparium*) DNA by real time PCR. MPI Technical - Paper No: 2017/31 (modified). **RLP Official Test 10.04**.	> 36 Cq	1

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Testing was completed on 21-Dec-2022. For completion dates of individual analyses please contact the laboratory.

Samples are held at the laboratory after reporting for a length of time based on the stability of the samples and analytes being tested (considering any preservation used), and the storage space available. Once the storage period is completed, the samples are discarded unless otherwise agreed with the customer. Extended storage times may incur additional charges.

Helen McGowan BSc (Tech)
Operations Support - Food & Bioanalytical

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R J Hill Laboratories Limited
28 Duke Street Frankton 3204
Private Bag 3205
Hamilton 3240 New Zealand

T 0508 HILL LAB (44 555 22)
T +64 7 858 2000
E mail@hill-labs.co.nz
W www.hill-laboratories.com

Certificate of Analysis

Client:	Springbank Honey Limited C/o - Kai Ora Honey Ltd	**Lab No:**	3142055 HTASP-1v1
Contact:	Steven Brown C/- Springbank Honey Limited 1227 Oxford Road RD 1 Rangiora 7471	**Date Received:**	21-Dec-2022
		Date Reported:	21-Dec-2022
		Quote No:	108231
		Order No:	
		Client Reference:	
		Submitted By:	Emma MacIntyre

Sample Type: Honey

Sample Name:		BL23081
Lab Number:		3142055.1
Tutin Analysis		
Tutin Result Evaluation	Pass/Fail	PASS
Tutin	mg/kg	< 0.010
MRL as per Tutin in Honey Food Standard 2016	mg/kg	0.70

Tutin Analysis Report: This report may represent a subset of the requested tests.

Summary of Methods

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively simple matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis. A detection limit range indicates the lowest and highest detection limits in the associated suite of analytes. A full listing of compounds and detection limits are available from the laboratory upon request. Unless otherwise indicated, analyses were performed at Hill Laboratories, 28 Duke Street, Frankton, Hamilton 3204.

Sample Type: Honey

Test	Method Description	Default Detection Limit	Sample No
Individual Tests			
Tutin Analysis in Honey	Solvent extraction, SPE cleanup. Analysis by LCMSMS. Results are representative of the liquid honey, not the sample as a whole. *Please note the Pass/Fail criteria is for extracted honey only. For comb honey tutin criteria please refer to the MPI Food Standard: Tutin in Honey.* <u>Tutin Result Evaluation (PASS/FAIL)</u> The PASS/FAIL result is based on comparison of the tutin result with the "Food Standard: Tutin in Honey (2016)". A result that falls at or BELOW the maximum permitted tutin level will give a PASS result. A result that falls ABOVE the maximum permitted tutin level will give a FAIL result. <u>Individual Sample Testing Recommended?</u> Where a tutin result for a composited sample is above the maximum permitted level, it is recommended that the individual samples are retested. Please contact the laboratory to arrange for individual sample retesting. **RLP Official Test 8.42**.	0.010 mg/kg	1

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This certificate of analysis must not be reproduced, except in full, without the written consent of the signatory.

Helen McGowan BSc (Tech)
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