

A Review on Benefits of Lycopene in Formulation of Sunscreen

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Abstract: *Lycopene which is a carotenoid found in tomatoes and other red and orange fruits, has shown benefits in dermatology and photoprotection. It is a powerful antioxidant and has been proposed as a potential ingredient for sunscreen preparations designed to reduce UV-induced skin damage. The review will discuss the available data regarding the activity of lycopene in sunscreen formulations, mainly in relation to mechanism of action, performance.*

The photoprotective properties of lycopene depend on its free radical scavenger activity and capacity for neutralizing ROS, produced upon UV activation. ROS plays a key role in damage to structures within skin through DNA mutations, inflammation, photo-ageing, and enhanced risk for skin cancer. Lycopene has antioxidant properties and the capacity to absorb UV radiation in the UVA and UVB spectrum, making it an interesting ingredient in fortified sunscreens. Several in vitro and in vivo studies have shown that lycopene can significantly reduce erythema, DNA damage, and oxidative stress after UV exposure, making it an interesting potential preventive agent against both acute sunburn and chronic, cumulative damage associated with long-term skin ageing.

Lycopene remains a highly promising natural photoprotective agent; however, additional clinical studies and safety assessments must be undertaken to establish the best use of lycopene as a participant in the composition of sunscreen ingredients.

Keywords: Lycopene, Tomato Extract, herbal sunscreen, sunscreen formulation