

PP1. The influence of two Lamiaceae essential oils on dementia-related symptoms in animal models

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Dementia is a major problem for aging societies. Several essential oils (EOs) used for aromatherapy have been claimed to be effective for dementia-related behavioral problems, but there is insufficient scientific evidence to fully back up these claims. In order to gain further insight into the influence of plant EOs on dementia symptoms, we report on the results of experiments in relevant animal models with two Lamiaceae essential oils of known composition (*Thymus vulgaris* L. linalool chemotype, and *Rosmarinus officinalis* L.). In experiment 1 [1], the permeability of the blood brain barrier (BBB) by EO constituents of *T. vulgaris* was investigated in the state of brain dysfunction and stress. In experiment 2 [2], *R. officinalis* EO was assessed for its effects on Alzheimer's type dementia symptoms. During the course of experiment 1, inflammation-induced mice (intraperitoneally administered with polyinosinic:polycytidylic acid (poly I:C)) were exposed to thyme EO vapors to evaluate the relationship between the BBB permeability of linalool and terpinene-4-ol and stress. Whereas in experiment 2, Alzheimer's type dementia model mice (intraperitoneally administered with scopolamine) that inhaled rosemary EO were tracked for improvements of their cognitive function in a Y-maze test. The results of experiment 1 showed that stress increased the passage of inhaled thyme EO components through the BBB. Experiment 2 provided evidence that the inhaled rosemary EO improved mice cognitive function. One can expect that the results concerning the effect of rosemary EO on the cognitive function of experimental animals will accelerate future research on EOs that affect dementia.

References:

- [1] Satou, T. et al., 2018. Flavour Frag. J. 33, 191–195.
- [2] Satou, T. et al., 2018. Flavour Frag. J. 33, 230–234.

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