

## Comparison of antinociceptive effects of morphine between male and female rats

Hosseini, M.<sup>a</sup>, Tairani, Z.<sup>b</sup>, Hajzadeh, M.A.-R.<sup>a</sup>, Salehabadi, S.<sup>b</sup>, Tehranipour, M.<sup>b</sup>

<sup>a</sup> Dept. of Physiology, School of Medicine, **Mashhad University of Medical Sciences, Mashhad, Iran**

<sup>b</sup> Dept. of Biology, Faculty of Science, **Azad University of Mashhad, Mashhad, Iran**

[View references \(↗\)](#)

### Abstract

The role of gonadal hormones on pain perception have been widely investigated. In the present study the differences of morphine - induced antinociception between male and female rats was investigated. Twenty rats were divided into two groups: 1) female 2) male. All animals were tested on the hot plate test ( $52 \pm 0.2$  °C; Cut-off 10 sec) for evaluating the antinociceptive effects of morphine. The hot plate test was performed as a base record 10 min before injection of morphine (10 mg/kg; s.c.) and consequently it was repeated every 10 minutes after injection of morphine. There were no significant differences in baseline latencies among two groups. Reaction time after injection of morphine in male group was higher than female group ( $P < 0.01$ ). It is concluded that sex hormones such as testosterone and estrogen have a role in pain perception and analgesia.

### Reaxys Database Information

### Author keywords

Antinociception; Female; Male; Morphine

### Indexed Keywords

**EMTREE drug terms:** estrogen; morphine sulfate; testosterone

**EMTREE medical terms:** analgesic activity; animal experiment; antinociception; article; comparative study; controlled study; female; hormone action; hot plate test; male; nociception; nonhuman; rat; response time; sex difference

**Chemicals and CAS Registry Numbers:** morphine sulfate, 23090-82-3, 30764-00-7, 74-31-3; testosterone, 08-22-0

**Manufacturers:Drug manufacturer:** Temad, Iran.

**ISSN:** 1827862 • **Source Type:** Journal **Original language:** English

**Document Type:** Article