



eyeseryl®

**A TETRAPEPTIDE WITH A
RECOGNISED EFFICACY AGAINST
PUFFY EYEBAGS**



eyeseryl®

WHY DO EYEBAGS AND DARK CIRCLES APPEAR?

Aging

With age, skin loses its elasticity and muscles weaken. Loose skin and fat accumulate in bulging bags around the eyelids.



Skin characteristics

Skin around the eyes is the most fragile and sensitive, it is nearly 10 times thinner.

Water accumulation

Eyelid oedema: fluid may build up due to several vascular diseases, such as a poor lymphatic circulation or an increased capillary permeability.



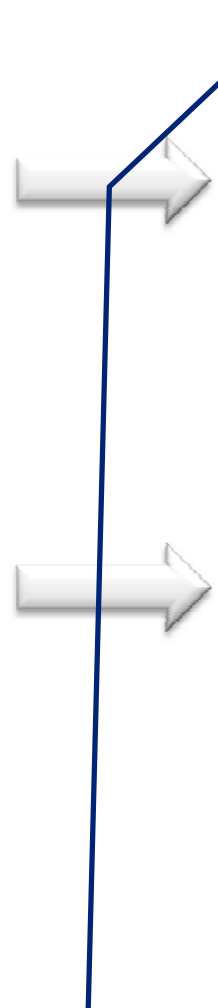
GLOBAL ACTION AGAINST EYEBAGS AND DARK CIRCLES

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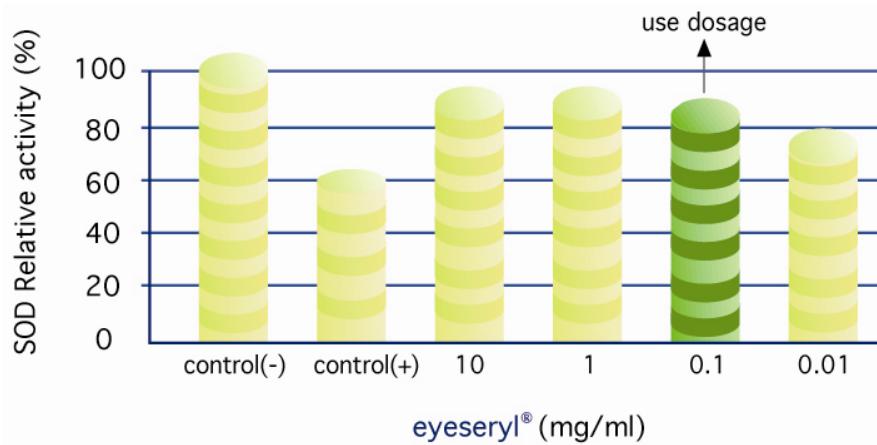
- ✓ Inhibition of glycation (collagen cross-linking).
- ✓ Increase of skin elasticity.

- ✓ Draining and anti-oedema effect.
- ✓ Lightening effect to fade dark circles.



1. Glycation inhibitory activity

The inactivation of SOD (Superoxide Dismutase) by its reaction with fructose is used as a model of glycation.



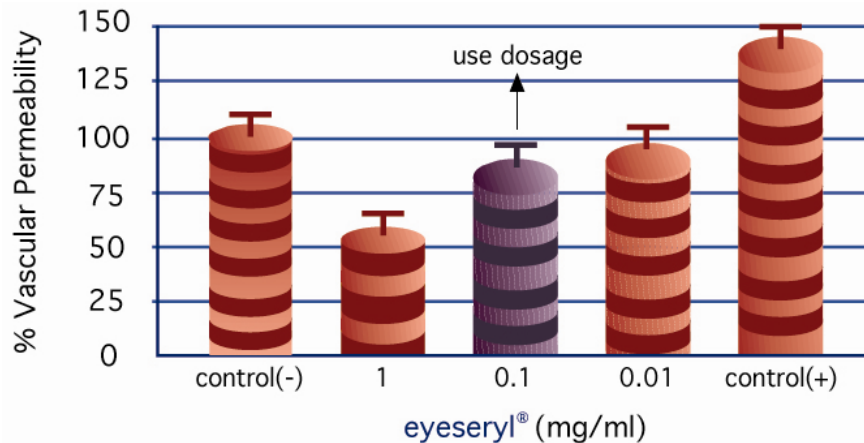
- The incubation of SOD with monosaccharides gives rise to glycation which inactivates the enzyme.
- SOD activity is assessed by the inhibition of the transformation of xanthine to uric acid with the enzyme xanthine oxidase.
- Through this reaction, WST-1 is transformed to formazan.
- Formazan absorbs at 450 nm.

eyeseryl® prevents collagen cross-linking

Inhibition of collagen glycation avoids losing elasticity and subsequent eyebags formation.



2. Vascular permeability inhibition



- Test performed in a tissue culture plate using an assay kit, which allows the evaluation of the effects of chemicals on endothelial cell permeability.
- Non-treated monolayers were used as negative control. Monolayers treated with IL-1 β were used as positive control.
- Cells were incubated for 24h at 37 °C and 5% CO₂.
- After the treatment, FITC-Dextran was added, allowing it to permeate.
- The extent of permeability was determined by measuring the fluorescence.

Draining and anti-oedema effect

eyeseryl® prevents liquid accumulation in eyebags.



- o 20 female volunteers, aged 18 to 65.
- o Application of a cream containing 10% Eyeseryl® Solution under the eyes, twice a day for 60 days.

**EYESERYL®
Solution 10%**

a. Anti-eyebag activity

- Pictures were taken at different times, up to 60 days.
- Dermatological evaluation.



Puffy eyebags reduction in only 14 days



- o 20 female volunteers, aged 18 to 65.
- o Application of a cream containing 10% Eyeseryl® Solution under the eyes, twice a day for 60 days.

**EYESERYL®
Solution 10%**

b. Skin elasticity

- i** • Elasticity measurements were performed with a Cutometer®.
- Elasticity represents the recovery degree of the maximum deformation of the skin reached.

$$\text{Elasticity} = \frac{U_f - U_a}{U_f}$$

U_f= skin extensibility

U_a= residual deformation

It represents the recovery degree of the maximum deformation reached, whose values range between 0 and 1 (maximum elasticity).

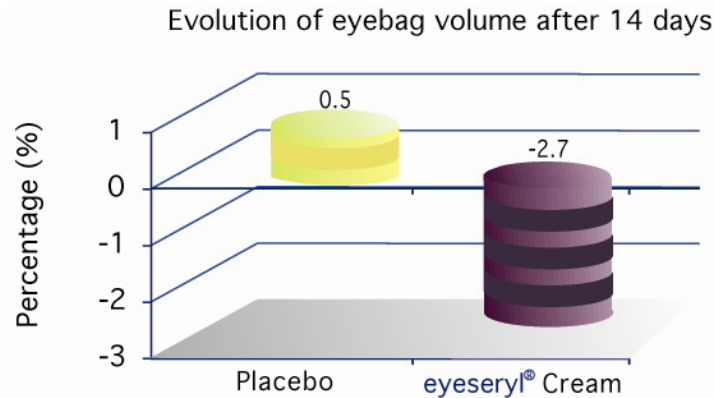
Skin elasticity had a 30% increase after 30 days



- o 17 volunteers, aged 34 to 54.
- o Application of a cream containing 1% Eyeseryl® Solution under the eyes, twice a day for 28 days.

**EYESERYL®
Solution 1%**

a. Variation in puffiness



- Eyebag volume was measured using a technique called Fringe Projection, where 3D images of the study areas were obtained with a FaceScanner.
- Images were processed with the software Optocat (Breuckman, Germany - EoTech, France).

Eyebags were reduced in 70% of the volunteers after 28 days



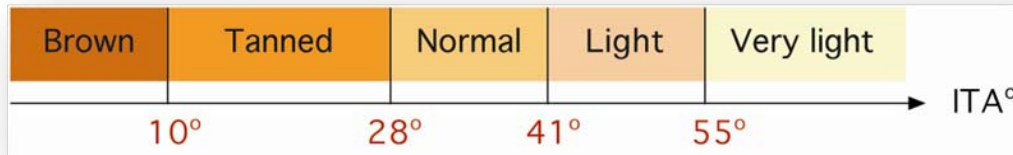
- o 17 volunteers, aged 34 to 54.
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**EYESERYL®
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b. Anti-dark circle effect

i • High resolution photographs of the dark circles were taken under polarised light and chromametry studies were performed.

- o ITA° (Individual Typological Angle): categorizes skin colour.



- o L* (Luminance): represents relative brightness from total darkness (L*=0) to absolute white (L*=100).

**Decrease of dark circles
under the eyes**

ITA° and L values significantly increased showing a slight lightening effect.

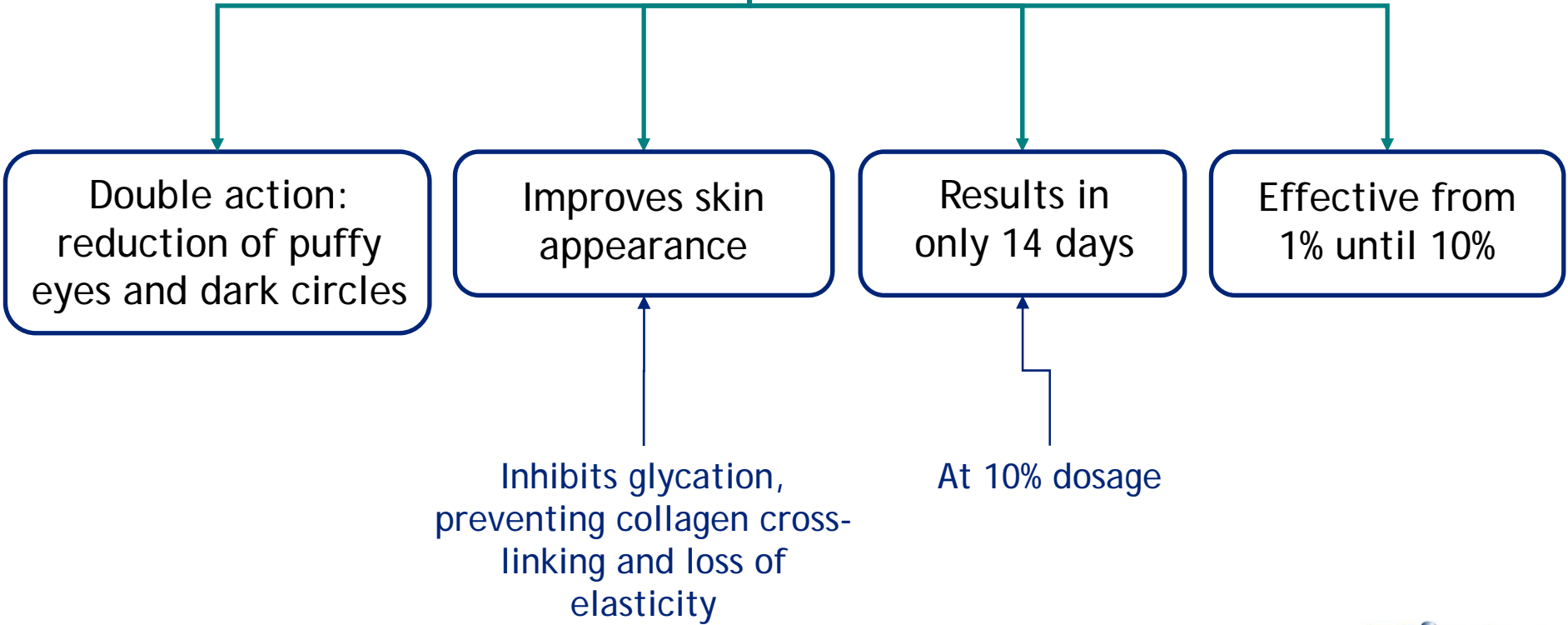


INNOVATION
acknowledgement



eyeseryl®

Global treatment against
eyebags and dark circles





DESCRIPTION

Tetrapeptide with anti-oedema properties with a proven efficacy in reducing puffy eyebags.



APPEARANCE

Transparent solution containing 0.1% active ingredient.

INCI

Water (Aqua), Acetyl Tetrapeptide-5.

Please contact us for information on the preservative system.

PROPERTIES

Anti-eye-bag and anti-dark circle activity, with a draining and decongesting effect.

APPLICATIONS

Eyeseryl® can be incorporated in cosmetic formulations where a reduction of puffiness under the eyes is desired.

DOSAGE

1-10%



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