Ocimum sanctum L (Holy Basil or Tulsi) and its phytochemicals in the prevention and treatment of cancer.

Research and Development, Father Muller Medical College, Kankanady, Mangalore, Karnataka, India. msbaliga@gmail.com

Abstract
Ocimum sanctum L. or Ocimum tenuiflorum L, commonly known as the Holy Basil in English or Tulsi in the various Indian languages, is an important medicinal plant in the various traditional and folk systems of medicine in Southeast Asia. Scientific studies have shown it to possess antiinflammatory, analgesic, antipyretic, antidiabetic, hepatoprotective, hypolipidemic, antistress, and immunomodulatory activities. Preclinical studies have also shown that Tulsi and some of its phytochemicals eugenol, rosmarinic acid, apigenin, myretenal, luteolin, β-sitosterol, and carnosic acid prevented chemical-induced skin, liver, oral, and lung cancers and to mediate these effects by increasing the antioxidant activity, altering the gene expressions, inducing apoptosis, and inhibiting angiogenesis and metastasis. The aqueous extract of Tulsi and its flavonoids, orintin, and vicenin are shown to protect mice against γ-radiation-induced sickness and mortality and to selectively protect the normal tissues against the tumorcidal effects of radiation. The other important phytochemicals like eugenol, rosmarinic acid, apigenin, and carnosic acid are also shown to prevent radiation-induced DNA damage. This review summarizes the results related to the chemopreventive and radioprotective properties of Tulsi and also emphasizes aspects that warrant future research to establish its activity and utility in cancer prevention and treatment.

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