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Essential oil of *Nigella sativa* inhibits angiogenesis via down-regulation of VEGF expression

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Nigella sativa is a popular spice that has been used traditionally for centuries for treatment of various human ailments, range from fever to intestinal disturbances to cancer. In this study an attempt was made to investigate the antiangiogenic activity of a supercritical CO_2 extract of seeds of *Nigella sativa* Linn. The extract was prepared at 60°C and 2500 psi. GC-MS analysis revealed the presence of thymoquinone. The extract showed potent antioxidant activity and strongly inhibited angiogenesis via its anti-proliferative effect against human umbilical vein endothelial cells (HUVECs) with IC50 value of 41.5±1.9 µg/ml. Our study reported that the extract down-regulated the expression of vascular endothelial growth factor (VEGF) in endothelia cells causing inhibition of various events of the angiogenesis cascade, including endothelial cell migration and differentiation on matrigel and consequently inhibited tube formation. This study highlights the therapeutic potentials of *N. sativa* SC-CO_2 oil as anti-angiogenic agent.

Biography

Hussein M Baharetha has completed his MSc from Universiti Sains Malaysia, Penang, Malaysia. He is a PhD student at Universiti Sains Malaysia, Penang, Malaysia, School of Pharmaceutical Sciences. He has experience in cancer treatment via anti-angiogenesis mechanism. He has published more 4 papers in reputed journals and more than 5 abstracts of international conferences. He has been working as a Lecturer at College of Medicine, Hadhramout University, Yemen.

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