

**Spearmint: analgesic,
anti-inflammatory and
antipyretic**



**ASSIGN
BUSTER**

Review: Yousuf, P. (2013). Analgesic, Anti-Inflammatory and Antipyretic Effect of *Mentha spicata* (Spearment). *British Journal of Pharmaceutical Research*, 3 (4), 854-864. doi: 10. 9734/bjpr/2013/4640

Mentha spicata (Spearment) is often used as an alternative treatment for inflammation, fever, and pain relief. All of these problems can present symptoms such as cramps, headache, joint stiffness, and general aches and pains. Inflammation, pain and fever can all be treated with over the counter drugs such as ibuprofen and acetaminophen, but these drugs can often have severe side effects if used long term. Many essential oils have been used in aromatherapy and proven to be effective in treating pain relief, inflammation and fever. The purpose of this study was to evaluate the analgesic, anti-inflammatory and antipyretic effect of *Mentha spicata* (spearment).

The test subjects for this study were young Swiss-Albino mice about 4-5 weeks in age with an average weight of 25-30 gm and adult Albino rats with an average weight of 100-130 gm. The study was conducted at the animal house of the Department of Pharmacy, North Sough University, Bangladesh. Subjects were kept for one week in standard housing at 25 degrees Celsius in order to adapt before testing proceeded. Animals were also given standard food and water.

Separate tests and methods were given for each of the items being looked at: anti-inflammation, fever and pain. For the evaluation of anti-inflammatory effect, the method used was carrageenan induced rat paw edema. This method induces acute swelling when a solution of carrageenan in saline is injected into the hind footpad of the subjects. The rats were

randomly divided into four groups, each with five animals. Group I was the control group, and only given distilled water. Group II was given Ketorolac (10mg/kg) as standard, and Groups III and IV were given the test sample at a dose of 250 and 500 mg/kg body weight respectively. Thirty minutes after the oral administration of the test materials, 1% carrageenan was injected into the left hind paw of each animal. The amount of paw edema was measured at ½, 1, 2, 3, and 6 hours after administration. For the evaluation of antipyretic (fever) activity, Brewer's yeast-induced pyrexia was used. Wister albino rats were selected, weighed and divided into three groups of five animals each. All the test subjects were fasted 18 hours prior to experiment, but water was given. Fever was induced by injecting 20 ml/kg of 20% aqueous suspension of Brewer's yeast in saline below the nape of the neck. Rectal temperature was taken immediately before and 18 hours after injection. Prior to the experiment, the rats were maintained in separate cages for 7 days and the animals with approximately constant rectal temperature were selected for the study. Paracetamol (100 mg/kg) was used as standard drug for comparing the antipyretic action of extract. The extract at the doses of 500 mg/kg was administered intraperitoneally, one group was administered with paracetamol (100 mg/kg) control group was given 0.5 ml normal saline. The rectal temperature was measured at 1, 2 and 3 h after drug administration by using digital thermometer. Percentage reduction in rectal temperature was calculated by considering the total fall in temperature to normal level. Two methods of evaluation were used to test the analgesic effects. The first was a hot plate test. The temperature was regulated at $55^{\circ} \pm 1^{\circ}\text{C}$. Mice were divided into four groups consisting of five animals in each group. The mice of each group were placed in the beaker (on <https://assignbuster.com/spearmint-analgesic-anti-inflammatory-and-antipyretic/>

the hot plate) in order to obtain its response to electrical heat induced pain. Licking of the paws or jumping out of the beaker was taken as an indicator of the animal's response to heat-induced pain. The time for each mouse to lick its paws or jump out of the beaker was taken as reaction time (in seconds). Before treatment, the reaction time was taken once. Each of the test mice was treated with either distilled water (DW), Ketorolac (2.5 mg/kg of body weight) or methanol extract of *Mentha spicata* at the doses of 250 and 500 mg/kg body weight orally. Thirty minutes after treatment, the reaction time of each group of mice were again evaluated five times individually in one hour intervals. The second test administered was acetic acid induced writhing test. Writhing test is a chemical method used to induce pain by injecting acetic acid into the mice. The acetic acid was injected into the body cavity to create the pain sensation. Ketorolac (10 mg/kg) was used as a standard. The plant extract was administered orally in two different doses (250 and 500 mg/kg body weight) to the Swiss Albino mice after an overnight fast. Test samples and vehicle were administered orally 30 minutes prior to intraperitoneal administration of 0.7% v/v acetic acid solution at 10 ml/kg body weight. Animals were kept individually under glass jar for observation. Each mouse of all groups were observed individually for counting the number of writhing they made in 5 minutes beginning 5 minutes after the injection. The number of writhes in each treated group was compared to that of a control group (Distilled water).

The hot plate test produced significant analgesic effect when using the methanol extract of *Mentha spicata*. The extract significantly increased the reaction time of the mice when exposed to the heat. The writhing test

showed significant analgesic results as well and was comparable to that of the standard (66.66%). The Brewer's yeast proved positive effects of fever, and the carrageenan-induced paw edema proved that *Mentha spicata* is effective in treating inflammation.

The authors conclude that *Mentha spicata* proves to show significant analgesic, anti-inflammatory and antipyretic properties. They state that further investigation is necessary to find the active component of the extract in order to confirm the action in the development of a potent analgesic, anti-inflammatory and antipyretic agent.

This study is lacking in the amount of mice tested. I would like to see a more wide range of subjects tested as well. Although the number of mice tested is limited, the study is still of interest. First, all the results were in favor of the testing purposes. This is interesting because it means that the medicinal properties are probably correct and would therefore be a good alternative to treating such ailments. And second, most people will at some point or another in their life suffer from pain, inflammation or fever. This treatment would be a good alternative to medications that can have potential bad side effects and therefore reducing additional ailments and complications that need to be treated.

References

Yousuf, P. (2013). Analgesic, Anti-Inflammatory and Antipyretic Effect of *Mentha spicata* (Spearment). *British Journal of Pharmaceutical Research*, 3 (4), 854-864. doi: 10.9734/bjpr/2013/4640

<https://assignbuster.com/spearmint-analgesic-anti-inflammatory-and-antipyretic/>