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

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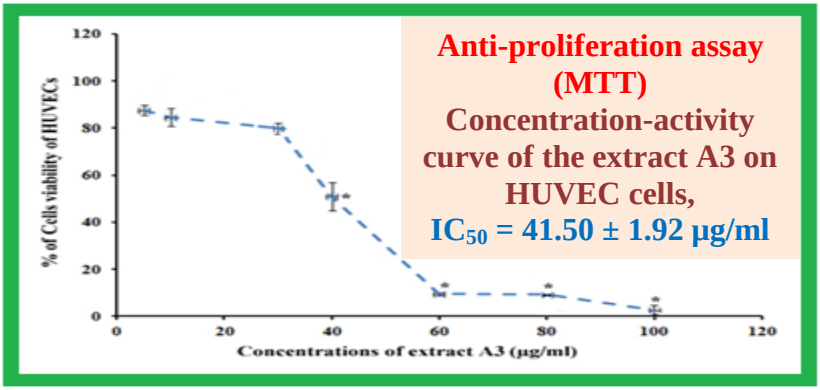
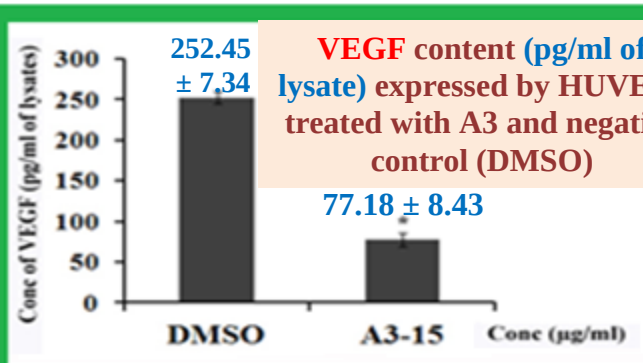
- **Purpose:** To investigate the antiangiogenic activity of a supercritical CO_2 extract of seeds of *Nigella sativa* Linn.
- **Methodology:** The extract (A3) was prepared at 60ºC and 2500 psi, then a panel of antiangiogenic assays were done including anti-proliferation on HUVEC cell line, VEGF expression and tube formation.
- **Framework:** Our previous study (Baharetha et. al, 2013) have revealed that the supercritical CO_2 of the *Nigella sativa* seeds has significant and cancer effects against breast cancer (MCF 7 cells). There are also many other studies have showed a potent antitumour effect of the extracted oil of N. sativa seeds using various methods of extraction (Salomi et al., 1991: Yi et al., 2008) and antioxidant activity (Ramadan et al., 2003).

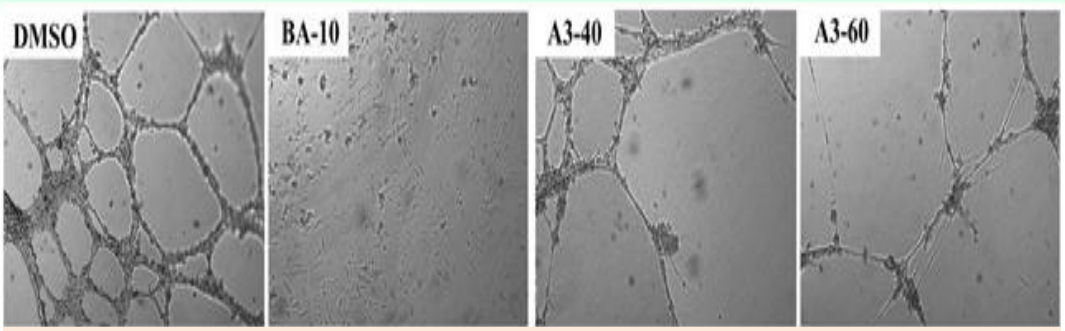
Results



Anti-proliferation assay (MTT)
Concentration-activity curve of the extract A3 on HUVEC cells,
IC_{50} = 41.50 ± 1.92 µg/ml



VEGF content (pg/ml of lysate) expressed by HUVECs treated with A3 and negative control (DMSO)



Tube formation assay of HUVECs treated with: A3: 40 and 60 µg/ml lead to 27.06 ± 2.78 and 48.29 ± 0.87% inhibition, respectively. Betulinic acid 10 µg/ml (BA-10) as a positive control leads to 100±0.02 % inhibition. And negative control (DMSO < 0.5%), magnification was 4x

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