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Evaluation of aqueous extract of *Nigella sativa* L. (Ranunculaceae) on sedation/hypnosis, locomotor activity, and spontaneous alternation in experimental models

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Background and Aims: Nigella sativa is a plant which is native in south and southwest of Asia. The characteristic constituents of this plant include thymoquinone, dithymoquinone, thymol, and thymohydroquinone. Different formulations including seeds of Nigella sativa have been used as emetics, anti-tussive, and analgesic in Iranian traditional medicine. In our preliminary study the aqueous extract of the seeds of Nigella sativa caused sedation and reduced locomotor activity. Therefore, we decided to evaluate the hypnotic/sedative effect of the extract in experimental models.
Methods: Male NMRI mice in the range of 22-35 g of weight were used in this study. Pentobarbital induced loss of righting reflex was used for evaluation of hypnotic effect of the extract. Open field test was used for assessment of locomotor activity. Y-maze spontaneous alternation test was used for evaluation of the extract on spatial working memory.
Results: The aqueous extract of the Nigella sativa in dose of 400mg/kg i.p. significantly reduced locomotor activity in open field test ($p<0.01$). The extract also showed significant hypnotic effect in pentobarbital induced loss of righting reflex test ($p<0.05$). The extract did not show any significant effect in Y-maze spontaneous alternation.
Conclusions: Our findings indicate that the aqueous extract of Nigella sativa seeds is sedative/hypnotic and can be a good condition for treatment of insomnia. Further studies are needed to find the exact mechanism of action of the extract and the active component(s).

Keywords: *Nigella sativa*; Sedative; Hypnotic; Righting reflex; Locomotor activity