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Herbal drug interaction and its implication: Inhibitory effect of *Nigella sativa* on Human CYP3A4, CYP3A5, CYP2C9 and CYP3A7

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Nigella sativa (*N. sativa*) (Family Ranunculaceae) is a widely used medicinal plant throughout the world especially in Asia, Africa and many Middle Eastern countries. It is considered as one of the greatest forms of healing medicine. Extensive studies on *N. sativa* seeds have shown its potential pharmacological and therapeutic effects including antidiabetic, antihypertensive, diuretic, digestive, anticancer, antioxidant, analgesic, immunomodulator, antimicrobial, anti-inflammatory, spasmolytic, gastroprotective, hepatoprotective effects etc. However, there has been much concerned about herbal-drug interactions due to the increasingly reported adverse drug effects and poisoning associated with the use of herbal medicine. The effect of *N. sativa* extract on hepatic drug metabolism in the rat was investigated in our laboratory. Both in vivo and *In vitro* experiments were employed to investigate the possibility of induction and inhibition effects on drug metabolism. Acute dosing (0.56 g/Kg) with *N. sativa* extract to rats caused a significant increase in plasma level of dicoumarol. *In vitro* studies assessed in 10,000xg liver homogenates from treated animals showed a significant decrease in benzphetamine N-demythelation, dicoumarol oxidation and ethoxycoumarin O-deethylation activities compared to liver homogenates from control animals. In addition, *N. sativa* extracts was tested *In vitro* for its possible inhibitory effect on cDNA-expressed human cytochrome P450 3A4, 3A5, 2C9 and 3A7-mediated metabolism of marker substrates. The present study investigates and throws light on the possible interactions of *N. sativa* with conventional drugs.

Biography

Zoheir A Damanhouri is an Associate Professor of Pharmacology in the Faculty of Medicine, King Abdulaziz University, Saudi Arabia. He obtained his BSc from Lancaster University (UK), and his MSc and PhD from the University of Wales in 1988. He held various posts in the University as Director of King Fahad Medical Research Centre, Vice-Dean of the Faculty of Medicine, Chairman of the Pharmacology Dept., Dean of Graduate Studies in the University and later as Vice-President for Development from 2007 till 2013. He has over 35 publications in the field of pharmaceutical sciences as well as in Strategic Planning and Postgraduate Studies.

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