



**CitroBio**<sup>®</sup>  
Brazilian Biodiversity



**CitroGreen**  
Actives

## AlphaWhiteness<sup>®</sup>

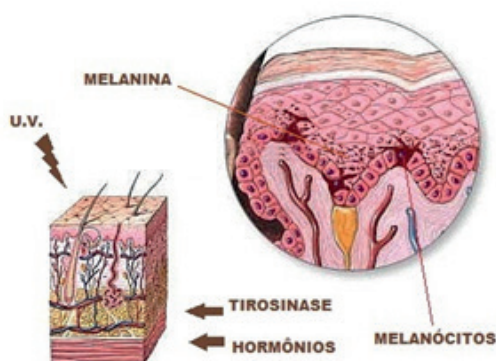
### 100% Natural alternative for whitening skin

AlphaWhiteness<sup>®</sup> it's an innovative active whitener and natural depigmentant proven effectiveness which promotes whitening, softness, recovery and uniformity of the skin. Through its synergistic activity with dual mechanism of action of its natural assets has been proven effective in whitening face, armpit and groin.

- 100% natural alternative to synthetic whiteners;
- Standardization of the skin pigmentation;
- Whitening, uniformity and brightness of the skin;
- Nutritious and regenerator;
- Contributed to the reduction of melanin synthesis;
- Anti-irritant and anti-inflammatory properties;
- Dermatologist tested;
- Does not contain preservatives;
- Hydroquinone and alpha-arbutin free;
- No animal testing;
- Acts as an inhibitor of alpha-MSH;
- Double mechanism of action for reduction of melanogenesis;
- Excellent skin penetration with shortages of irritation;
- Nutritive, regenerator and moisturizing.

### AlphaWhiteness<sup>®</sup> - MECHANISMS OF ACTION

The basal layer of the skin contains melanocytes, which produce a dark pigment called melanin, a protein that ensures the color of the skin and prevents damage from ultraviolet radiation to our DNA.



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The pigmentation of the skin results from the production and distribution of melanin in the epidermis. It is influenced by melanogenic activity within the melanocytes, by the size, number, composition and distribution of the melanocyte cytoplasm particles and the chemical structure of the melanin.

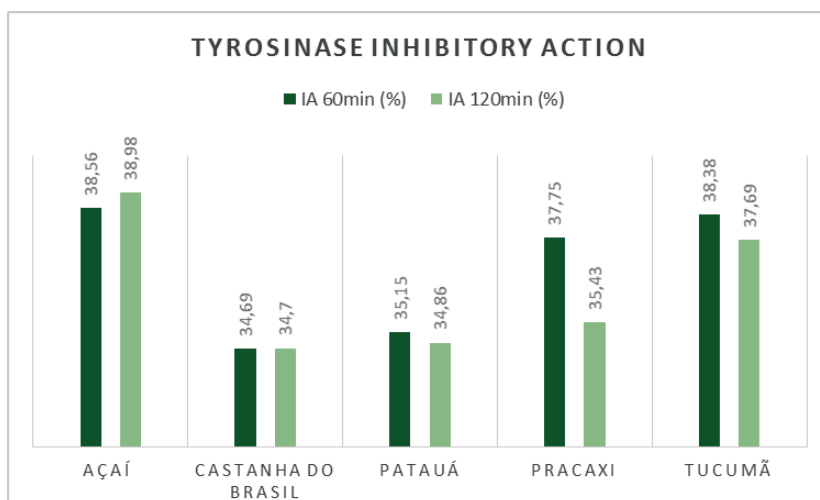
Hyperpigmentation of the skin is a consequence of the increase in the number of melanocytes that may be caused by the incidence of ultraviolet rays from sunlight, by chronic inflammation, or the abnormal release of a hormone, called  $\alpha$ -MSH.

**AlphaWhiteness**<sup>®</sup> intervenes in the production of melanin, inhibiting the tyrosinase enzyme, It acts as an inhibitor of  $\alpha$ -MSH hormone and the transference of pigments to keratinocytes, decreasing melanogenesis and skin darkening.

### AlphaWhiteness<sup>®</sup> - CHARACTERISTICS

Studies show that the synergistic presence of oleic acid (C18: 1), the main component of Açai Oil, is essential for the inhibition for the tyrosinase enzyme and consequently it promotes high whitening of the skin.

The fatty acids present in açai oil regulate the skin lipid structure, being an important to recover the skins with changes in its structure.



Source: Braz. J. Pharm. Sci. vol.48 no.3 São Paulo July/Sept. 2012

**Alpha Natural Bisabolol** is a sesquiterpene alcohol obtained from the sustainable stewardship plan for the essential oil of Candeia tree (*Eremanthus erythropappus*).

Recent studies show that the Alpha Bisabolol Ntarual is an effective active in hyperpigmentation because it inhibits the rate of  $\alpha$ -MSH decreasing melanogenesis and skin darkening.

Its anti-inflammatory action comes inhibiting the metabolism pathway of arachidonic acid through the presence of lipoxygenase and cyclooxygenase enzymes. Thus, it gives the blocking of biosynthesis of leukotrienes and prostaglandins are important chemical mediators of inflammation. (Fig.4).

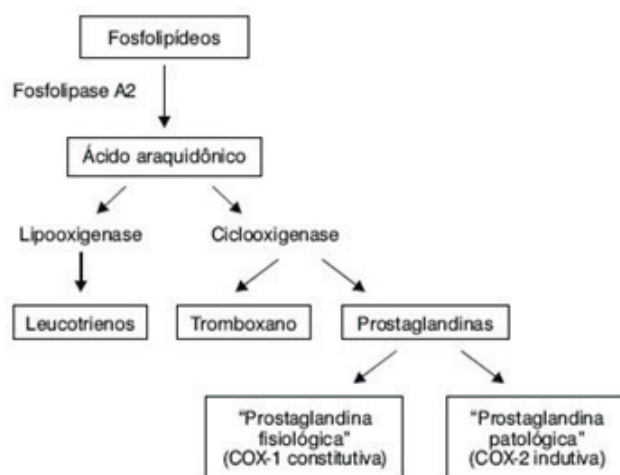


Fig.4. Mechanism of Action for Non-hormonal Anti-Inflammatory Agents - Alpha Bisabolol

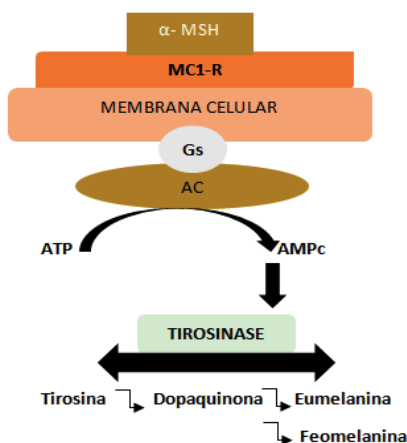
## AlphaWhiteness<sup>®</sup> - INHIBIT THE RATE OF $\alpha$ -MSH (HORMONE STIMULANT OF MELANOCYTES)

Recent studies show that the **Alpha Bisabolol** is an effective active in hyperpigmentation able to inhibit  $\alpha$ -MSH rate (melanocyte stimulating hormone).

As skin pigmentation also suffers stiff hormonal control,  $\alpha$ -MSH hormone present in melanocytes has great importance in the regulation of dark color of human skin.

The  $\alpha$ -MSH through the MC1-R ( $\alpha$ -MSH receptor gene) activates adenylyl cyclase (AC) and increasing AMPc (adenosine monophosphate cyclic) intracellular, resulting in the production of dark pigment eumelanin. (Fig.3)

**AlphaWhiteness<sup>®</sup>** promotes the inhibition of  $\alpha$ -MSH rate, discouraging melanin synthesis and pigment transfer to keratinocytes decreasing melanogenesis and skin darkening.

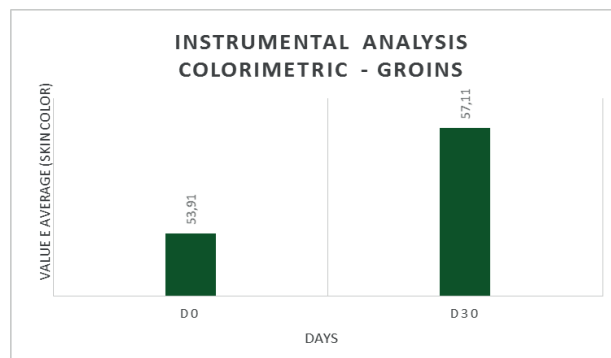
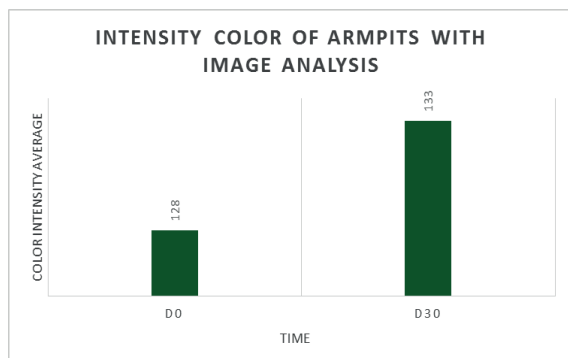


Fonte: Thody AJ, et al.20



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Comparing the average intensity value of the stain before and after using the product, it was found that the product promoted whitening 4% (image analysis) armpit and groin 6% (colorimetric instrumental analysis).



### AlphaWhiteness<sup>®</sup> - APRECIABILITY COSMETIC FOR ARMPITS AND GROIN

- 97% of the volunteers liked AlphaWhiteness<sup>®</sup>;
- 90% of the volunteers feel that AlphaWhiteness<sup>®</sup> improvement / whitens armpits;
- 80% of volunteers felt that the AlphaWhiteness<sup>®</sup> cleared the groin;
- 83% of volunteers felt that the AlphaWhiteness<sup>®</sup> left the skin became softer;
- 90% felt that the AlphaWhiteness<sup>®</sup> left the skin more renewed;
- 93% felt that the AlphaWhiteness<sup>®</sup> left more hydrated skin;
- 93% of the volunteers feel that AlphaWhiteness<sup>®</sup> leaves the skin smoother and recovered after 30 days of use.

### CONCLUSION

The treatment of pigmented skin was tested in individuals of both sexes and presented statistically significant efficacy in pigmented skin whitening in only 30 days of use.

### AlphaWhiteness<sup>®</sup> - TOXICOLOGICAL INFORMATION

It was applied to the AlphaWhiteness<sup>®</sup> dermatological assessment of the primary and accumulated dermal irritability and sensitization compared to a control (patch test).

AlphaWhiteness<sup>®</sup> evaluated in volunteers:

- No adverse reactions were detected in the product and control application regions during the whole study;
- No volunteer reported having felt discomfort sensations either with the test product or the control during the study;
- The AlphaWhiteness<sup>®</sup> did not induce cutaneous irritation and sensitization during the study. Therefore, it allows the claim of "Dermatologically tested".



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## AlphaWhiteness<sup>®</sup> - PROVEN EFFECTIVENESS IN SKIN WHITENING

The effectiveness of the composition of AlphaWhiteness<sup>®</sup> in skin whitening was proved after using the test product for 4 weeks. The Clinical Test Methods and Colorimetric Analysis (Skin Colorimeter) evaluated the results.

According to the obtained skin color (E value), there is statistically significant difference ( $p < 0.05$ ) for the values obtained for skin on D0 (baseline) and D30 (after product use). The product promoted skin bleaching of 2% in 30 days of use.

The graph below (E values per time) reveals that there was color variation (bleaching) in 30 days of product use

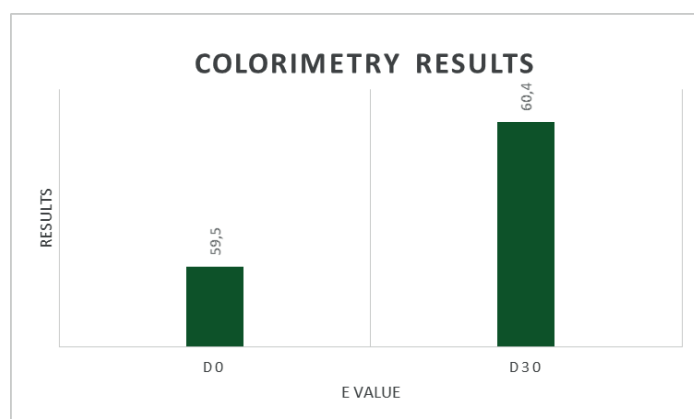


Chart: colorimetric values versus time (before and after treatment).



D0



D30

## AlphaWhiteness<sup>®</sup> - COSMETIC APPRECIABILITY

- 88% of the volunteers liked AlphaWhiteness<sup>®</sup>;
- 64% thought that AlphaWhiteness<sup>®</sup> lightened / improved skin dark spots;
- 73% thought that AlphaWhiteness<sup>®</sup> was effective to make the skin more uniform in 30 days of use.

## AlphaWhiteness<sup>®</sup> PROVEN EFFECTIVENESS IN WHITENING OF ARMPITS AND GROIN

In colorimetric instrumental evaluation of efficacy the product ALPHAWHITENESS armpit and groin showed progressive depigmentation and uniform skin tone, promoting statistically significant whitening and providing naturally healthy armpits and groins only 30 days of use.



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## AlphaWhiteness<sup>®</sup> - RECOMENDATIONS

Recommended concentration: 3,0 a 5,0 %.

- Skin Care (face & body);
- Products bleaching, recovery and standardization of skin tone;
- Products for prevention and treatment of pigmentation;
- Products for whitening and uniform skin tone for armpits and groins.

## AlphaWhiteness<sup>®</sup> - RESULT

The natural active AlphaWhiteness<sup>®</sup> has anti-inflammatory, anti-irritant, as well as inhibition activity of the tyrosinase enzyme, alpha stimulating hormone of the melanocyte ( $\alpha$ -MSH), and the transfer of pigments to keratinocytes decreasing the melanogenesis and darkening skin, providing significant efficacy in the treatment of cutaneous hyperpigmentation and related reactions.

Proven Synergy between actives 100% natural, sustainable and effective.

Note: All methods are validated in the relevant regulatory laboratories and the results obtained were treated with appropriate statistical power. Citróleo, in partnership with Avisa and IPclin (including the FAPESP Lab.), applied the best scientific protocols that support the real benefits of the studied actives.



POWERED BY NATURAL ALPHA BISABOLOL