Preliminary study on the effects of *Nigella sativa* (Habbatus sauda/Black Seed) and exposure of cigarette smoke on spatial memory of male adult rats

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Cigarette smoke contains various poisonous and carcinogenic chemical compounds which could be harmful to the body systems and overall health. Hazardous cigarette smoke also lowers the levels of antioxidant, which could eventually disrupt the process of eliminating free radicals in the body. Consuming antioxidant nutrients such as *Nigella sativa* (Habbatus sauda/Black Seed) could be the health strategies to prevent the oxidative damage of cells particularly in the brain regions related to memory functions. The purpose of the current study was to examine the effects NS and exposure of cigarette smoke on spatial memory performances (SMP) of male adult rats based on the behavioural model using eight arms radial maze. Eighteen male adult *Sprague Dawley* rats (5-6 weeks) were randomly assigned into four groups of treatments; G1: force fed with *Nigella sativa* (0.1 ml/100g body weight), G2: exposed to 60 minutes cigarette smoke, G3: injected with normal saline (0.1 ml/100g body weight) (control) and G4: force fed with corn oil (control), daily for a period of 6 consecutive weeks. During the weekly SMP assessment with baited and non-baited arms established in the eight arms radial maze, a one day food-deprived rat was placed in the maze center and allowed to explore the arms for food within 3 minutes. SMP assessment involved the reference and working memory components of the spatial memory. Trends observed are discussed in correlation with the effects of each treatment on the different components of the memory. Further related work is needed to substantiate the findings.

*Keywords: Nigella sativa; Cigarette smoke; Radial maze.*