

MANUKA OIL EXTRACT LEPTOSPERMUM SCOPARIUM



NOVEL FUNCTIONAL INGREDIENTS
FOR MULTI-PURPOSE FORMULATIONS



CAMPO RESEARCH PTE LTD

Level 30, 6 Battery Road, Singapore 049909

Tel: (65) 63833203 / 202 / 63833631 Direct Fax (65) 63833632 / 63834034

Email: sales@campo-research.com Website: <http://www.campo-research.com>

CAMPO® Multi-Purpose Cosmetic Base Chemicals & Active Ingredients

CAMPO® Novel Functional Active Cosmetic Ingredient & Raw Materials

Manuka Extract

Leptospermum scoparium

Commonly referred to as Tea-tree, *Leptospermum* is distributed in Australia, South East Asia (i.e. the Malay Peninsula, Sumatra, Borneo, Java, Philippines, Sulawesi, Thailand, Flores, Moluccas, southern Burma and New Guinea) and New Zealand. Whilst *Leptospermum* occupies a variety of habitats from coastal dunes to high mountain peaks, it is most commonly found in wet or periodically wet substrates that are acidic and low in nutrient content.

Leptospermum. A rather small genus of shrubs or small trees of the family Myrtaceae, sub-family Leptospermoideae. It currently comprises 85 recognized species. The genus *Leptospermum* was first recognized by Johann Reinhold Forster and his son Johann Georg Adam Forster when they published the name *L. scoparium* Forst. & G. Forst in 1776.

To possess hard wood is a characteristic of the genus, and in those species which attain sufficient size it is useful for small objects. It is related that the aborigines of Australia use the wood of one for spears. Most of them are called 'Tea Tree' because their leaves can be made into a beverage like tea.

ETHNOBOTANY:

A very refreshing tea is made from the leaves, used for fever and lassitude. In the Moluccas, the mountaineers distil a little volatile aromatic oil from the plant, which they inhale for bronchitis and use as an embrocation for rheumatism. The oil was obtained from its leaves and twigs containing terpenes, particularly pinene, and citral. Its extract has also been noted to ameliorate skin problems such as itchiness, rashes as well as accelerate healing of skin wounds and cuts.

Campo Manuka Extracts are available in 3 types; an essential oil, an oil extract with ceramide and an aqueous extract. Both types exhibit anti-microbial properties, which is bacteriostatic. The oil extract is also applied in cosmetic formulations as colourings. It is ideal for body oils and emulsions made especially for sensitive skin.

Technical Specification:

PRODUCT NAME:	CAMPO MANUKA OIL EXTRACT
OTHER NAME:	Leptospermum scoparium oil
PRODUCT NUMBER:	97.129/63
SPECIES:	Leptospermum scoparium
INCI NAME: (Proposed)	Leptospermum scoparium Extract and Ceramide 3 oil
PLANT PARTS USED:	flowers (90%) and berries (10%)
APPEARANCE:	Clear, red, oil
ODOUR:	Characteristics
SPECIFIC GRAVITY:	0.910 - 0.980
REFRACTIVE INDEX:	1.430 - 1.465
VISCOSITY:	25 - 35 (Mpa.s)
WATER CONTENT:	010 max.
RECOMMENDED LEVEL OF USE:	2-5%

Technical Specification:

PRODUCT NAME:	CAMPO MANUKA AQUEOUS EXTRACT
OTHER NAME:	Leptospermum scoparium aqueous Extract
PRODUCT NUMBER:	97.129/67
SPECIES:	Leptospermum scoparium
INCI NAME: (Proposed)	Leptospermum scoparium Extract
PLANT PARTS USED:	flowers, leaves and berries
APPEARANCE:	Clear, dark red liquid
ODOUR:	woody aromatic
pH:	3.4 - 6.8
SPECIFIC GRAVITY:	1.010 - 1.090
REFRACTIVE INDEX:	1.370 - 1.445
SOLUBILITY:	Complete in water

Technical Specification:

PRODUCT NAME:	CAMPO MANUKA ESSENTIAL OIL
OTHER NAME:	Leptospermum Scoparium Floral Essence
PRODUCT NUMBER:	97.129/637
SPECIES:	Leptospermum scoparium
INCI NAME: (Proposed)	Leptospermum Scoparium Branch/Leaf Oil
PLANT PARTS USED:	Leaves, Branches, Flowers
APPEARANCE:	Clear, dark red, oil
ODOUR:	Characteristics
SPECIFIC GRAVITY:	0.900 - 0.990
REFRACTIVE INDEX:	1.320 - 1.455

CONCLUSIONS

The test article **Campo Manuka Oil Extract** was assessed for its potential to induce gene mutations according to the incorporation test (experiment I) and the preincubation test (experiment II) using Salmonella typhimurium strains TA 1553, TA 1537, TA 100 and TA 102.

The assay was performed in two independent experiments both with and without liver microsomal activation. Each concentration, including the controls, was tested in triplicate. The **Campo Manuka Oil Extract** was tested at the following concentrations:

33.3; 100.0; 333.3; 1000.0; 2500.0; and 5000.0 up/plate

No toxic effects occurred in the test groups with and without metabolic activation in experiment I and II in all strains used.

The plates incubated with the test article showed normal background growth up to 5000.0 up/plate with and without S9 mix in all strains used.

No substantial increases in revertant colony numbers of any of the five tester strains were observed following treatment with **Campo Manuka Oil Extracts** at any dose level, either in the presence or absence of metabolic activation (S9 mix). There was also no tendency of higher mutation rates with increasing concentration in the range below the generally acknowledged border of significance.

A slight decrease (0.001%) in revertant colony numbers was observed in strain TA 102 at 333.3 and 1000.0 up/plate in experiment I in the presence of metabolic activation. However, this effect is considered not to be relevant since it could not be reproduced in normally more sensitive pre-incubation assay.

Appropriate reference mutagens were used as positive controls and showed a distinct increase in induced revertant colonies.

In conclusion, it can be stated that during the described mutagenicity test and under the experimental conditions reported, the test article did not induce point mutations by base pair change or frameshifts in the genome of the strains used.