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Chapter 22

Curcumin: A Phytochemical of Significant Importance

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Introduction: Curcumin, a natural polyphenolic compound extracted from turmeric plant, has been widely used as an anti-oxidant, anti-infammatory, anti-cancer drug and also has pharmacological effects on alzheimer's disease, diabetes and atherosclerosis. It is mostly used in Indian and Chinese system of medicines.

World-Health Organization (WHO), as well as Food and drug administration (FDA) characterize curcumin and turmeric as safe product for use. Average intake of turmeric in Indian diet is approximately 2-2.5 g for a 16 kg. Individual, which corresponds to a daily intake of approx 60-100 mg of curcumin (Rames et al., 2014).

Besides its cytoprotective role, curcumin due to its anti-oxidant and anti-inflammatory action, contains potential as an hepatoprotective and anti-fibrotic compound (Cerny et al., 2011). The rhizome of various *curcuma* species has long been used by various tribal communities. Extract from *C.caesia* have a high economic potential owing to their putative medicinal properties (Zuraida et al., 2014). Prasad et al., 2014 displays that curcumin may act as treatment in various chronic conditions, includ-ing autoimmune, cardiovascular, neurological, and psychological diseases.

It is elavorated in previous studies that curcumin activities inhibit ROS formation and scavenge free radicals in pathological conditions, resulting in the protection of vital cellular components such as lipids, proteins and DNA (El-Wakf et al., 2011). Curcumin might suppress genotoxic effects caused