

Safety assessment of *Mentha mozaffarianii* essential oil: Acute and repeated toxicity studies

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Abstract

Methods

To assess the toxicity profile of the MMEO, we administered the essential oil to 48 rats and mice of both sexes by gavage in acute and repeated models. In acute toxicity, the animals were administered the MMEO (2000 mg/kg) and were monitored for 14 days. In the repeated toxicity, the MMEO was administered (100 mg/kg) daily for 4 weeks. On the 28th day, all the animals were scarified and blood and tissue samples were prepared. All the clinical, biochemical, and histopathological changes were assessed and compared with those in the controls.

Statistical significance was determined by one- and two-way analyses of variance, followed by the Tukey test using GraphPad Prism 6.

Results

In the acute test, there was no mortality; therefore, the oral LD50 value determined in the mice and rats of both sexes was greater than 2000 mg/kg. In the repeated test, the animals received the MMEO and there was no mortality. In the biochemical analysis, there were significant increases in blood glucose, cholesterol, ALT, AST, ALP, and TSH in the female rats and also in BUN in the male rats. The histopathological studies revealed evidence of microscopic lesions in the liver, kidney, stomach, and small intestine tissues of the MMEO group.

Conclusion

The results indicated that the acute toxicity of the MMEO in the mice and rats was of a low order and it revealed slight tissue damage to several organs when given subchronically at a dose of 100 mg/kg

Biograph :

Mentha mozaffarianii, an endemic species from the Labiatae family, is used in Iranian traditional medicine. This study evaluated the acute

and repeated oral toxicity of the *Mentha mozaffarianii* essential oil (MMEO) in rats and mice.