

RESEARCH ARTICLE

PHYTOPREVENTIVE ANTIHYPERLIPIDEMIC ACTIVITY OF *CURCUMA ZEDOARIA*

A.R. Srividya^{1*}, S.P. Dhanabal², Ajit Kumar Yadav³, M.N. Sathish Kumar⁴ and V.J. Vishnuvarthan¹

¹Department of Pharmaceutical Biotechnology, JSS College of Pharmacy, Ooty-643 001, Tamil Nadu, India

²Department of Phytopharmacy and Phytomedicine, JSS College of Pharmacy, Ooty-643 001, Tamil Nadu, India

³Department of Pharmaceutical Biotechnology, Invertis Institute of Pharmacy, Invertis University, Bareilly-243 123, Uttar Pradesh, India

⁴Department of Pharmacology, JSS College of Pharmacy, Ooty-643 001, Tamil Nadu, India

*E-mail: pharmarsrividya@yahoo.com, ajit.y@invertis.org

Tel.: +91-9484175648, +91-423-2443393

Received: November 11, 2011 / Revised: April 10, 2012 / Accepted: April 11, 2012

***Curcuma zedoaria* belongs to the family Zingiberaceae. Hydroethanolic extract of *Curcuma zedoaria* rhizome showed only the presence of alkaloids. Total phenol content was found to be 34.45 ± 1.9 expressed as mg/g equivalent of gallic acid. Total flavonol content was found to be 45.56 ± 2.38 mg/g equivalent of quercetin. *In vitro* antioxidant activity IC₅₀ value for hydroethanolic extract was found to be 930 ± 16.35 for DPPH method, $>1000 \mu\text{g/ml}$ for Nitric oxide method. Concentration required for reducing power was found to be $2.525 \pm 0.023 \mu\text{g/ml}$. total antioxidant capacity was found to be 230.2 ± 1.32 which was expressed as mM equivalent of Ascorbic acid. The extract was found to be effective in reducing TC levels after 12 days of pre treatment with extract at a dose of 200 and 400 mg/kg *b/w* reduced by 17.1% and 19.65%. No significant changes were seen on LDL, VLDL and HDL cholesterol levels.**

Key words: *Curcuma zedoaria*, Antihyperlipidemic, Antioxidant, Zingiberaceae, Lipid profile.

INTRODUCTION

Natural products are associated with a wide range of bioactivities and have played a vital role in treatment of diseases (Dahiya and Gautam, 2011; Jain *et al* 2011; Zahid Hosen *et al* 2011). *Curcuma zedoaria* is a perennial herb which is cultivated throughout India and traditionally, used as carminative, stomachic, gastrointestinal stimulant, diuretic, expectorant, demulcent, rubefacient as well as used in flatulence (Riaz *et al* 2011; Kim *et al* 2000). Zedoary's effect on digestive system is similar to ginger but milder. The Ayurvedic pharmacopoeia indicated use of rhizome in goiter. These rhizomes found to contain a number of terpenoids, including curcumene, curcumenone, curdione, curcumenol, curzerenone epoxide, a volatile oil (1.0-1.5%) resembling ginger oil and starch (50%). Traditionally, this rhizome is used for the

treatment of goiter and as antitumor, anti allergic and antimicrobial (Figure 1). In present work, antihyperlipidemic activity of the herb *Curcuma zedoaria* is reported.



Fig. 1. *Curcuma zedoaria* rhizome