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Carvacrol ameliorates the PPAR-a and cytochrome P450 expression on D-galactosamine induced hepatotoxicity rats

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Carvacrol (2-methyl-5-(1-methylethyl)-phenol) is a predominant monoterpenic phenol which occurs in many essential oils of the family Labiatae including Origanum, Satureja, Thymbra, Thymus, and Corydothymus species. It is well known for its anti-inflammatory, antioxidant and antitumor activities. The present study investigates the influence of carvacrol on CYP2E1 and PPAR- α on D-GalN-induced hepatotoxic rats. The mRNA and protein expression levels of CYP2E1 and PPAR- α have been assayed by semi-quantitative reverse transcriptase-polymerase chain reaction (RT-PCR) and western blot analysis. We found that the mRNA and protein expressions of CYP2E1 significantly up-regulated while the mRNA and protein expressions of PPAR- α significantly down-regulated on D-galactosamine induced hepatotoxic rats and treatment with carvacrol significantly suppressed the mRNA and protein expressions of these genes. Thus, the present results have shown that carvacrol has the hepatoprotective effect and also alleviates liver damage associated with GalN induced hepatotoxic rats by down-regulating the CYP2E1 and up-regulating the PPAR- α expression.

Biography

Balakrishnan Aristatile is an Assistant Professor in the Department of Food Science and Nutrition, College of Food and Agricultural Science, King Saud University, Saudi Arabia. He has done his Ph.D. in Biochemistry. His area of research is Molecular mechanism and phytochemicals treatment in the prevention of hyperlipidemia and herbal medicine. He is a member of Society of Biological Chemists of India, Society for Free Radical Research - India (SFRR- India), Indian Society of Atherosclerosis Research (ISAR) - India and Indian Science Congress, India.

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