Vitamin F-Glyceric ester

INTRODUCTION

Vitamin F-Glyceric ester is a mixture of polyunsaturated fatty acids esterified and biologically actives. The polyunsaturated fatty acid in vitamin F-Glyceric ester can not be synthesised by the body and must be brought in from without. The ester form of this vitamin is used because it is more stable to oxidation.

CHEMISTRY

The polyunsaturated fatty acids that compound vitamin F-Glyceric ester are: linoleic acid (C_{18:2}), the main fatty acid with 40-60% of the total, linolenic acid (C_{18:3}) representing 2-10% and arachidonic acid (C_{20:4}).

COSMETIC PROPERTIES

Skin barrier repairing activity

Essential fatty acids (EFAs) are major components of all cell membranes, to which they provide permeability and elasticity. These acids play an essential role in the formation of ceramides – the most important lipids for the epidermis barrier – and are therefore, essential for the stability and function of the skin barrier (Flores Ahumada DA, 2005).

EFAs are called this way because our organism cannot synthesize the necessary amount, thus they must be brought in from without. The physiological properties of EFAs are based on their ability to restore the structural integrity and the function of cell membranes. EFAs deficiency produces physiological effects such as epidermal hyperproliferation (which results in a scaly skin appearance), damages to the barrier structure of skin (consequently increasing transepidermal water loss) and/or alterations in the production of eicosanoids. The result is a marked skin dryness, erythema, low healing rate and inflammation. Such severe skin symptoms may be reversed by adding EFAs to the diet or, even better, by topical applications of EFAs. The administration of EFAs improves and restores the barrier function of skin, decreases the transepidermal water loss and improves the skin moisture levels. Additionally, the increased lipid content that results of EFAs administration improves skin brightness (Brenner J. et al., 2004).

Some studies showed reduced transepidermal water loss (TEWL) after application of linoleic acid (LA) and γ-linoleic acid (GLA) for some days. Different LA or GLA treatments resulted in stable TEWL for several days; however, if other fatty acids were applied, this effect immediately reverted. It was concluded that the action of LA and GLA on TEWL was not only due to their occlusive effects, but that these fatty acids also produced structural changes in the epidermis, in particular in the horny layer (Le Poole, H.A.C., 1995).

Therefore, Vitamin F-Glyceric ester helps to regenerate the cellular membrane and skin tissues. It’s for that reason that Vitamin F-Glyceric ester makes an intense nourishing and repairing effect and improves significantly the skin appearance, restoring its flexibility and elasticity. Thus, vitamin F-Glyceric ester is very recommendable for dry skin care.

COSMETIC APPLICATIONS

<table>
<thead>
<tr>
<th>Action</th>
<th>Active</th>
<th>Cosmetic Applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin barrier repairing activity</td>
<td>Essential fatty acids</td>
<td>- Moisturizing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Emollient</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Skin conditioning</td>
</tr>
</tbody>
</table>
RECOMMENDED DOSE

The recommended dose is between 0.5% and 5.0%.

BIBLIOGRAPHY