

FREE RADICALS AND ANTIOXIDANTS: COMPARATIVE *IN VITRO* STUDY OF CURCUMIN AND XANTHOGREEN™ PRODUCTS TO DEAL WITH OXIDATIVE STRESS

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(Received 11 March 2024) (Accepted 07 November 2024)

ABSTRACT

Lifestyle disorders caused by imbalanced diet, stress, lack of sleep and exercise disturb the body's homeostasis and cause oxidative stress. The generated reactive radicals damage different organ systems, causing hormonal imbalance, cardiac and respiratory disorders, and neurodegeneration. Our body equips antioxidant enzymes and proteins that scavenge these free radicals to prevent this damage. For better defence against oxidative stress, it is essential to consume antioxidants. This makes it crucial to screen foods from natural sources for their antioxidant activity. Curcumin and Lutein-based derivatives (Xanthogreen™) are the phytochemicals analysed in this research using six different antioxidant assays. It was found that bis-demethoxy curcumin (BDMC) 95 % among the curcumin derivatives; Xanthogreen™ Plus, and Lutein ester among the Lutein derivatives had the most significant antioxidant activity. This suggests the potential for developing an adjuvant therapy using these derivatives to target free radicals in treating lifestyle-based disorders.