

SYNERGIO

BiomEco™ 94

GUARANTEERING PRODUCT
SHELF LIFE WHILE
PROTECTING THE SKIN
MICROBIOME AND PLANET





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Featuring a range of natural antimicrobial technologies, capable of targeting specified microorganisms at low concentration

PRODUCT OVERVIEW	Multifunctional synergistic blend with focus on broad spectrum antimicrobial activity. Considered as a preservative free technology; Microbiome-friendly; COSMOS certified; natural by ISO 16128; hypoallergenic; sustainable; eco-friendly
INCI	Saccharomyces/Sugarcane Juice Extract Ferment extract (or Maltol) Styrax Benzoin Gum and Sapindus Mukorossi Fruit extract
FORM	White and light beige powders. Light sweet odor
REGULATION	Widely approved around the globe including China
COSMETIC APLPLICATION	Designed for emulsion-based formulas pH range 4.0-8.0
DOSAGE	Recommended range 0.3-0.5 wt.% Recommended level 0.4 wt.%

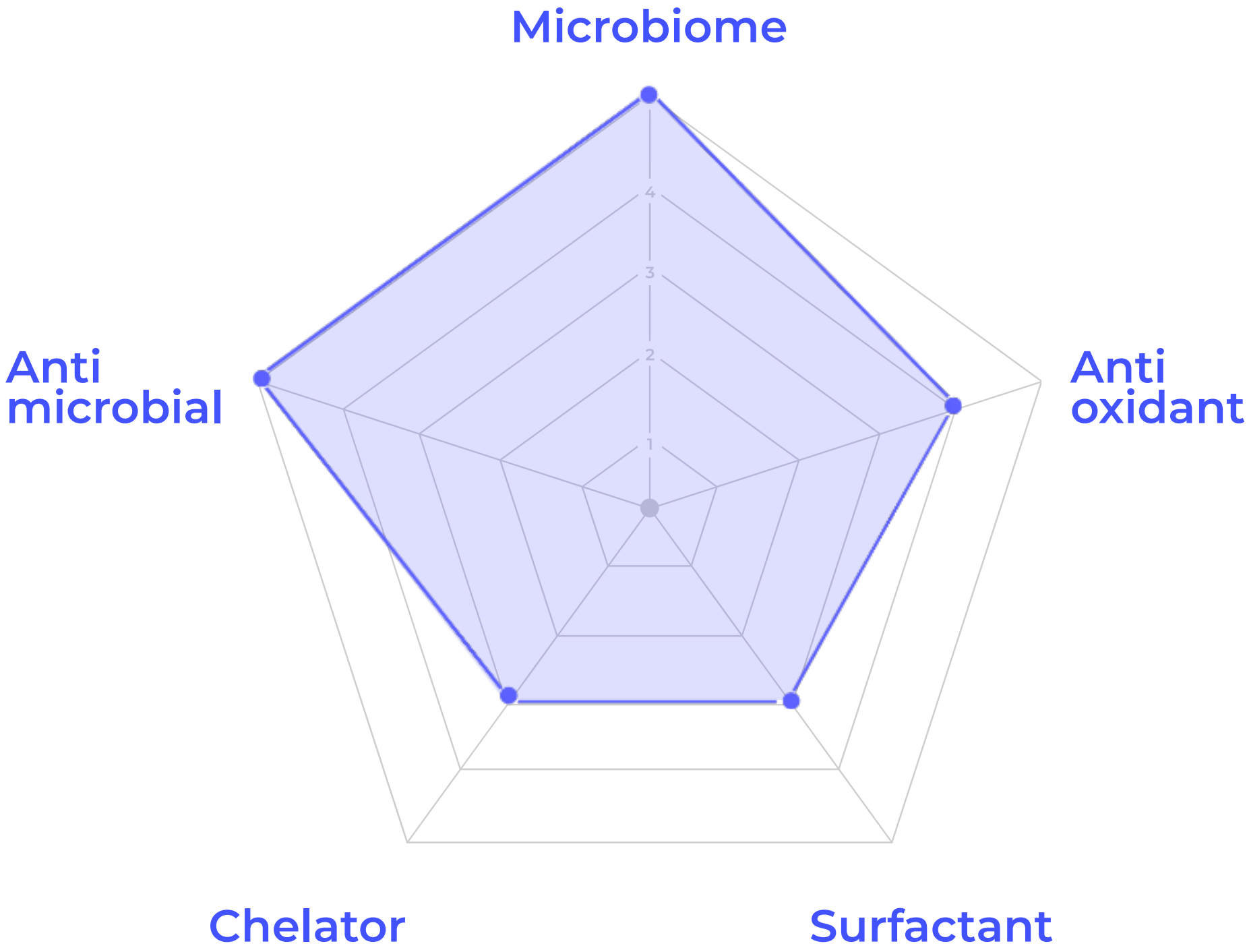


Multifunctional

SYNERGIO’s looks to nature for inspiration – utilizing plant mechanisms and bioactives to create smart ingredients that provide a specific function, while being better for the body and the environment

BiomEco™ products for the personal care industry are multifunctional, with a focus on anti-microbial activity. Like nature, many bioactives and mechanisms perform multiple roles. BiomEco™ ingredients contain a synergistic mixture of plant-based compounds to provide focused anti-microbial performance and “preservative-free” capabilities

THE BIOMECO™ 94 IS A PATENTED TECHNOLOGY WHICH IS BASED ON A MULTIFUNCTIONAL TECHNOLOGY PLATFORM FOR PERSONAL CARE FORMULAS AND HAS FIVE PERFORMANCE-ORIENTED PROPERTIES:



BROAD SPECTRUM ANTI-MICROBIAL
EFFICACY-MEETS ISO 11930

**BiomEco™ 94 Shows
Effectiveness in
Preservation Efficacy
Test (Challenge Test)**

The antimicrobial effectiveness
of BiomEco™ 94 was tested
using 0.4% in a typical body
lotion according to ISO 11930

MICROORGANISM	INOCULATION (CFU/GR)	LOG REDUCTION		
		7 DAYS	14 DAYS	28 DAYS
S. AUREUS	3.1·10 ⁶	4	3	4
E.COLI	7.7·10 ⁶	5	5	4
P. AEUROGINOSA	6.0·10 ⁴	3	3	3
C. ALBICANS	3.0·10 ⁵	1	2	2
A. BRASILIENSIS	8.9·10 ⁴	2	3	3
CONCLUSION	Meets ISO 11930			



VISIBLE EFFICACY

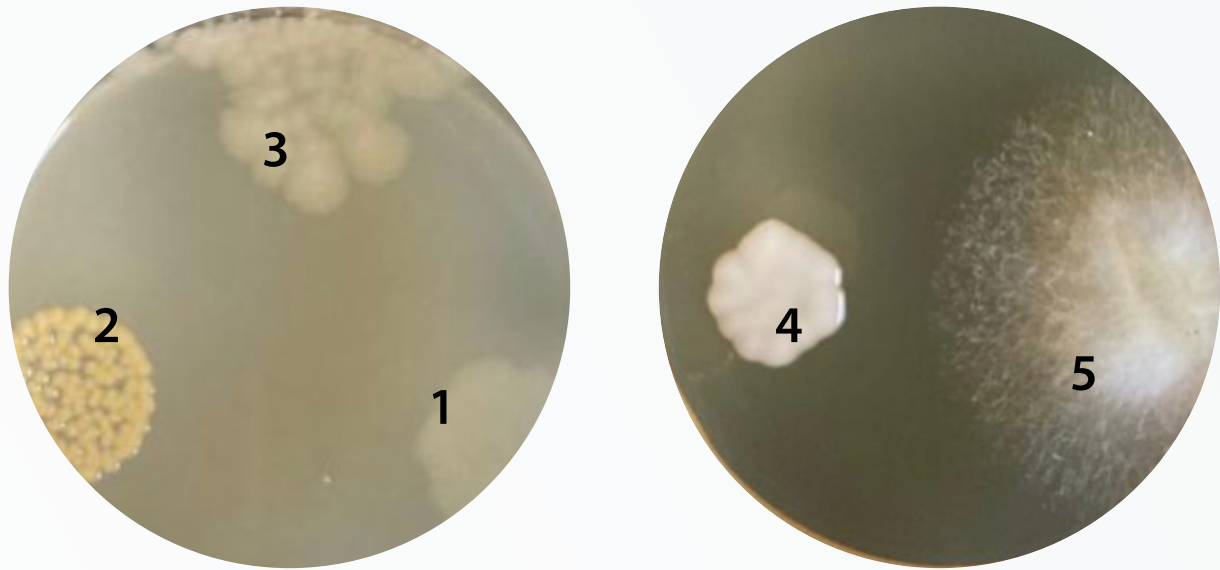
BiomEco™ 94 Shows
Formula-independent
Anti-microbial Activity

Bacteria inoculum Fungi inoculum

With
BiomEco™ 94



Without
BiomEco™ 94



Tested ISO 11930 microorganisms: 1. *Escherichia coli* 2. *Staphylococcus aureus*
3. *Pseudomonas aeruginosa* 4. *Candida albicans* 5. *Aspergillus brasiliensis*

Stability Data

Physical and Organoleptic properties of a body lotion containing 0.4% of BiomEco™ 94 were evaluated after 12 weeks at RT (25°C) and 45°C

PARAMETER	ACTIVITY (CONC. 0.4%)
VISCOSITY	No significant change
pH	No significant change
ODOR	Detectable - easily masked
APPEARANCE	No significant change



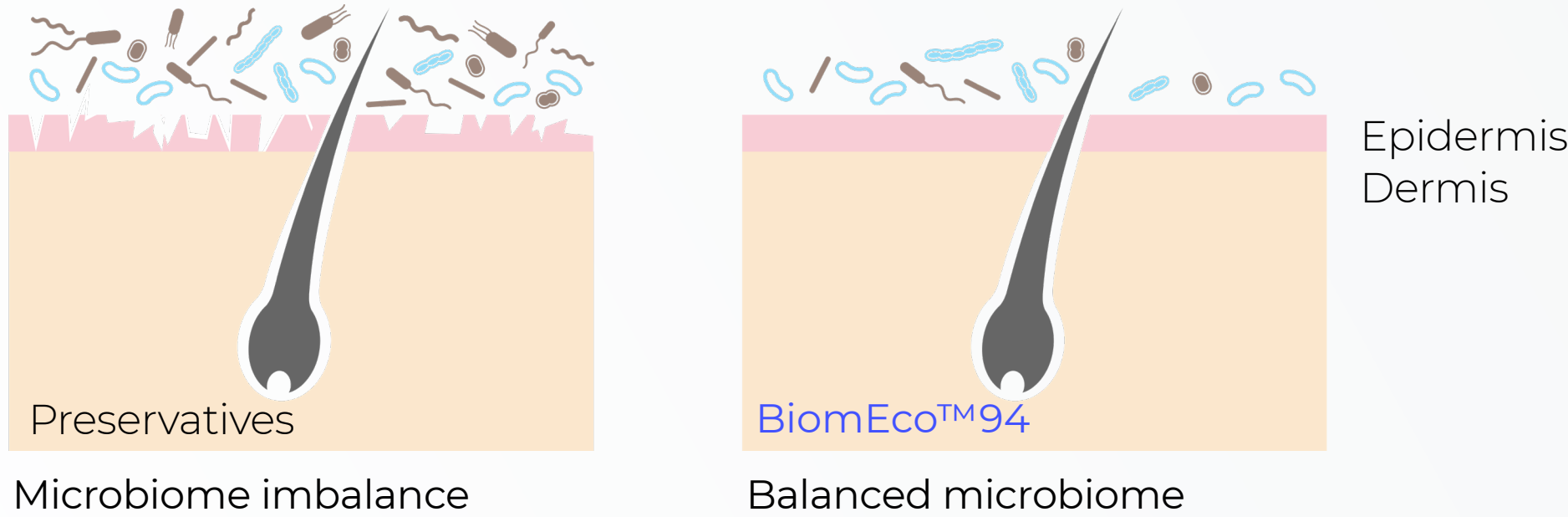
PROTECTS BOTH THE SKIN MICROBIOME AND THE PRODCUT

Microbiome-Friendly

While synthetic preservatives kill all microbiome bacteria, BiomEco™ 94 has only a slight influence on the microbiome

Microorganisms	INOCULATION (CFU/GR)		RESULTS (CFU/GR)			
	P*+SE**	SE	24 hr		7 days	
			P+SE	SE	P+SE	SE
BiomEco™ 94	1.5·10 ⁸	1.2·10 ⁶	0	0	0	0
Commercial phenoxyethanol based preservtive	1.5·10 ⁸	1.2·10 ⁶	0	2	0	4
Commercial mixture of parabens and phenoxyethanol	1.5·10 ⁸	1.2·10 ⁶	0	4	3	4
Unpreserved lotion	1.5·10 ⁸	1.2·10 ⁶	0	0	0	0

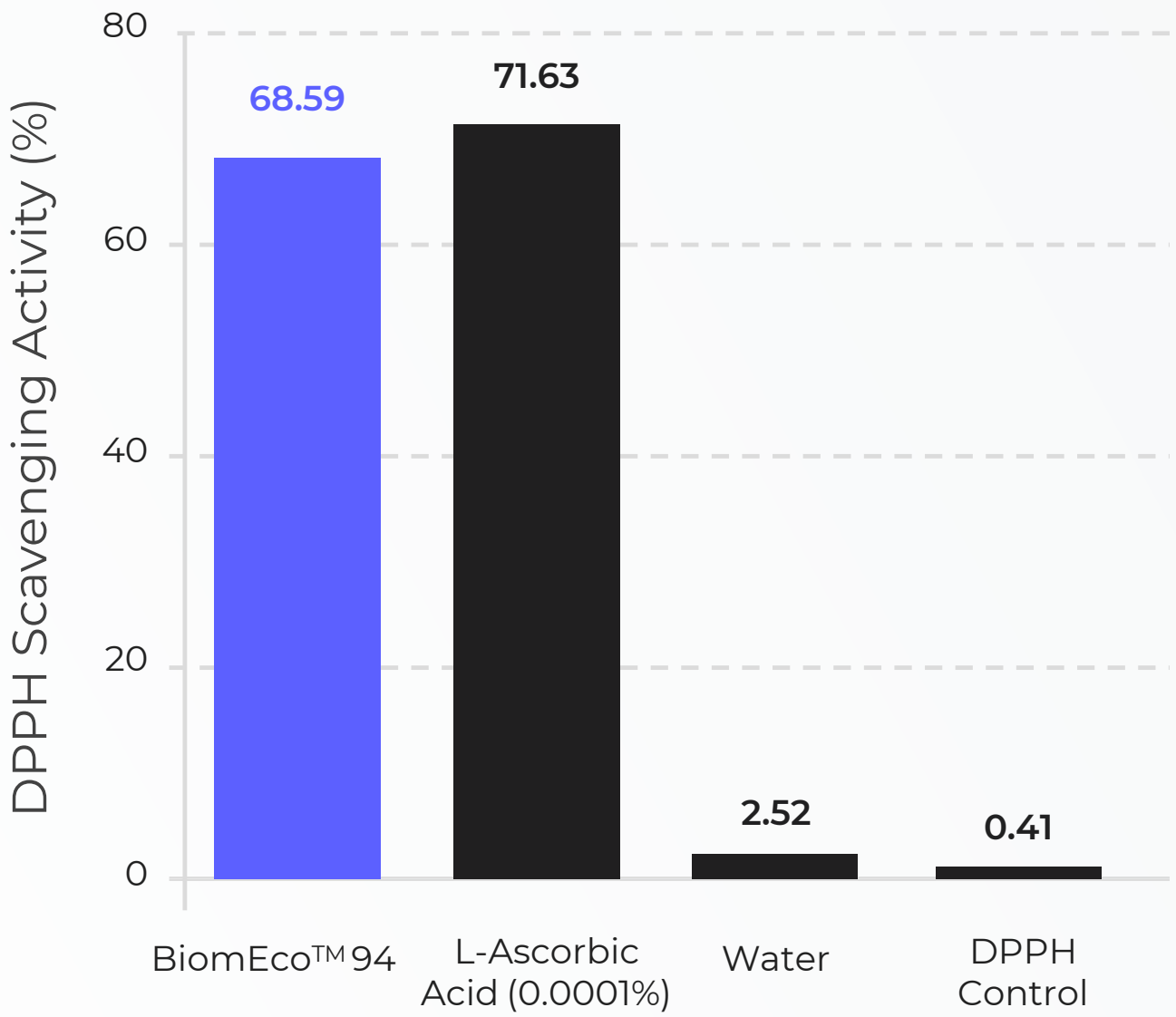
*P - Pooled micro. collected from human skin **SE - *Staphylococcus epidermidis*



PROVEN ANTIOXIDANT AND CHELATOR PROPERTIES

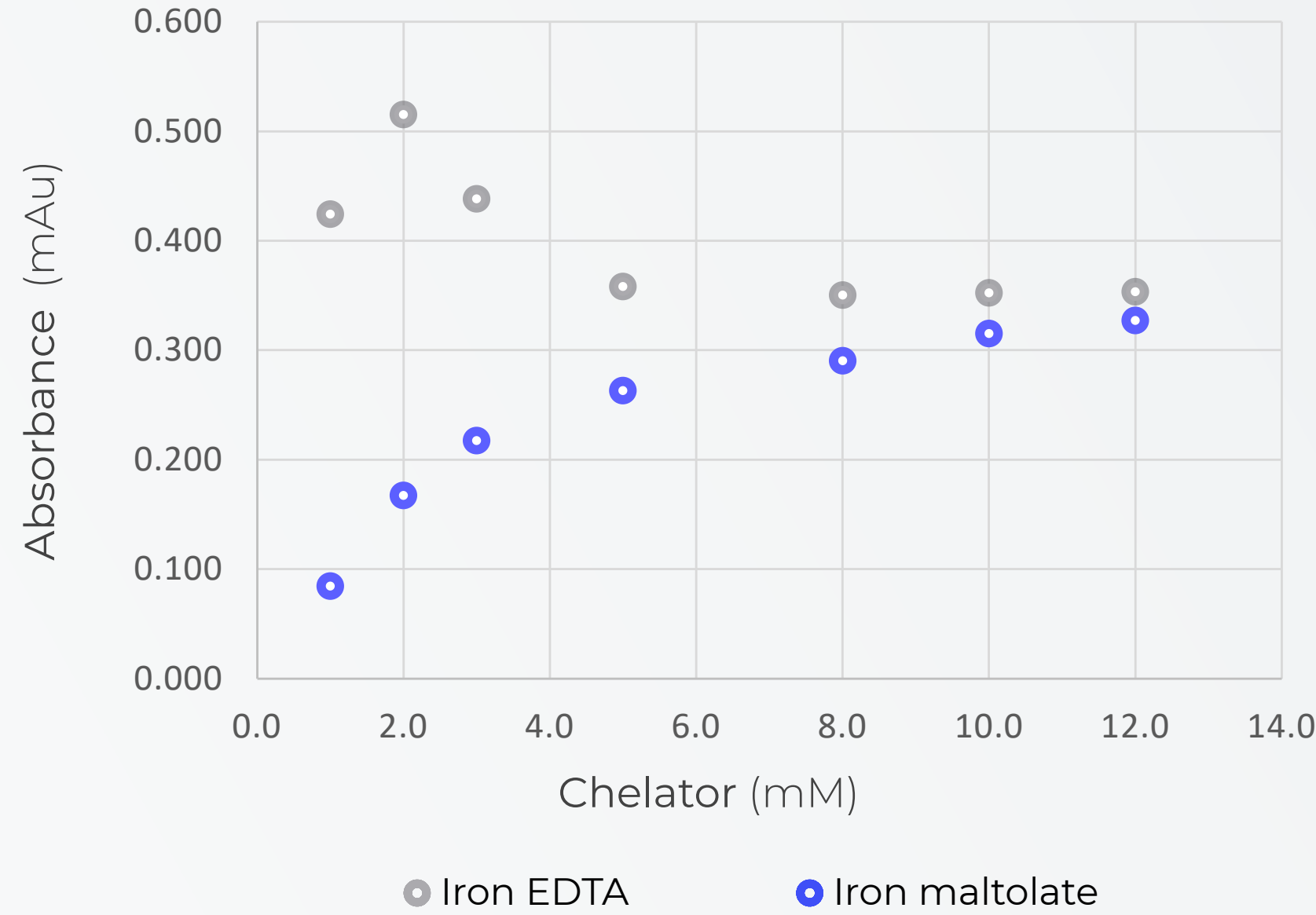
Antioxidant

The antioxidant activity of BiomEco™ 94 is reflected by free-radical scavenging activity (RSA). See below:



Iron Complextion Comparison - Maltol versus EDTA

BiomEco™ 94 has chelation properties equivalent to EDTA



BIOMECOTM 94 IS PROVEN TO BE SAFE IN CLINICAL STUDIES

HRIPT Study -
Hypoallergenic

Study Objectives

This study intended to determine the allergic reactions of BiomEco™ 94 lotion in clinical tests in a panel of healthy human subjects using the Human Repeated Insult Patch Test

Summary of Results

A Human Repeated Insult Patch Test (HRIPT) was performed on a group of 50 subjects. Results: no reaction was observed in any of the 50 subjects

Conclusion

In this HRIPT study, BiomEco™ 94 did not induce contact dermal irritation and/or sensitization in human subjects

Skin -
Sensitive

A single insult patch test was performed on a group of 50 volunteers (10 volunteers with sensitive skin).
No irritation was observed in any of the 50 volunteers

SKIN RESPONSE EVALUATION AFTER REMOVAL OF APPLICATION	1 HR.	24 HR.	48 HR.
40 subjects with normal skin	0	0	0
10 subjects with sensitive skin	0	0	0



Safety Profile

- Wide history of safe use
- Low toxicological safety risk
- Low phototoxicity risk
- Protein-free - less than 200 ppm
- Allergen-free - less than 10 ppm
- Free of heavy metals - less than 10 ppm
- For further safety information, please refer to SDS

Sustainability

Picking	Bio-based and renewable raw materials; plants unharmed after resin or fruit harvesting; ethical sourcing; respect for biodiversity
Processing	Green-chemistry: hydro-ethanolic extraction or fermentation; waste-prevention: use of spent biomass for energy production and water re-purposing
Product	Biodegradable

Consumer Claims

- Plant-based
- Non-GMO
- Natural: COSMOS certified; compliance with ISO 16128
- Biodegradable
- Preservative-free
- Not tested on animals
- Sustainable
- Ethically sourced
- Compliance to clean-cosmetic definition: Credo, Sephora, Whole Foods



Available at


ULPROSPECTOR.COM

Contact Us

Email Dr. Rachel Lutz at sales@synergio.com
and request samples to enhance your product!

Formulation Tips

Shelf Life

18 months from date of manufacture

Storage Conditions

BiomEco™ 94 must be stored tightly
closed at room temperature.

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