

Title : Antinociceptive effect of flavonol and a few structurally related dimethoxy flavonols in mice

Abstract

Previous reports suggest flavonoids as potent analgesic compounds. Based on these observations, the present study investigated the antinociceptive action of flavonol, 3', 4'-dimethoxy flavonol, 6, 3'-dimethoxy flavonol, 7, 2'-dimethoxy flavonol, and 7, 3'-dimethoxy flavonol and the possible mechanisms involved in these effects. The antinociceptive effect of the investigated compounds in doses of 25, 50, 100, and 200 mg/kg was evaluated in male Swiss albino mice using the acetic acid test, formalin-induced nociception, and hot water tail immersion test. The role of opioid, tryptaminergic, adrenergic, dopaminergic, GABAergic, and K⁺ATP channels in producing the antinociceptive effect was also studied using appropriate interacting agents. Treatment with flavonol and dimethoxy flavonols resulted in a significant reduction in the number of abdominal constrictions in the acetic acid test, a significant inhibition of the paw-licking/biting response time in both the phases of formalin nociception and also a significant increase in mean reaction time in the hot water tail immersion test. These observations revealed the antinociceptive effect of dimethoxy flavonols. The role of opioid, serotonergic (5HT₃), and dopaminergic system was identified in the antinociceptive effect of flavonol and all dimethoxy derivatives investigated. In addition, the role of GABAergic, K⁺ATP channel, and α -2 adrenergic mechanisms were also observed in the antinociceptive action of some of the investigated compounds. The present study identified the antinociceptive effect of flavonol and dimethoxy flavonols in mice acting through different neuronal pathways.

Keywords Flavonol derivatives· Antinociception· Neuronal mechanisms· Opioid· Serotonergic· Dopaminergic· GABAergic· Adrenergic

For more details :

https://www.researchgate.net/publication/331626336_Antinociceptive_effect_of_flavonol_and_a_few_structurally_related_dimethoxy_flavonols_in_mice