

## ProCircul8

# Microcirculation for Improved Hair & Scalp Health



**INCI Name:** Water & Hexylene Glycol & Betaine & Superoxide Dismutase & *Foeniculum vulgare* (Fennel) Seed Extract & *Visnaga vera* Fruit/Stem Extract  
**SAP Code#:** 137940

## Key Product Attributes

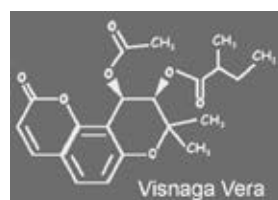
- Enhances microcirculation in the scalp and hair follicle
- Anti oxidant protection
- Delivers protective ingredients to the follicle
- Environmental protection for hair
- Increases penetration of actives to the hair follicle

## Background Information

Hair follicles have very high rates of metabolic activity. However, studies of aged follicles often find inadequate capillary circulation directly to the follicle suggesting that the resultant lack of nutrient flow may be a contributory factor in the thinning of hair with age. ProCircul8 provides a mechanism to not only enhance microcirculation in the scalp, but in the same complex, delivers protective nutrients to the only actively growing, living portion of hair, the follicle.

### Mode of Action

ProCircul8 is an aqueous/glycolic complex comprised of a key botanical called *Visnaga vera* which is known to contain a powerful microcirculation stimulant called visnadine, as shown below.



**Fig 1.**  
Chemical structure of Visnadine

The molecule acts on the smooth muscles surrounding the microcapillaries of the skin causing them to relax and open. By increasing microcirculation in the scalp, enhanced oxygen and nutrient delivery to the root of the hair is able to occur.

In addition, ProCircul8 is fortified with betaine, a known cellular ATP promoter, that has been shown to strengthen hair fibers.<sup>1,2</sup> The complex is further enhanced by protein stabilized superoxide dismutase, an ingredient that has been shown to protect hair color from solar damage.<sup>3</sup>

## Efficacy Study

### In vivo Effects of *Visnaga vera* Extract<sup>4</sup>

A double-blind and randomized study on 30 healthy females was performed to evaluate the microcirculation effect of *Visnaga vera* Extract when delivered from an oil in water emulsion. Three milliliters of an emulsion containing 1.5% *Visnaga vera* was applied on the cheek. Cutaneous Thermography was used to measure the subject's skin temperature. Skin temperatures were analyzed prior to application of the emulsion, followed by readings taken at 15, 30, 45, and 60 minutes after application. The results of this study are shown below.

#### Microcirculation Study

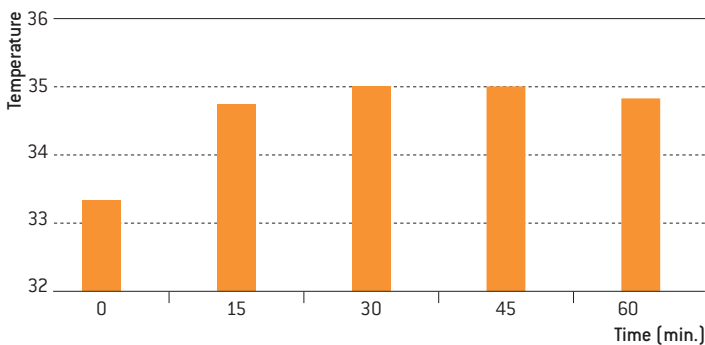


Fig. 2

Effect of 1.5% of *Visnaga vera* extract on cutaneous microcirculation as measured using Cutaneous Thermography

As shown in Figure 2, the skin temperature readings are increasing rapidly after application of the emulsion. The increase is most outstanding at 30 – 60 minutes. The data reflects that *Visnaga vera* Extract is enhancing microcirculation.

Toxicological Testing Review	
Dermal Irritation	Non-Irritant
Ocular Irritation	Mild Irritant

## Conclusion

Damaged and weakened hair can be improved by enhancing microcirculation in the scalp and follicle. ProCircul8 is specifically designed to promote blood flow on the scalp. ProCircul8 can be easily incorporated into shampoos, conditioners or treatment products to promote healthier hair growth and protection. ProCircul8 can be used in a variety of hair care products including shampoos, conditioners, mousses, sprays, gels and serums and can be easily incorporated into the water phase at ambient temperature.

Typical Properties	
Appearance	Clear liquid (light olive color)
Odor	Characteristic
Non-Volatile Matter (1g - 1hr - 105°C)	4.0 - 8.0%
pH (at 25°C)	3.5 - 5.5
Microbial Content	100 opg max No pathogens
Preservative System	0.5 - 1.0% Phenoxyethanol
Recommended Use Level	1 - 5%

## References

1. Devlin TM. Textbook of Biochemistry with Clinical Correlations, 3rd ed., Wiley Liss, New York, NY 1992, p. 501-520
2. Woodruff J. Improving Hair Strength. Cosmet Toilet 117 (2002) 33-36
3. SOD Reference from Arch
4. Bombardelli E et al., IFSCC Preprints, 16th IFSCC Congress, Oct 8-11, 1990, p 68-76

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