J Nutr Food Sci 2016, 6:4 (Suppl)
http://dx.doi.org/10.4172/2155-9600.C1.024

Marine melanin: A new generation photoprotective skin supplement

Rohit R S[1], **Binsi P K**[2], **Zynudheen A A**[2] and **Shaji A K**[1]
[1]Greenle Lifesciences Pvt. Ltd., India
[2]ICAR-Central Institute of Fisheries Technology, India

Marine biopolymers are attracting a great deal of attention because of their distinct bioactive and physicochemical properties. Among marine biopolymers, melanin is unique in many aspects, as it has many functional sites, which makes it suitable for varied types of industrial applications. It has a major role in body's defense against stress and radiation damage and is the most important photoprotective factor against skin cancer. It can completely block UV rays that cause sunburn, immune suppression, DNA damage, malignant transformation of skin cells and premature aging. Apart from these, melanin acts as a chelator for several heavy metals and radioactive trace elements that are deposited on skin from the various sources. Industrially, melanin may be derived from microbial or animal sources (cephalopod ink and bovine eyes) or can be engineered chemically from melanin monomer precursors. In Central Institute of Fisheries Technology, marine melanin was purified from cuttlefish ink and was modified for the formulation of photoprotective sunscreen lotion. Marine melanin isolated from cephalopod ink has a technological advantage that the raw material is abundant and cheap, as cephalopod ink is generally considered as a process discard. UV-VIS absorption spectra of cuttlefish melanin showed prominent absorption in UV region that reduced towards visible region. FTIR spectra showed characteristic peaks of OH, NH and antioxidant phenolic groups of melanin pigment. Antioxidant potential of melanin was further confirmed by standard antioxidant assays. Elemental composition of melanin was found to be identical to human skin melanin. In brief, the results of present study identifies marine melanin as a prospective photoprotective agent for the formulation of sunscreen lotion, since isolated melanin had significant antioxidant and radical scavenging properties, besides exhibiting broadband absorption in the entire UV region.

rohitrs87@gmail.com