

# Eyeseryl® and Leuphasyl®: Synthetic Peptides as Advanced Cosmetic Actives

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### Abstract

As skin loses its elasticity and muscles weaken through age, loose skin can accumulate around the eyes, forming folds in the eyelids. Fat, which cushions the eyes in their sockets moves forward out of the ocular cavities and accumulates in bulging bags around the eyelids.

The other major reason for puffy eyes is water accumulation, known as eyelid oedema. Fluid may build up for several reasons, two of the major reasons being poor lymphatic circulation and increased capillary permeability.

Eyeseryl® is a novel synthetic tetrapeptide with anti-oedema properties with a proven efficacy in reducing puffy eyebags. The draining effect of Eyeseryl® achieves a reduction of puffy eyebags in only 15 days – fast anti-eyebag action.

In recent years, the research efforts of the cosmetic scientists have been particularly focused on the biochemical mechanisms involved in the appearance of wrinkles, as one of the most striking signs of skin aging is increased wrinkling of the face. This can occur naturally over time and is identified by certain biochemical, histological and physiological changes that are enhanced by environmental exposure. There are other secondary factors that can cause characteristic folds, furrows and creases of the face. These include the constant pull of gravity, frequent and constant positional pressure of the skin of the face (e.g. during sleep) or repeated facial movements caused by the contraction of the muscles of facial expression.

The discovery of Leuphasyl®, a synthetic pentapeptide, represents an innovative approach to fight expression wrinkles. It works with a new and alternative in vitro mechanism, by mimicking the natural mechanism of enkephalins. Leuphasyl® has proved to be an effective active to prevent the formation of lines and wrinkles, and can also be successfully combined with our line of Botulinum Toxin-like peptides, for an additive effect against expression wrinkles.

### Eyeseryl®: A synthetic tetrapeptide for the reduction of puffy eyebags

#### Introduction

The skin under our eyes is the thinnest skin in our bodies, only 0.5mm thick and around four times thinner than the average. This is one of the reasons why normal ageing processes of the skin are more visible around our eyes. Weakened skin folds easier in this area, causing the “puffy eyebag” effect, and the veins beneath this tissue show through as “dark circles”.

There are two main kinds of eyebags: those caused by fluid retention and those caused by fat. As skin loses its elasticity and the connective tissue weakens through age, loose skin can accumulate around the eyes, forming folds in the eyelids. Fat, which cushions the eyes in their sockets moves forward out of the ocular cavities and accumulates in bulging bags around the eyelids. The removal of this kind of eyebag is only possible by a surgical procedure called blepharoplasty.

The other major reason for puffy eyes is water accumulation, known as eyelid oedema. Fluid may build up for several reasons, two of the major reasons being poor lymphatic circulation and increased capillary permeability.

Eyeseryl® can fight puffy eyebags by working on several mechanisms, like improving the vascular system and strengthening the skin under the eyes preventing fluid accumulation. The local vascular system is improved by decreasing vascular permeability and avoiding that fluid accumulates in the interstitial compartment. The skin is strengthened by protecting the collagen structural network from degradation due to glycation.

#### Materials and Methods

##### Glycation inhibitory activity of Eyeseryl®

Glycation is a non-enzymatic reaction between glucose or another monosaccharide and a protein. The aldehyde group of