



Lycopersicon esculentum and the Effects of Skinutrix BioShield™ with Tomato Dehydrated Stem Cell Ex-Tracts Improving the Whitening and Brightening Skin Tone Before and After Performing a BioActivated PRP with Bioquantine® for an Advanced Skin Rejuvenation

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Abstract

In this work, the importance of dietary *Lycopersicon esculentum* in skin health and appearance is combined with other biological sources is reviewed and discussed. References are made to their applications in health-promoting and nutricosmetic products and the important public health implications that can be derived. PRP stands for platelet-rich plasma. This is concentrated blood platelets in the patient's own plasma. To create this, the doctor takes blood and spins it in a centrifuge to concentrate the platelets. The PRP injections based on the platelets growth factors are release to aid healing multiple tissues and stimulating the skin regeneration. Our evidence based protocol was created to combined these unique carotenoid (*Lycopersicon esculentum*) with distinctive natural properties and our designed BioActivated PRP (adding a unique polypeptide: Bioquantine®) we demonstrate the safety use of it and how it can be beneficial in this trial.

Keywords: *Lycopersicon esculentum*; Bioquantine; Platelet Rich Plasma; BioActivated PRP

Epithelial tissues like those that form the skin are essential to protect the human body from diverse aggressions. The skin is the largest organ of the human body and consists of several layers and structures. It is an essential physical barrier that protects us from the external environment (radiation, xenobiotics, microorganisms, etc.) but also intervenes in essential processes, such as thermoregulation, metabolism, the homeostasis of fluids, sensing, or the production of vitamin D and other important compounds [1,2]. Given its importance, damage to the skin lead to disorders of different natures that can eventually lead to diseases. When the skin integrity is compromised by a multitude of factors including mechanical, chemical, vascular, infectious, allergic, inflammatory, intrinsic, injuries, etc; can lead the individual to even develop skin cancers, with consequent negative effects in the homeostasis. Skin appearance is important at all levels, since some at-tributes (pigmentation, color uniformity, wrinkling, elasticity, etc.) have a significant influence on attractiveness judgements, and skin signaling has been associated to aspects ranging from mating choices to socioeconomic status [3,4]. This protocol is based on our principle of combinatorial biologics from natural sources including *Lycopersicon esculentum* extract isolated and Bioquantine® in skin health and appearance. References are made to their applications in health promoting, nutricosmetic products and the boosting effect on the facial BioActivated Platelet Rich Plasma (PRP + Bioquantine®) showing the improved outcomes after the 8 weeks protocol. Our focused analysis is based on the prevention and protection given by *Lycopersicon esculentum* on the colorless UV radiation (UVR)-absorbing dietary carotenoids. The skin rejuvenation of-

ferred by Bioquantine® and the obtained skin regeneration through PRP facial applications. *Lycopersicon esculentum* is a carotenoid, readily bioavailable, and have been shown to be involved in several health-promoting actions, as pinpointed in recent reviews [5]. The benefit of adding a topical product containing Bioquantine® on its formula boosts then effect of the skin rejuvenation combined with that unique UVR-absorbing carotenoid (*Lycopersicon esculentum*) which gives a beneficial in protecting (BioShield™) clearing the path of an optimal whitening and brightening skin tone in patients.

As it is proven, tomatoes and tomato products are rich sources of carotenoids principally lycopene and *Lycopersicon esculentum*, followed by β -carotene and lutein. Epigenetic factors can cause several genotoxic effects on cells, including oxidative stress, DNA sequence breakage and protein modification. Among the body organs, skin is certainly the most exposed to many epigenetic factors including pollution, stress and many environmental chemicals that can be causing the most damaged by the toxic effects [6]. With the aim of improving the reprogramming and therapeutic potential of Bioquantine®, an extracted biomaterial obtained from *Xenopus laevis* frogs oocytes, and related somatic tissues. As it was referred (Paylian, et al. 2016), the observed therapeutic effects of treatment with a purified extract (Bioquantine®) on experimentally induced pathologies such as experimental skin wrinkling induced by squalene-monohydroperoxide in murine models, the skin rejuvenation effect of Bioquantine® was proven [7,8]. The current abstract observed beneficial changes with the combinatorial use of Skinutrix® BioShield™ and Bioquantine®. Skinutrix® BioShield™ oral

administration was given 15 days before of our first BioActivated PRP application to our patients with photo damaged and aged skin condition. Platelet-rich plasma (PRP) has gained popularity in facial procedures because of its role in wound healing and tissue repairing. PRP, having a higher concentration of platelets, allows for greater release of growth factors and bio-logically active proteins, which in turn activates the wound-healing cascade stimulating neoangiogenesis and collagen production. One of the most popular uses for PRP is for facial skin rejuvenation in the form of dermal injections and topical application during micro needling [9]. PRP proved to promote wound healing and aid in facelift, volumetric skin, skin rejuvenation, regeneration, and reconstruction; improve wrinkling; stimulate hair growth; increase hair follicle viability and its survival rate; prevent apoptosis; increase and prolong hair growth stage. The use of PRP application are carried out in aesthetic dermatology and to assess the literature on platelet-rich plasma outcomes on main aesthetic practices of cosmetic procedures [10]. By BioActivated PRP we designated the boosted 2 ml of ordinary PRP by adding 0.2 ml of Bioquantine® applied with 30G x 13mm syringes in 12 facial points. Carotenoids are pigments ubiquitous in nature and responsible for the bright yellow to dark red color of vegetal products. Numerous epidemiological studies have demonstrated a relationship between carotenoid intake and reduction in risk of developing degenerative diseases, being the tomatoes and tomato products, a rich source of carotenoids and tomato stem cell extracts dehydrated in our *Lycopersicon esculentum* formula Skinutrix® BioShield™. As part of our 60 days skin rejuvenation protocol we also added a formulated cream to support the patients skin condition at night from day 1, being Bioquantine® and kakadu plum the main ingredients to maintain the desired outcomes. An established 8 weeks medical protocol randomly selected 6 patients with aged skin and evident photo damaged and aged skin conditions where the ideal candidates to demonstrate the benefits of our combinatorial biologics method. Skinutrix® BioShield™ supplement in capsules with concentrated *Lycopersicon esculentum* extract developed with a unique liposome technology capable to stimulate the skin protection and regeneration was prescribed to our patients 15 days before the first BioActivated PRP facial application with the purpose of stimulating the sun protection and the skin whitening before the mentioned procedure (Figure 1). By the intake of Skinutrix® Bio-Shield™ supplement capsules we experienced an early positive result even before the BioActivated PRP application, clearing the path to proceed with the first Bio-Activated PRP application. The well tolerated and added Bioquantine® to the PRP gave the patients a boosted result from the first performed application, patients reported 1 week after the procedure the hydration and smoothness feeling after the combinatorial biologics therapy (Figure 1). Continuing with the use of the cream by night time patients referred a relief sensation during the whole protocol. The second BioActivated PRP application came 1 month after the first and that is when we noticed an advanced facial skin condition improvement (Figure 2).

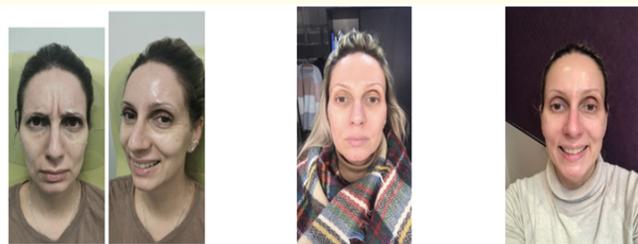


Figure 1: 38y female with photo damaged skin condition showing the results after the intake of Skinutrix® BioShield™ and 2 BioActivated PRP applications during the 8 weeks protocol.



Figure 2: 43y female with photo damaged skin condition showing the results after the intake of Skinutrix® BioShield™ and 2 BioActivated PRP applications during the 8 weeks protocol.



Figure 3: 72y female with aged skin condition due to a metabolic disorder. a) day one before the protocol b) half of the face with BioActivated PRP application c) 8 weeks after 2 applications of Bioactivated PRP + Skinutrix® BioShield™

The basic items and tools utilized to compare the benefits were from regular pics and dermatoscope obtained images showed weekly changes and improvements, been some of them dramatically better than others.

Conclusion

This 8 weeks protocol, utilizing our combinatorial biologics showed evidence of facial skin rejuvenation, it was also well tolerated and safe to apply to our 6 patients from different ages (34-72). Erythema, local pain and swelling were reported by 4 patients for few minutes, 2 patients developed minor hematoma but none allergic or major side effects (systemic) were reported.

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