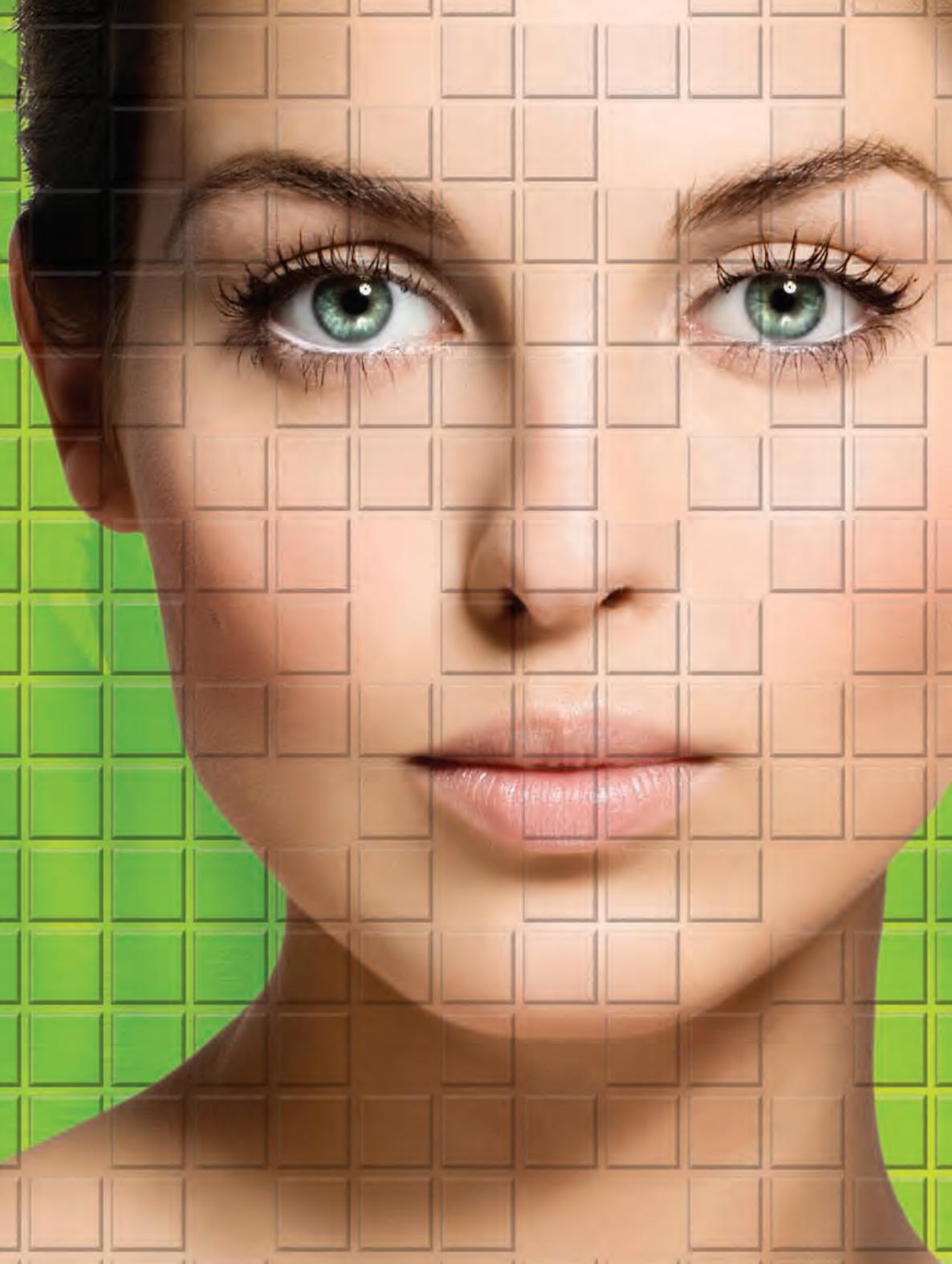


Botaniceuticals



## **Botaniceutical CS Peptide**

*The Collagen Stimulating Peptide*

**45% Reduction in wrinkles in 28 days (In-vivo)**

# Botaniceutical CS Peptide

## Description:

- INCI: Water (and) Palmitoyl Tripeptide-28
- Botaniceutical CS Peptide is a stabilized peptide engineered for cutaneous delivery that is resistant to enzyme degradation. Botaniceutical CS Peptide mimics TGF- $\beta$  by activation of the transforming growth factor- $\beta$  receptor Type II (T $\beta$ RII) to activate collagen synthesis.

## Benefits:

- Regeneration and protection of the extra cellular matrix (ECM)
- Reduces Wrinkles

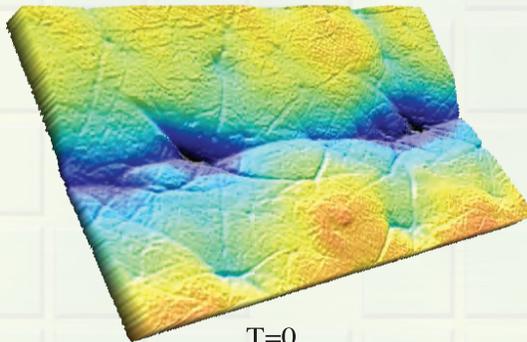
## Performance:

- 45% Reduction in wrinkles in 28 days (In-vivo)
- 152% Increase in Collagen I Synthesis (In-vitro)
- 175% Increase in Collagen III Synthesis (In-vitro)
- 48% MMP-9 Inhibition (In-vitro)

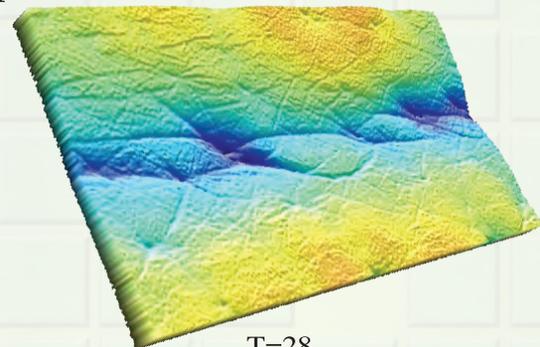
## Macro Relief of Skin (In-vivo):

Reduction of wrinkles by 45% in 28 days

Subject 1

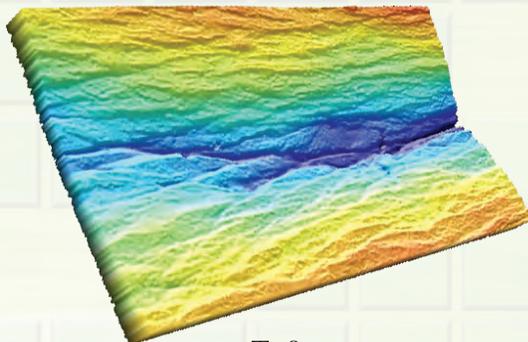


T=0

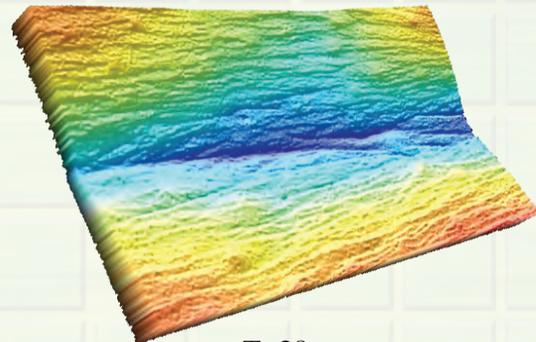


T=28

Subject 2



T=0

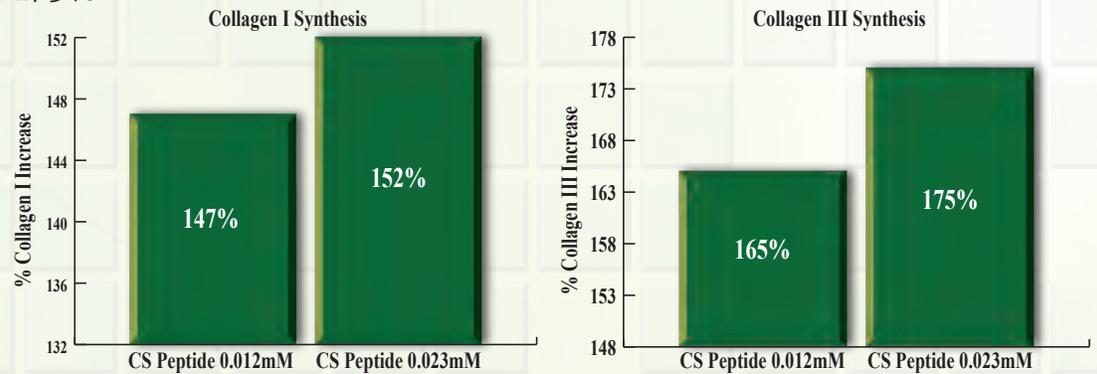


T=28

15 Subjects were treated daily (once per day) with a cream containing 3% Botaniceutical CS Peptide for 28 days. Silicone replicas obtained from area surrounding the eye were taken in the beginning of treatment and at the end of treatment 28 days later, then analyzed through confocal microscopy. The average reduction in wrinkles of all 15 subjects is reported.

## Collagen Synthesis (In-vitro):

152% Collagen I increase  
175% Collagen III increase



Human dermal fibroblast (HDF) cultures were used for the 72hr treatment.

Botaniceutical CS peptide was tested at two different concentrations with TGF- $\beta$  as a positive control.

Botaniceutical CS peptide is demonstrated to increase collagen I by 152% and collagen III by 175%.

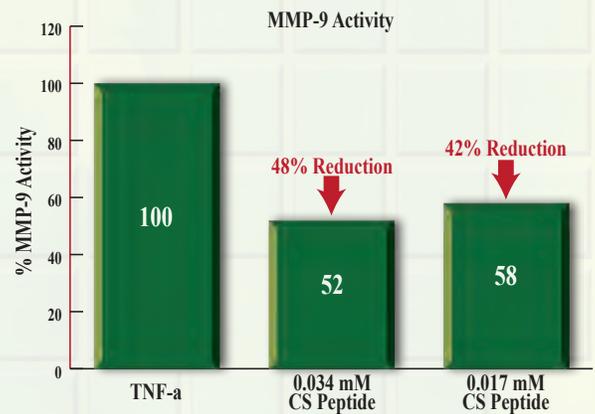
## MMP-9 Inhibition (In-vitro):

48% Reduction in MMP-9 Activity

A Human dermal fibroblast (HDF) culture was used for the 24hr treatment.

Botaniceutical CS peptide was tested at two different concentrations using a metalloprotease activator, tumoral necrosis factor alpha (TNF- $\alpha$ ).

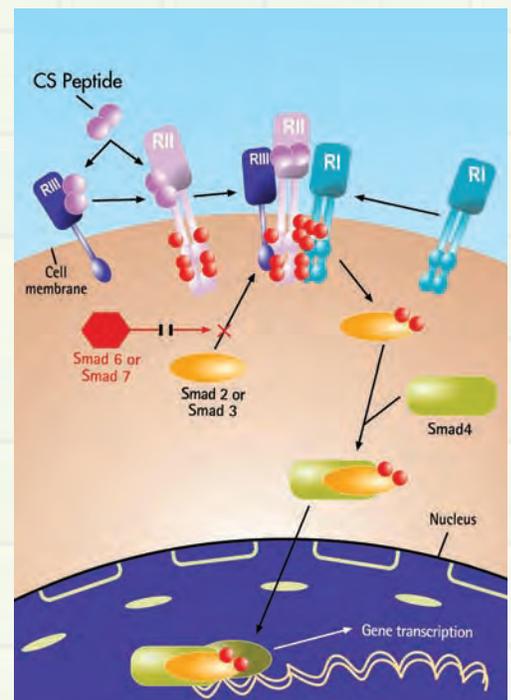
Botaniceutical CS Peptide demonstrated to inhibit MMP-9 by 48%



## Mechanism of Action:

Botaniceutical CS Peptide reduces wrinkles by increasing collagen in the skin. Botaniceutical CS peptide works by turning on the gene responsible for the production of collagen.

Botaniceutical CS Peptide activates transforming growth factor- $\beta$  receptor Type II (T $\beta$ RII) enabling phosphorylation of T $\beta$ RI forming a receptor complex. The receptor activated Smad proteins, smad-2 and smad-3 are phosphorylated by T $\beta$ RI. The phosphorylated smads will then form a complex with smad-4. The smad complex then moves into the nucleus where it regulates gene transcription and stimulates synthesis of collagen I and collagen III.



## Product Information:

**Botaniceutical CS Peptide**  
**INCI: Water (and) Palmitoyl**  
**Tripeptide-28**

## Product Data

Property:	Description
Appearance:	Transparent-Slightly Hazy Liquid
Color:	Colorless-Light Straw
pH:	3.5-6.0
Solubility:	Water Soluble

## Formulation Guidelines:

pH Range: 3.5-7.0

3% use level

Incorporation Temperature: <45°C



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[www.botanigenics.com](http://www.botanigenics.com)

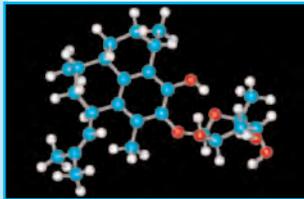
# Gorgonian Extract® GC/PTG

The World's Most Powerful Anti-Inflammatory



## A natural, highly effective anti-inflammatory ingredient ideal for:

- Skin treatment products w/the potential to irritate
- Sun/after sun products
- After-shave products
- Lotions, creams, gels
- Sensitive skin products
- Eye care products
- After care for skin exfoliation treatment



Chemical Structure of Pseudoaterosin A



<sup>1</sup>References:  
PNAS.,83,6238-6240,1986  
J.Org.Chem.,51,5140-5145,1986;  
53,2401-2406,1988;55,4916-4922,1990

**Product:** Gorgonian Extract® GC

**INCI name:** Caprylic/Capric Triglyceride (and) Sea Whip Extract

**EINECS #:** 265-724-3 or 277-452-2 (and) Not Assigned

**CAS #:** 65381-09-1 or 73398-61-5 (and) 244058-54-6

**Product:** Gorgonian Extract® PTG

**INCI name:** Pentylene Glycol (and) Sea Whip Extract

**EINECS #:** 226-258-3 (and) Not Assigned

**CAS #:** 5343-92-0 (and)244058-54-6

Gorgonian Extract®, is a natural anti-inflammatory ingredient that is safe, effective, and environmentally friendly. It is an extract from the marine organism *Pseudopterogoria elisabethae* (sea whip), a renewable resource harvested from the Caribbean Sea, which consist primarily of powerful anti-inflammatory compounds called pseudoaterosins.

The anti-inflammatory properties of pseudoaterosins are well documented in scientific literature<sup>1</sup>. Pseudoaterosins have been shown to inhibit the production of inflammatory mediators. This activity has been assayed both *in vitro* and *in vivo*. The *in vitro* enzymatic assay measures inhibition of phospholipase A2 (PLA2). This enzyme cleaves arachidonic acid from the cell membrane and makes it available for enzymatic reactions and is the initial enzyme in the arachidonic pathway that ultimately leads to the synthesis of eicosanoids, the inflammation mediators. These molecules play an important role in inflammation.

In a study performed to learn the concentration-activity relationships of the pseudoaterosin mixture in a unicellular aquatic cellular protist, tetrahymena, a direct correlation was demonstrated between the concentration of the mixture and anti-inflammatory activity. Therefore, the percentage of use in formulas will correlate with the activity needed to be achieved. Gorgonian Extract® is ideal for a variety of elegant, effective skin care and treatment products having a pH range of 4 to 7.

## TYPICAL PROPERTIES GORGONIAN EXTRACT® GC GORGONIAN EXTRACT® PTG

TYPICAL PROPERTIES	GORGONIAN EXTRACT® GC	GORGONIAN EXTRACT® PTG
Appearance	Clear to slight hazy amber liquid	Light amber to brown liquid
Odor	Characteristic	Characteristic
Total % Weight of Ps. Powder	3.0-4.0	3.0-4.0
Refractive Index(25 C)	1.4475-1.4530	1.4300-1.4500
Solubility	Insoluble in water and glycols	Soluble in water
Recommended Use Level	0.3-2.0%	0.3-2.0%
Packaging	1 kg, 5 kg, 18 kg, jars	1 kg, 5 kg, 18 kg, jars
Product Code #	25-023	25-024

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ACTIVES & TREATMENTS

LIPO®

BEAUTY IS OUR SCIENCE™