Cosmetic efficacy of 2-hydroxy-5-octanoylbenzoic acid

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Introduction

The aim of two independent studies was to prove skin smoothing and colour improving efficacy of daily applied cosmetic emulsions containing 1% of 2-hydroxy-5-octanoylbenzoic acid. The first study (I) concerned in vivo assessment of naso-labial fold depth by digital image analysis. The second study (II) was assessment of face skin condition after application of emulsion containing 2-hydroxy-5-octanoylbenzoic acid vs. placebo emulsion (half-face method). Instrumental evaluation in both studies was supplemented with volunteers’ self-assessment.

Materials and methods (1)

Group of volunteers included to the study applied 2 times daily emulsion containing 2-hydroxy-5-octanoylbenzoic acid on the face skin surface for 4 weeks. Finally digital images were made on 14 volunteers, 32-45y of age. Volunteers with sensitive skin, inflammations or exposure on the UV were excluded from the experiment. 4 images were made: before the application (I), immediately after the application (II), after 1 week of daily application (III), after 2 week of daily application (IV).

Results of the image analysis

After 2 weeks of daily application crow’s feet region and naso-labial fold were significantly improved.

Volunteers’ self-assessment results

*The five-point scale was applied: 1 – very bad, 2 – bad, 3 – no visible changes, 4 – good, 5 – very good.

Materials and methods (2)

In the second study we evaluated the emulsion containing 1% of the 2-hydroxy-5-octanoylbenzoic acid (A) vs. the placebo emulsion (B) in the half-face test. Volunteers have applied emulsions daily for 6 weeks. Finally we included into the study 16 volunteers of sensitive, normal, mixed or dry skin, 26-82 y of age. Volunteers were separated into 4 groups according to Group: Type I, II, III, IV. Tew: skin moisture (corneometric), elasticity (cutanometric) and skin colour (chromanometric). All measurements were conducted in controlled temperature (20°C) and humidity (40-50% RH) conditions.

Volunteers’ self-assessment results

According to volunteers’ self-assessment daily application of both emulsion caused improvement of the skin look.

After application of A and B volunteers stated:

- Subjective skin moisturization improvement
- Improvement of skin sensory parameters (smoothness, velvet feel)

After application of emulsion A volunteers stated additionally:

- Skin colour improvement
- Lower visibility of melamin based skin discolorations
- Improvement of skin smoothness and elasticity

Measurements results

In vivo measurements proved that examined emulsions reduce TewL in the long term study (Fig 5.).

- Skin elasticity improvement after 6 weeks
  15.5% after application of the emulsion A
  30% after application of the emulsion A

- Skin colour improvement and discolorations reduction after 6 weeks
  6% after application of the emulsion A
  18% after application of the emulsion A

Summary

Two studies described above were conducted with participation of two independent groups of volunteers of different age and skin condition. Efficacy of the compound was proved by image analysis and in vivo objective measurements results as well as in the volunteers’ self-assessment. Image analysis showed naso-labial fold and crow’s feet region wrinkles reduction and skin brightening. Volunteers’ self-assessment proved that emulsion containing 2-hydroxy-5-octanoylbenzoic acid improved skin elasticity. Instrumental in vivo measurements proved TewL reduction and improvement of the skin elasticity by 50% after 6 weeks of the emulsion application.

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