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Calm the Flame of Pyroptosis – a New Approach to Soothe Skin Redness and Irritation

Dr. Eva Bönzli

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Fig. 1 Shepherd's purse (*Capsella bursa-pastoris*)

Rosacea is a chronic inflammatory skin condition that affects millions of people worldwide, causing redness, visible blood vessels, and discomfort primarily on the face. Despite its prevalence, the exact causes of rosacea remain elusive, making effective treatment a challenge. Traditional methods of treatment often do not provide lasting relief. In addition to rosacea, many people experience skin irritation, flushing and redness with underlying inflammation processes.

AmelioSense™, an innovative new active developed by Mibelle Biochemistry, is designed to address different mechanism of skin irritation and provide significant relief from its symptoms. AmelioSense™ combines the power of effective ingredients with well-founded scientific research to offer a comprehensive solution for those suffering from skin redness and irritation.

At the heart of **AmelioSense™** is the innovative approach to calming the inflammatory response. Recent studies have highlighted the role of pyroptosis, a form of fast, programmed cell death, in exacerbating the symptoms of rosacea and skin inflammation [1]. Pyroptosis initiates a swift and intense inflammatory response that typically safeguards tissue from pathogens by releasing pro-inflammatory mediators and recruiting immune cells.

However, in certain scenarios, such as within a rosacea environment, pyroptosis can exacerbate the condition, worsening the symptoms of rosacea.

AmelioSense™ tackles this issue by combining two key components: Shepherd's Purse (*Capsella bursa-pastoris*) (Picture 1) extract and a powerful antioxidant complex. Shepherd's Purse, a versatile medicinal herb, has been shown to possess anti-pyrototic properties, effectively reducing the activity of caspase-1, a key enzyme in the pyroptosis pathway (Picture 2). This reduction helps to calm the inflammatory response and soothe irritated and inflamed skin prone to flushing and redness. The antioxidant complex in AmelioSense™, which is an advanced liposomal formulation, combines carnosine, tocopherol, and silymarin, each offering unique benefits. Carnosine fights skin glycation and oxi-

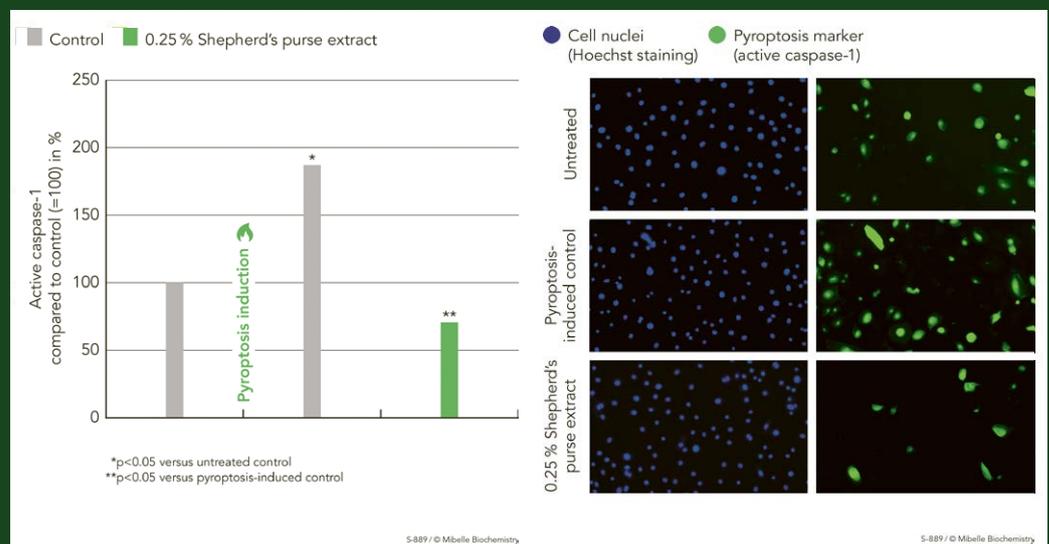


Fig. 2 Inhibition of the pyroptosis key enzyme caspase-1

ductive stress, tocopherol protects against oxidative damage, and silymarin provides anti-inflammatory properties. Together, these antioxidants work effectively to protect and soothe the skin.

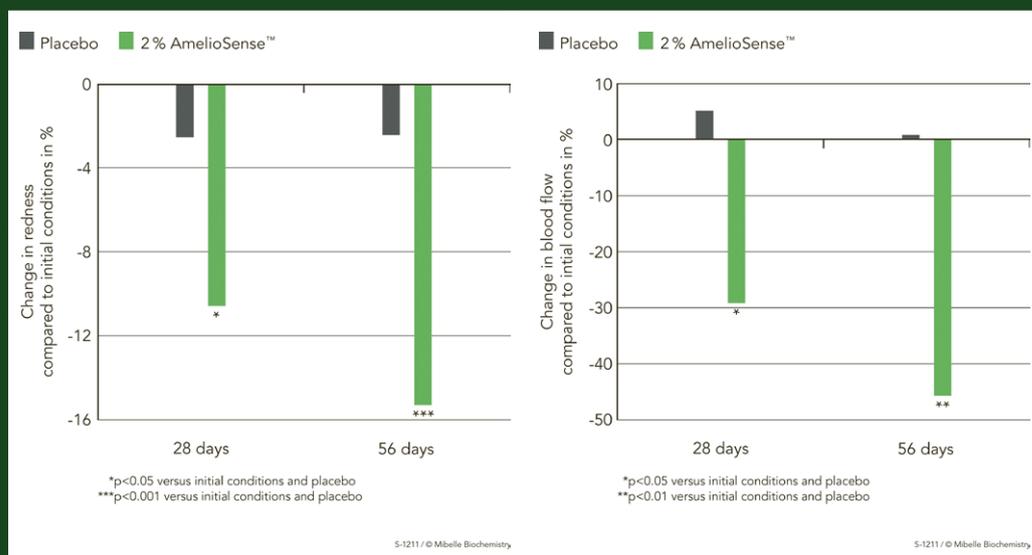
AmelioSense™ has undergone rigorous testing to ensure its efficacy in combating skin redness. In a series of studies, the product demonstrated significant improvements in reducing inflammation, redness, and visible blood vessels. Shepherd's Purse extract was shown to significantly reduce active caspase-1 levels (**Picture 2**) in normal human epidermal keratinocytes, indicating its potent anti-pyroptotic effect. The extract also reduced the release of reactive oxygen species (ROS), which are harmful free radicals that can damage skin cells and exacerbate inflammation. By lowering the expression of the pro-inflammatory cytokine IL-18, AmelioSense™ helps to reduce the overall inflammatory response in the skin. The antioxidant complex in AmelioSense™ was found to downregulate key inflammatory markers that are also known to play a crucial role in rosacea, further supporting its anti-inflammatory capacity.

In a double-blind, randomized, placebo-controlled clinical trial, volunteers using **AmelioSense™** experienced a notable decrease in measured skin redness and blood flow (**Picture 3**) and a significant reduction in visible redness and blood vessels (**Picture 4**) after 56 days of treatment. In addition, the study showed by means of a questionnaire that AmelioSense™ not only reduced skin redness but also improved the overall skin condition, had a soothing effect and thus increased the quality of life of the participants.

AmelioSense™ represents an innovative new approach in reducing skin redness and irritation, offering a scientifically backed, effective solution that addresses pyroptosis as a new potential trigger. With its unique combination of Shepherd's Purse extract and a powerful antioxidant complex, AmelioSense™ provides lasting relief from the skin redness, helping individuals to regain their confidence and improve their quality of life. The innovative formulation of AmelioSense™ ensures that it penetrates deeply into the skin, delivering its potent ingredients directly to the affected areas. This targeted approach maximizes the product's effectiveness, making it a reliable choice for those seeking relief from skin irritation and flushing.

Experience our new active **AmelioSense™** and take the first step towards calmer skin today. Say goodbye to the discomfort of flushed skin and embrace a future with soothed, more radiant skin!

[1] Hu et al. "Pyroptosis-related gene signature elicits immune response in rosacea. *Exp. Dermatol.* Epub 2023 Apr 22. <https://doi.org/10.1111/exd.14812>



Pic. 4 AmelioSense™ visibly reduces skin redness (clinical study, cheek pictures)

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