

**BICOWHITE®**  
MULTI-TARGET DELIVERY:  
THE ULTIMATE INNOVATION  
TO ELIMINATE DARK SPOTS

**bicowhite®**  
by bicosome®

# BICOWHITE COMPLEX



**BICOWHITE COMPLEX** is a brightening / lightening multi-target delivery system that works blocking the different processes involved in the formation of dark spots.

Increased melanin production gives rise to different hyperpigmentation disorders characterized by the appearance of dark spots in the skin.

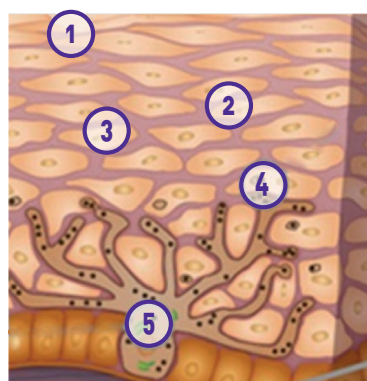
The main strategies to decrease the melanin content in the skin include preventing its formation, diminishing its transport or accelerating its elimination, which are complex processes that occur in different skin layers.

There are several active ingredients addressing one or more of these strategies. The limitation of these treatments usually resides in their poor skin penetration, which compromises their efficacy.

Bicosome® is a double encapsulation system formed by intelligent structures able to penetrate and to be retained in specific skin layers. This allows for a multi-target delivery of various active ingredients in appropriate levels of the skin, which provides real benefit in complex skin disorders, in which several processes occur in different skin levels at the same time.

**BICOWHITE incorporates five complementary whitening ingredients named Azeloglicine, Niacinamide, Alfa-Bisabolol, Vitamin C and Phytic Acid that are driven by Bicosomes to their specific site of action in a highly integrated and complete approach.**

**FIGURE 1: BICOWHITE MULTI-TARGET ACTION**



The intelligent structures of Bicowhite were designed to reach target skin layers and to block each process involved in the dark spot formation.

1. Cell renewal
2. ROS production
3. Inflammation
4. Melanin transfer
5. Melanin synthesis

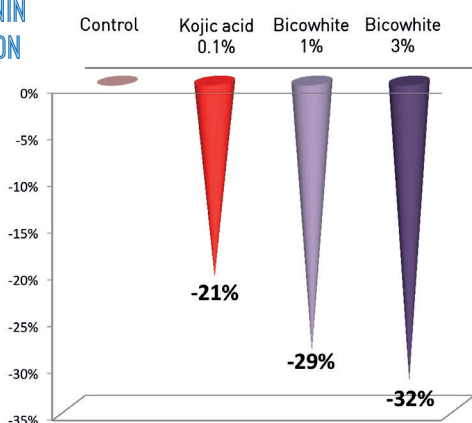


**FIGURES 2 & 3: WHITENING ACTIVITY IN RHE PIGMENTED SKIN AND HISTOLOGICAL ANALYSIS**

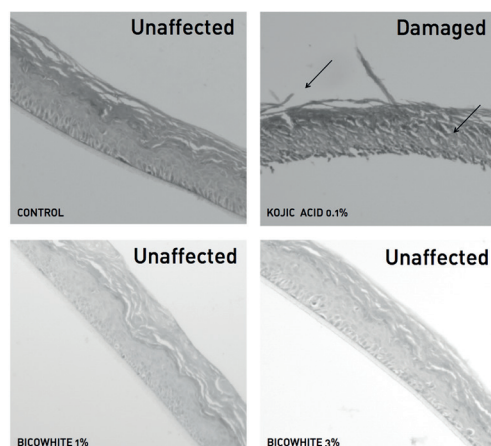
Bicowhite was applied in RHE tissues at two concentrations, 1 and 3%, and compared with Kojic acid at 0.1%. In four days of treatment, Bicowhite in both concentrations showed higher reduction in melanin content than Kojic acid (**Figure 2**).

Bicowhite did not affect the tissues treated, whereas Kojic Acid induced vacuolization of the granular layer and partial loss of stratum corneum (**Figure 3**).

## 2: MELANIN REDUCTION



## 3: HYSTO- LOGICAL ANALYSIS



Bicosomes are commercialised under a patent license agreement with the Spanish National Research Council (CSIC).

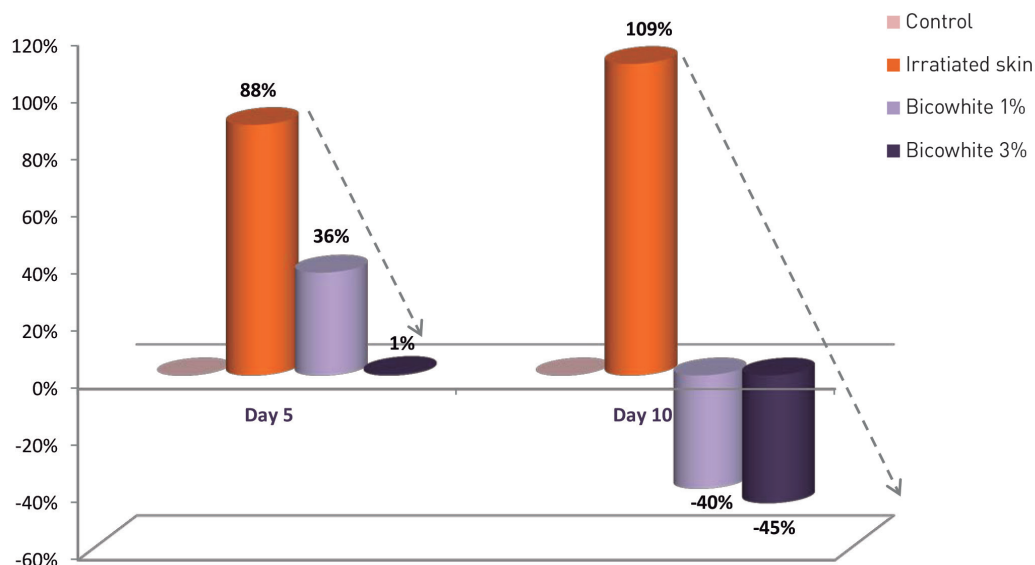
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## FIGURE 4: WHITENING ACTIVITY IN SKIN EXPOSED TO UV RADIATION

Explants of human skin were used to study the whitening activity of Bicowhite during 10 DAYS of UV exposure. The explants were irradiated daily with 0.5-1 J/cm<sup>2</sup> dose of UV light. Two quantifications of melanin / protein content were carried out in day 5 and day 10.

### 4: VARIATION OF MELANIN



After 10 days, Bicowhite 1% and 3% reduced the melanin content of skin exposed to UV radiation in 149% and 154% respectively, which corresponds to 40% and 45% below basal levels of control sample.

### Summary of Bicowhite® benefits:

- Complex of five complementary whitening ingredients.
- Mechanism of multi-target delivery.
- Higher efficacy and safety than Kojic Acid in RHE tissues.
- Protection of skin microstructure.
- Reduction of melanin below basal levels in skin UV irradiated.

### Formulation with Bicowhite®:

Recommended dosage: 1 – 3%

Max. temperature: 50° C

pH range: 4 - 8

Max. stirring speed: 3000rpm

### PRODUCT TYPES

WHITENING  
LOTIONS

AGE SPOTS  
LIGHTENERS

BRIGHTENING  
CREAMS

RADIANCE  
SERUMS

LIGHTENING  
ESSENCES

BRIGHTENING  
EMULSIONS

LIGHTENING  
MAKE-UP

### INCI of Bicowhite® Complex:

Aqua, Lecithin, Potassium Azeloyl Diglycinate, Lysolecithin, Niacinamide, 3-O-Ethyl Ascorbic Acid, Phenethyl Alcohol, Bisabolol, Caprylhydroxamic Acid, Tocopheryl Acetate, Phytic Acid, Caprylyl Glycol.

