



Cosmetic use of cyanobacterial secondary metabolites

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Abstract:

Human skin is one of the most complex body organs that functions as a physical barrier against water loss and environmental stressors including the UVR, ROS, pathogens, chemicals and physical agents. Skin aging, fragility, thinning, laxity, enlarged pores, dryness, fine lines, and wrinkles happen to skin texture as a result of chronic exposure to intrinsic and extrinsic destructive factors. This leads to the growing importance of the cosmetic industry. Therefore, we need to discover and investigate harmless and efficient natural raw ingredients. According to studies, cyanobacteria are rich sources of metabolites, which can be used to fight against skin-related problems (Ariede et al., 2017). Cyanobacteria are morphologically diverse photosynthetic prokaryotes that are broadly distributed in both terrestrial and aquatic environments. Cyanobacteria have developed especial mechanisms to help them endure the extreme conditions such as highlight intensities, low or high temperatures, pH and salinity (Evangelista et al., 2008). Therefore, various secondary metabolites can be extracted from them. For instance, MAAs, polysaccharides, pigments, scytonemin, antioxidants, and carotenoids are some of the beneficial metabolites extracted from cyanobacteria (Sathasivam et al., 2017). Diverse cyanobacteria strains are now being broadly used in skin care products for various skin conditions by acting as sunscreens, anti-wrinkling agents, moisturizer or texture enhancing agents) Derikvand et al., 2017). Some of the most beneficial cyanobacterial strains that have presented cosmeceutical properties are *Spirulina*, *Nostoc*, *Anabena* sp., *Oscillatoria* sp., *Scytonema* sp., *Chroococcidiopsis* sp. and *Lyngbya* sp. Therefore, cyanobacteria can be an appropriate source of novel bioactive compounds for the cosmetic industry.

Biography:

Gisoo Sarvari is a 22 year old undergraduate student at Islamic Azad University of Medical s

Sciences and studies pharmaceutical chemistry. Her first review article was published as a chapter in the Elsevier:



Handbook of Algal Science, Technology and Medicine. ISBN: 09780128183052.

Nowruzi, B., Sarvari, G., Blanco, S., 2020. Applications of cyanobacteria in biomedicine. In: Konur, O. (Ed.) The Handbook of Algal Science, Microbiology, Technology, and Medicine. Elsevier, Amsterdam, pp. xxx-xxx.

Miss Sarvari also collaborated in another article entitled: "Colorectal Cancer: From Gene to Personalized Medicine; Heterogeneity challenge for prognostic and predictive biomarkers in CRC to achieve personalized medicine".

Publication of speakers:

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- Evangelista, V., Barsanti, L., Frassanito, A.M., Passarelli, V. and Gualtieri, P. eds., 2008. *Algal toxins: nature, occurrence, effect and detection*. Springer Science & Business Media.
- Sathasivam, R., Radhakrishnan, R., Hashem, A. and Abd_Allah, E.F., 2017. Microalgae metabolites: A rich source for food and medicine. *Saudi Journal of Biological Sciences*.

2nd European Summit of Pharmacology and Toxicology

Citation: Gisoo Sarvari; Cosmetic use of cyanobacterial secondary metabolites; July 28, 2020; Vienna, Austria