

AC DermaPeptide Warming PF



Warming Sensation
 Non-Irritating
 Natural
 Microcirculation
 Antioxidants
 Stimulating

BACKGROUND

Sensorial triggers are a target for many cosmetic formulations, being a universal symbol to consumers that a product is working and working well. **AC DermaPeptide Warming PF** harnesses the same warming sensation felt from spicy cuisines but without the accustomed irritation. The active ingredient within the pepper, *Capsicum frutescens*, is capsaicin an oil-soluble active fraction¹ known to offer multiple skin benefits such as: high levels of antioxidants ranging from ascorbic acid and glutathione to robust enzymes, such as superoxide dismutase, and an increase in the skins microcirculation. Microcirculation aids in delivery of nutrients and enhanced oxygen delivery to skin cells which creates an optimal environment for product performance. However, irritation is a common side effect of Capsaicin. Active Concepts has decreased the irritating properties of Capsaicin through the process of fermentation. Throughout this process the irritating components are reduced while still optimizing the key benefits Capsaicin has to offer in **AC DermaPeptide Warming PF**.

SCIENCE

Capsaicin interacts with sensory neurons by binding to receptors in the brain called Vanilloid Receptor Subtype 1 (VR1).² This receptor is an ion channel which, when stimulated by heat, allows cations to travel into the cell. When enough cations enter the cell, the neuron depolarizes and a signal is sent to the brain, causing us to recognize a warming sensation.³

To create a functional ingredient that also provides a warming sensation, we fermented the macerated fruit of *Capsicum frutescens* with Lactobacillus. This combines the anti-irritant benefits of Lactobacillus with the known properties of Capsicum, such as an increase in circulation.

Code Number: 20458PF

INCI Name: Lactobacillus/ Capsicum Frutescens Fruit Ferment Extract

INCI Status: Conforms

REACH Status: Complies

CAS Number: 85940-30-3

EINCS Number: 288-920-0

Origin: Botanical

Processing:

- GMO Free
- No Ethoxylation
- No Irradiation
- No Sulphonation

Additives:

- Preservatives: None
- Antioxidants: None
- Other additives: None

Solvents Used: N/A

Appearance: Slightly Viscous, Light Tan to Amber Liquid

Soluble/ Miscible: Water Soluble
 100% Biodegradability

Microbial Count: <100 opg,
 No Pathogens

Suggested Use Levels: 0.5 - 15.0%

Suggested Applications:
 Increased Circulation, Anti-Irritant

Benefits of AC DermaPeptide

Warming PF

- Increased Microcirculation
- Warming Sensation
- Sensorial Stimulation

AC DermaPeptide Warming PF

During the fermentation process, a biotransformation takes place, which creates a capsaicinoid that has increased solubility, additional cell metabolism-increasing factors, and anti-irritant properties. Unlike most Capsicum extracts, **AC DermaPeptide Warming PF** contains a functional active capsaicinoid that is water-soluble.

BENEFITS

It has become a popular trend to have sensational personal care products, so we have developed **AC DermaPeptide Warming PF** to be effective while also having that “sensory key” to let you know that the product is actually working. In order to have healthy, radiant skin it is critical to have optimal circulation. **AC DermaPeptide Warming PF** utilizes the stimulating qualities of Capsicum to leave your skin feeling warm so you can actually feel the increase in circulation. **AC DermaPeptide Warming PF** is useful in a wide variety of cosmetic and personal care products, ranging from anti-aging creams and skin clarifiers to warming lotions and gels.

EFFICACY DATA

A Periscan PIM II Perfusion Laser Doppler Imaging system was used to non-invasively determine an increase in dermal circulation. A 5-subject panel consisting of 5 Caucasian females between the ages of 32 and 43 was assembled and provided with two aqueous solutions, one containing 1.0% of the test material (**AC DermaPeptide Warming PF**) and the other containing 3.0% of the test material. As a control, 1.0% and 3.0% solutions of a non-fermented capsicum extract were also applied.

AC DermaPeptide Warming PF was shown to deliver the same efficacious increase in blood flow without the dermal irritation associated with non-fermented capsicum. To begin, let’s look at Figure 1 which shows the increase mean blood flow of these two materials is comparable when used at the same levels. The irritation assay conducted, measuring the dermal irritation score of Capsicum and **AC DermaPeptide Warming PF** demonstrates that the fermentation of capsicum significantly reduces irritation associated with untreated capsicum as shown in Figure 2.

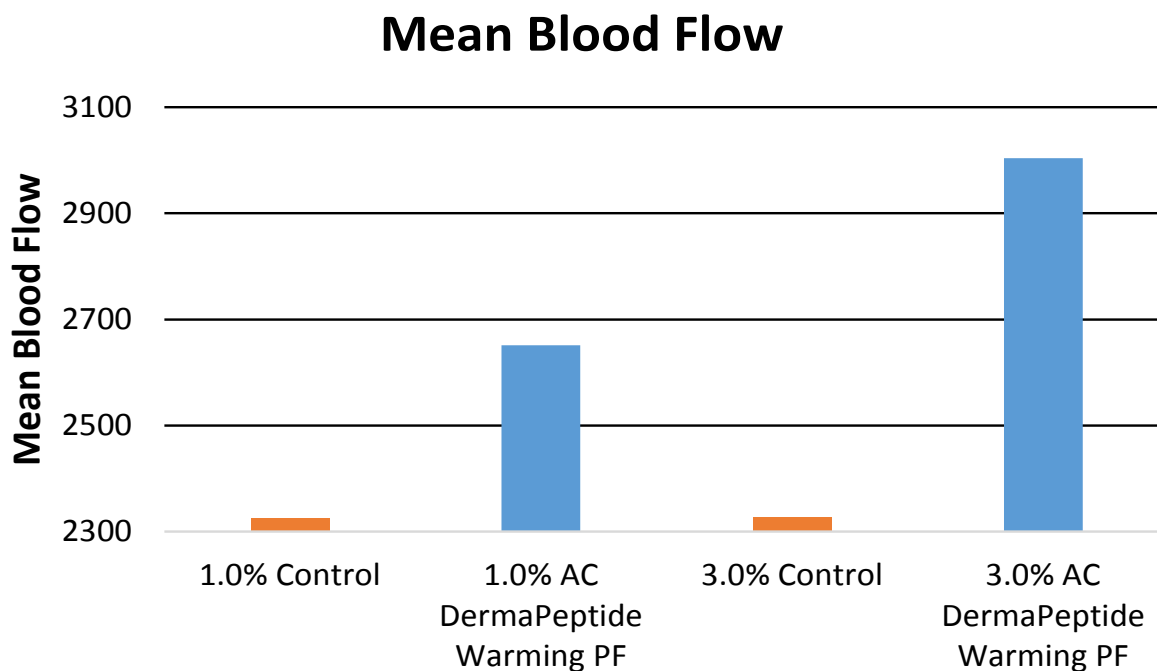


Figure 1. Mean Blood Flow

AC DermaPeptide Warming PF

Irritation Assay

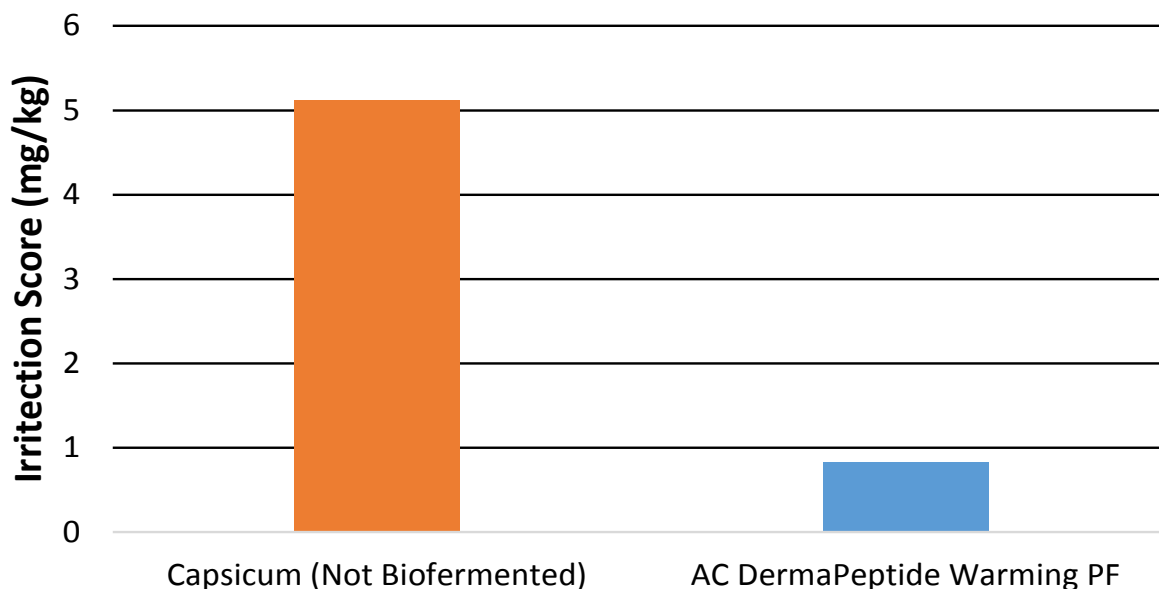


Figure 2. Irritation Assay

Therapeutic Index Comparison

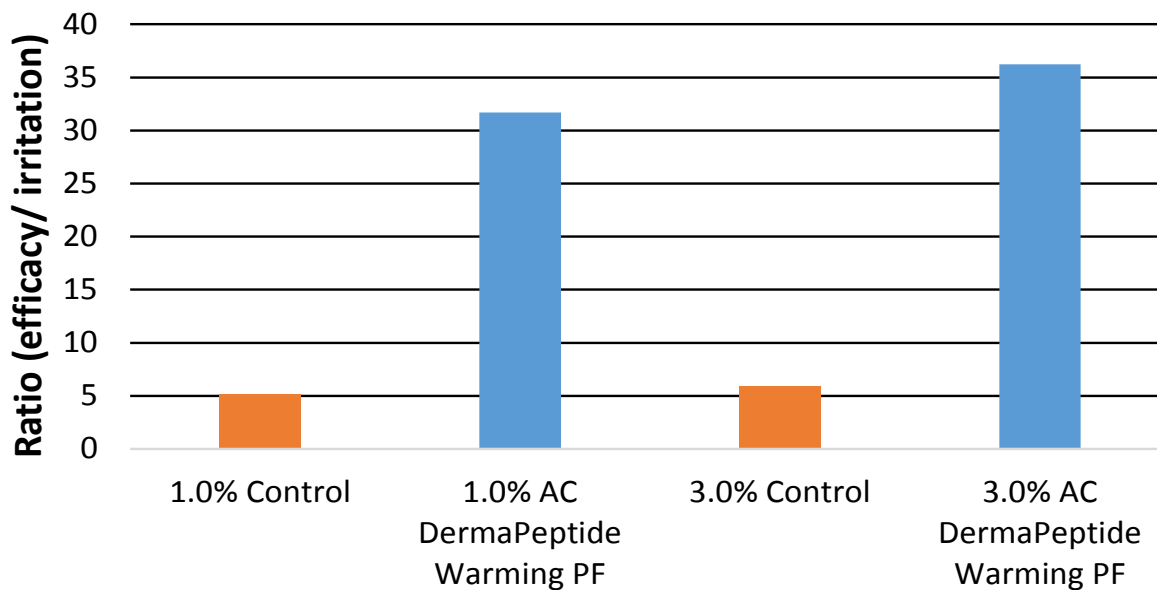


Figure 3. Therapeutic Index Comparison

References:

- 1-Lourdes Reyes- Escogido, Maria de, et al. *Molecules* 2011, 16, 1253-1270; doi:10.3390/molecules16021253 Web. 8 Dec 2015.
- 2-Arpad, Szallasi. "Vanilloid (Capsaicin) Receptors and Mechanisms." *Pharmacological Reviews* June 1, 1999 vol. 51 no. 2 159-212. Web. 8 Dec 2015.
- 3-Lodish H, Berk A, Zipursky SL, et al. *Molecular Cell Biology*. 4th edition. New York: W. H. Freeman; 2000. Section 21.6, Sensory Transduction.