

Full Length Research Paper

***Monechma ciliatum* methanolic extract regulates low density lipoprotein receptor and 3-hydroxy3-methylglutaryl coenzyme A reductase genes expression in HepG2 cells**

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***Monechma ciliatum* methanolic extract (MCME) obtained from *Monechma ciliatum* seedcake showed high total phenolic compounds with high antioxidant activity. The regulatory effects of MCME at 10, 20 and 50 µg/ml on low density lipoprotein receptor (LDLR) and 3-hydroxy-3-methylglutaryl-coenzyme A reductase (HMGR) were investigated in human HepG2 cell line using quantitative real-time polymerase chain reaction. LDLR mRNA level was increased significantly by 1.4, 2.6 and 4.3 fold in MCME treated cells at 10, 20 and 50, respectively, compared to untreated cells. Whereas, HMGR mRNA level was decreased significantly by 38, 63 and 80% in MCME treated cells at 10, 20 and 50, respectively, compared to untreated cells. The effect of MCME was concentration dependent, and different doses showed significant differences in regulation of both LDLR and HMGR genes. The present study showed that MCME effectively regulated the expression of LDLR and HMGR genes influencing the cholesterol metabolism in HepG2 cells.**

Key words: Antioxidant activity, β -carotene-linoleic acid assay, 1,1-diphenyl-2-picrylhydrazyl (DPPH), gene expression, low density lipoprotein receptor, 3-hydroxy-3-methylglutaryl-coenzyme A reductase, *Monechma ciliatum*.