

SYNERGIO

BiomEco™ 98

GUARANTEERING PRODUCT  
SHELF LIFE WITH  
GRAS PRESERVATION  
INGREDIENTS WHILE  
PROTECTING THE SKIN  
MICROBIOME AND PLANET







GUARANTEEING PRODUCT  
SHELF LIFE WHILE  
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Featuring a range of natural antimicrobial technologies, capable of targeting specified microorganisms

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 Resin extract and Caprylic/Capric Glycerides Cinnamomum Cassia oil
FORM	White powder with a light sweet scent Oils with slight vanilla-cinnamon scent, opaque and yellowish in color
REGULATION	Widely approved around the globe including China All ingredients are GRAS approved
COSMETIC APLLICATION	Designed for emulsion-based formulas pH range 6.0-8.0
DOSAGE	Recommended range 0.4-0.8 wt.% Recommended level 0.702 wt.%

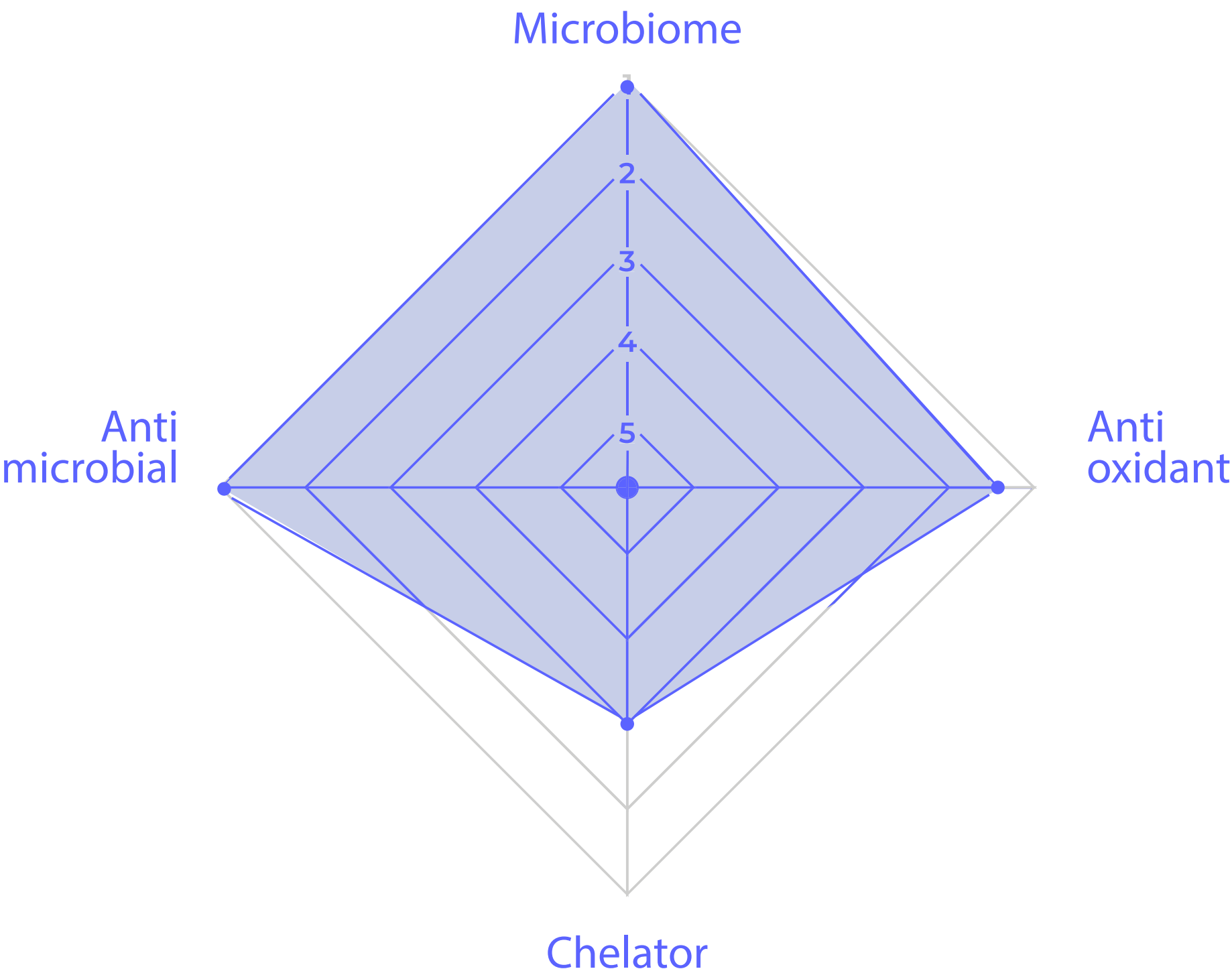


# Multifunctional

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™ 98 IS A PATENTED TECHNOLOGY WHICH IS BASED ON A MULTIFUNCTIONAL TECHNOLOGY PLATFORM FOR PERSONAL CARE FORMULAS AND HAS FOUR PERFORMANCE-ORIENTED PROPERTIES:



PROVEN ANTI-MICROBIAL EFFICACY

BiomEco™ 98 Shows Effectiveness in Preservation Efficacy Test (Challenge Test)

The antimicrobial effectiveness of BiomEco™ 98 was tested using 0.702% in a typical body lotion according to the ISO 11930 protocol

MICROORGANISM	INOCULATION CFU/GR	LOG REDUCTION		
		7 DAYS	14 DAYS	28 DAYS
S. AUREUS	1.1·10 <sup>7</sup>	7	7	7
E. COLI	2.6·10 <sup>6</sup>	4	6	6
P. AEUROGINOSA	4.2·10 <sup>6</sup>	6	6	6
C. ALBICANS	7.5·10 <sup>4</sup>	5	5	5
A. BRASILIENSIS	1.3·10 <sup>5</sup>	5	5	5
CONCLUSION	Meets ISO 11930			



## VISIBLE EFFICACY

# BiomEco™ 98 Shows Formula-independent Anti-microbial Activity

Tested ISO 11930 microorganisms:

1. *Escherichia coli*
2. *Staphylococcus aureus*
3. *Pseudomonas aeruginosa*
4. *Candida albicans*
5. *Aspergillus brasiliensis*

With  
BiomEco™ 98

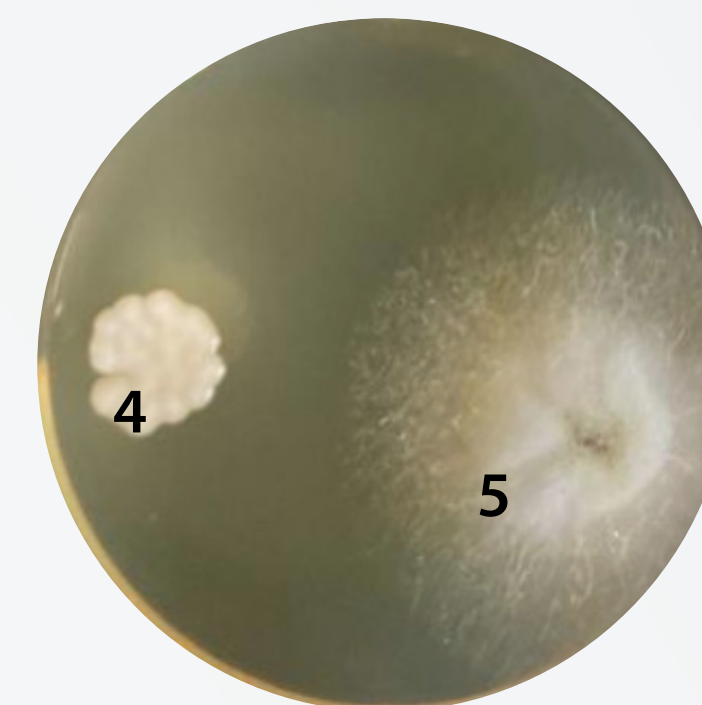
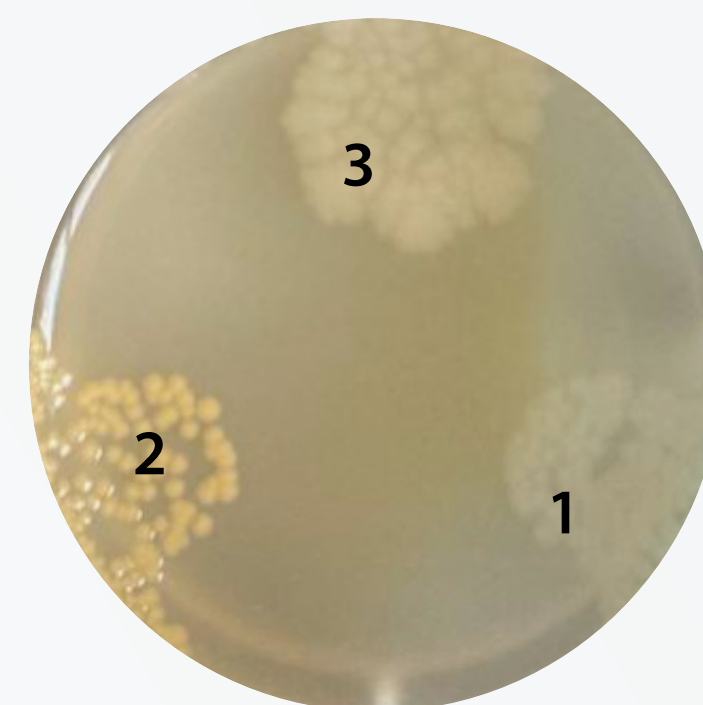
Bacteria inoculum



Fungi inoculum



Without  
BiomEco™ 98





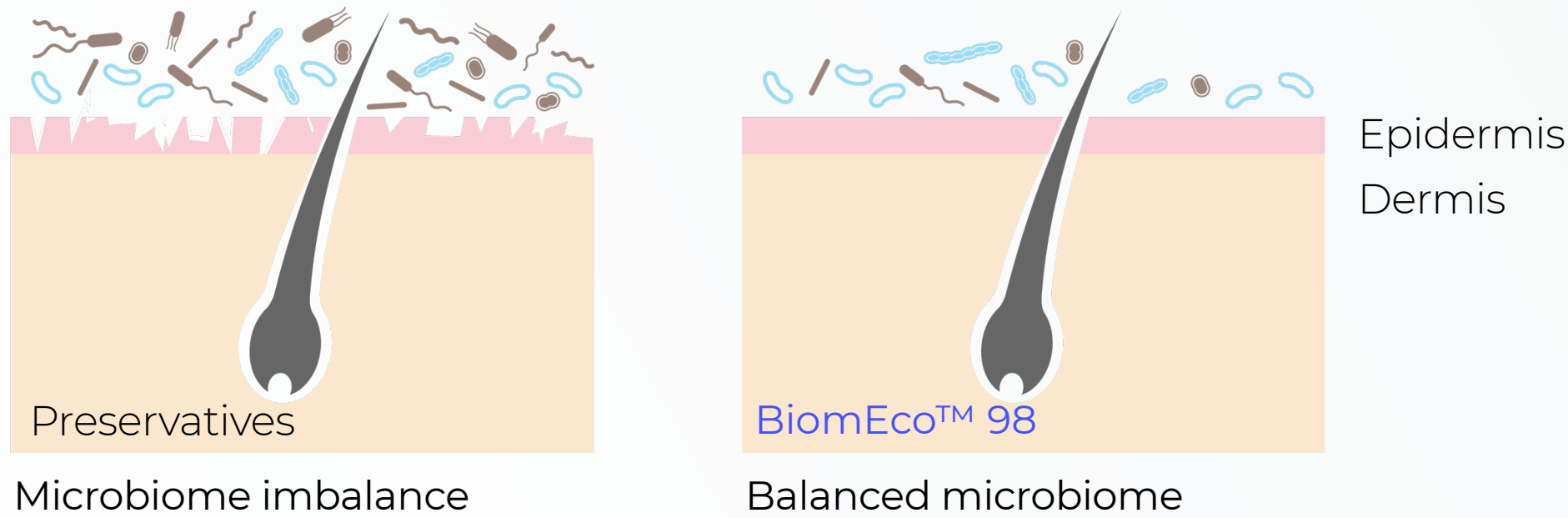
PROTECTS BOTH THE SKIN MICROBIOME AND THE PRODUCT

Microbiome-Friendly

While synthetic preservatives kill all microbiome bacteria, BiomEco™ 98 has no influence on the microbiome

Microorganisms	INOCULATION (CFU/GR)			RESULTS (CFU/GR)								
	SA*	SE**	SE+SA	SA	7 hr	SE+SA	SA	24 hr	SE+SA	SA	7 days	SE+SA
					SE			SE			SE	
BiomEco™ 98	4.9·10 <sup>6</sup>	5.0·10 <sup>6</sup>	6.3·10 <sup>6</sup>	0	0	0	0	0	0	7	7	7
Naturally derived antimicrobial	4.9·10 <sup>6</sup>	5.0·10 <sup>6</sup>	6.3·10 <sup>6</sup>	2	7	2	5	7	7	7	7	7
Mixture of parabens and phenoxyethanol	4.9·10 <sup>6</sup>	5.0·10 <sup>6</sup>	6.3·10 <sup>6</sup>	0	0	0	0	7	0	7	7	7
Unpreserved lotion	4.9·10 <sup>6</sup>	5.0·10 <sup>6</sup>	6.3·10 <sup>6</sup>	0	0	0	0	0	0	2	7	2

\*SA - Staphylococcus aureus    \*\*SE - Staphylococcus epiderimidis

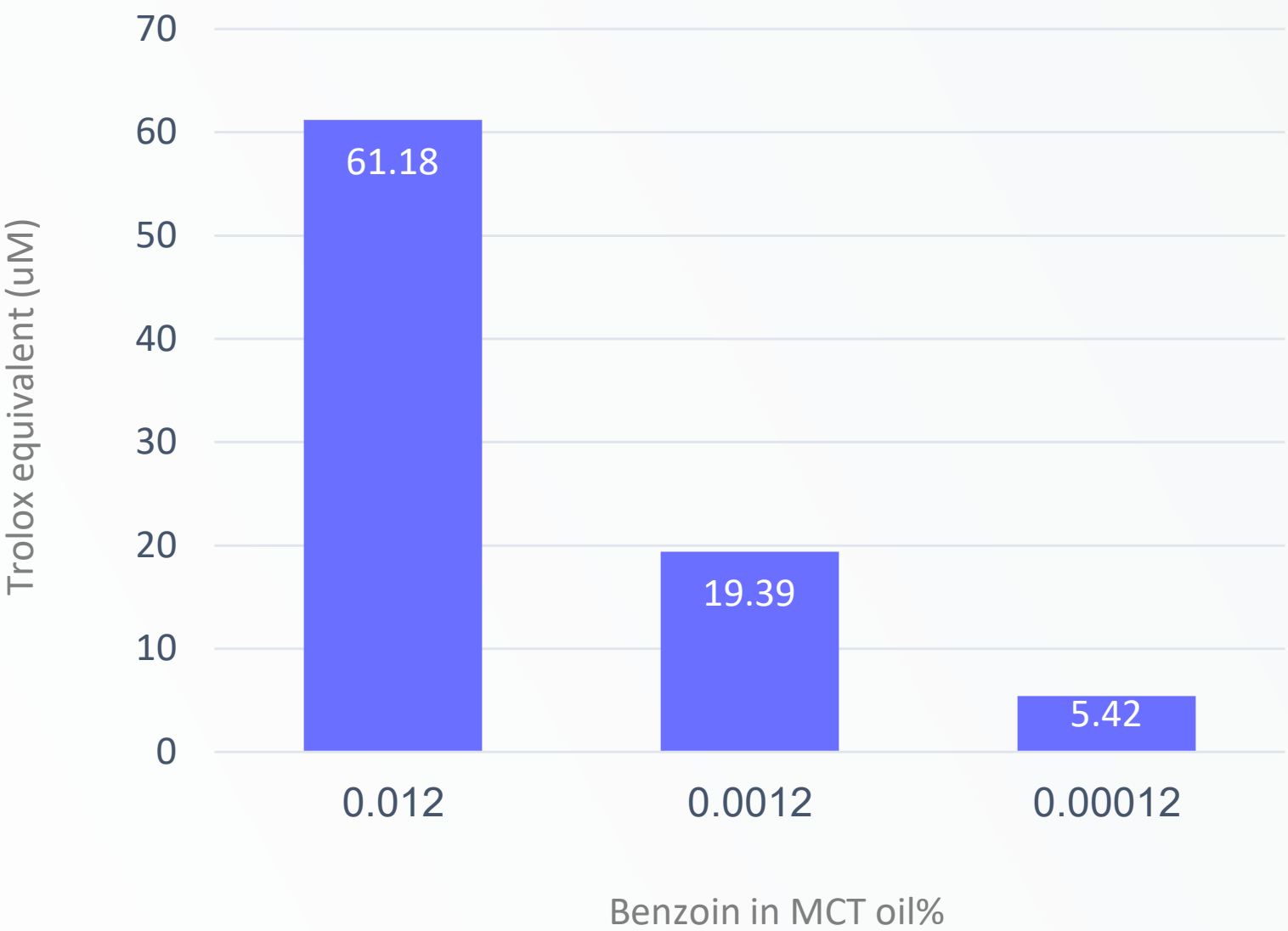


PROVEN ANTIOXIDANT AND CHELATOR PROPERTIES

Antioxidant Activity

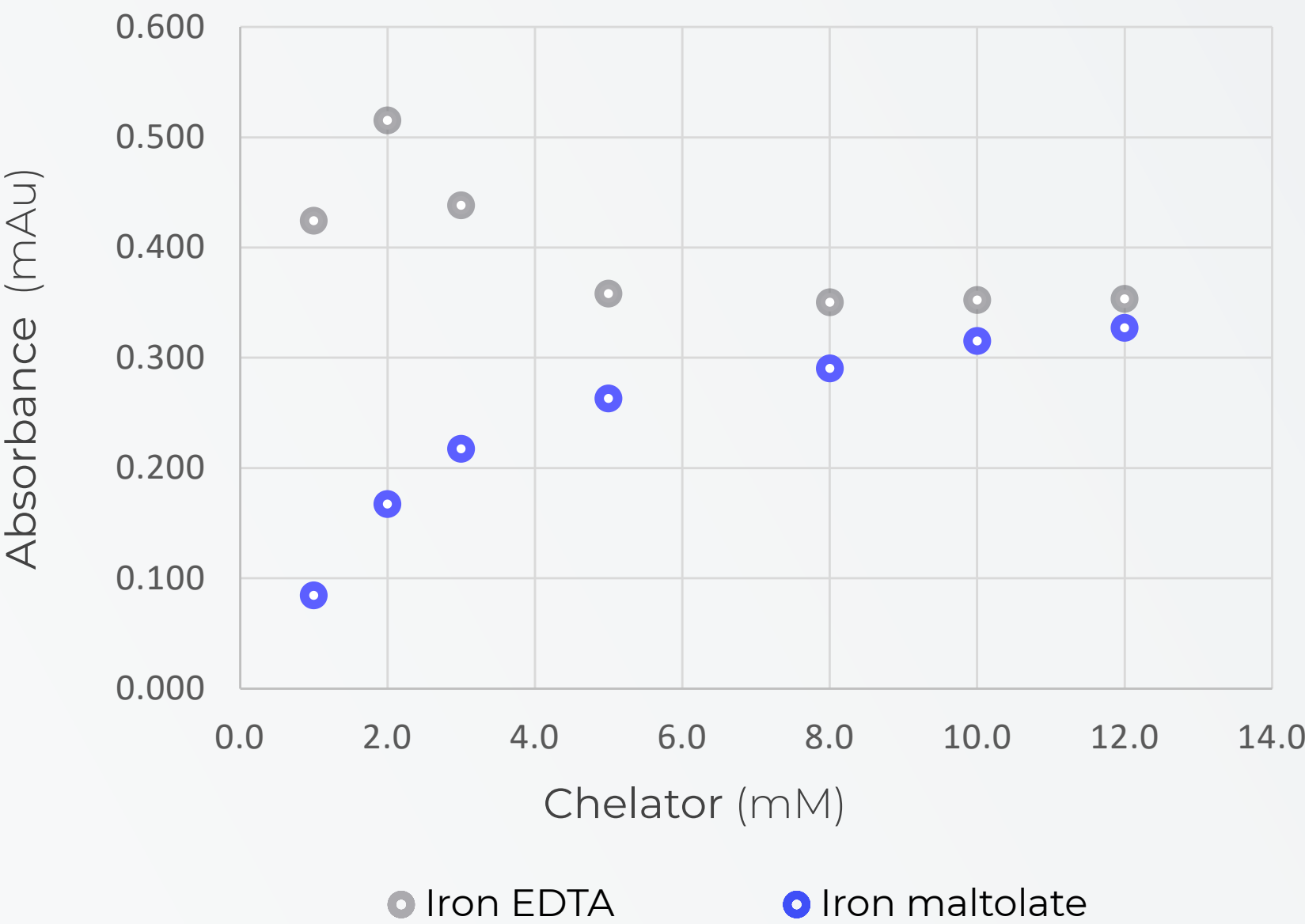
Reactive oxygen species (ROS) scavenging efficacy was examined acellular by the ORAC assay. The activity of BiomEco™ 98 was calculated as Trolox equivalent according to standard curve.

BiomEco™ 98 has strong antioxidant properties



Iron Complextion Comparison - Maltol versus EDTA

BiomEco™ 98 has chelation properties equivalent to EDTA



BIOMECO™ 98 IS PROVEN TO BE SAFE IN CLINICAL STUDIES

HRIPT Study -  
Hypoallergenic

Study Objectives

This study intended to determine the allergic reactions of BiomEco™ 98 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™ 98 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
- 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
- Vegan
- Non-GMO
- Natural: COSMOS certified; compliance with ISO 16128
- Biodegradable
- Preservative-free
- Not tested on animals
- Sustainable
- Ethically sourced
- Halal
- Compliance to clean-cosmetic definition: Credo, Sephora, Whole Foods



Available at

  
**ULPROSPECTOR.COM**

Contact Us

Email Dr. Rachel Lutz at [sales@synergio.com](mailto:sales@synergio.com)  
and request samples to enhance your product!

Formulation Tips

## Shelf Life

24 months from date of manufacture

## Storage Conditions

**BiomEco™ 98** must be stored tightly  
closed at room temperature

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