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The Efficiency of Topical *Argireline* for Reduction of Mimic Wrinkles: Methodological Approach

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Abstract

Background. Antiaging cosmetic treatments and products, that can slow down skin aging and reduce visible signs of it, including expression of wrinkles, are being very popular. For prevention of wrinkles formation and their reduction combinations of Matrixyl™ (palmitoyl pentapeptide-4) that stimulates collagenesis and Argireline™ (acetyl hexapeptide-8) that inhibits SNARE complex in the presynaptic axon terminal, and thus inhibits muscle contraction and relaxes facial muscles, are often used, assuming that the latter have crucial impact on mimic wrinkles formation and reduction. But there is neither evidence on its real efficiency on muscle contractions, nor on its ability to penetrate to the action site in case of topical application, as there has been no appropriate simple methodology for measuring that; consequently the role of topically applied argireline in case of eventual improvement or prevention of mimic wrinkles have been unclear.

Aim. Efficiency determination of topically applied Argireline™ solution on activity reduction of mimic muscles by using a novel device for quantitative measurements of the facial muscles contractions (mimic-meter), invented at VIST¹.

Methods. Argireline™ solution (10% w/w, Lipotec, Spain) was used by 8 females (20-40 years, with regular home skin care, not using any advanced active anti-aging products) for topical application 8 weeks twice a day on a cleaned skin in lateral periorbital, glabellar and frontal region, respectively; moisturizing cream was applied after application of the solution. Before 1st application of the product, after 2, 4, 6 and 8 weeks of the product applications, respectively, muscles activities (forced contractions and relaxations) were measured by mimic-meter (1,2) to determine the effects of Argireline™ solution, standardized photographs were taken for expert assessments of wrinkles using Merz wrinkle classification scale, and facial skin moisture and elasticity were measured with “Callegari soft plus“ device.

Results. Mimic-meter (1,2) has proven to be a valuable and useful novel device for quantitative measurements of the facial muscles contractions for determination of the efficiency of compounds that inhibits muscle contractions, such as butulinum toxin (e. g. Botox™) and botox-like compounds, such as Argireline™, and products containing it. Results of the study, obtained by measurements with mimic-meter, show that topically applied Argireline™ can have impact on muscle activity, and it thus can penetrate through the skin to the site of action. These conclusions are supported by other measurements and expert evaluations based on photographs.

Conclusions. The methodology using mimic-meter was developed for quantitative determination of efficiency of topically applied Argireline™ on muscle activity reduction, and the results show it can have direct impact on muscle activity, and consequently on mimic wrinkles formation and reduction.

Keywords: Argireline, facial skin, moisture, wrinkles, quantitative skin measurements, muscle contractions and relaxation

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