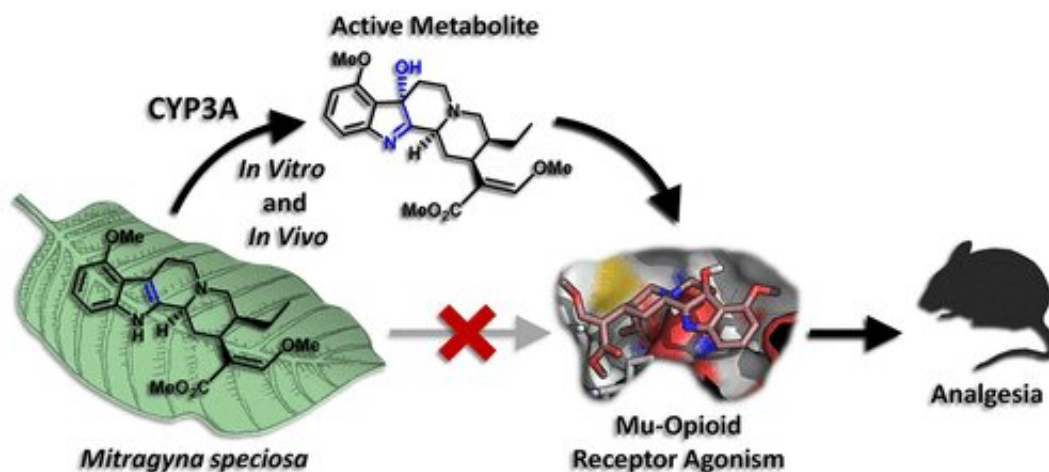


# Kratom's reputed pain-relief benefits could come from one of its metabolites

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Credit: American Chemical Society

Kratom is a Southeast Asian tree with a long history of use in traditional medicine. In the region, the plant's leaves are widely consumed for pain relief, treatment of opioid addiction and other uses. Though its efficacy and safety are unproven, kratom use has spread to the U.S. and Europe. Now, researchers report in *ACS Central Science* that a metabolite of a kratom alkaloid could be responsible for the treatment's therapeutic effects.

Currently, kratom is legal and available in the U.S. as a gray-market product, but it has an uncertain regulatory future. In the meantime, scientists are investigating the substance's [physiological effects](#). Some

prior research attributed these effects to mitragynine, the major active alkaloid in kratom, and its binding to an opioid receptor. However, 7-hydroxymitragynine (7-OH), another alkaloid present in the leaf at far lower concentrations, also interacts with that receptor. To clear up the matter, Jonathan A. Javitch, Susruta Majumdar, Dalibor Sames and colleagues set out to probe the pharmacological and metabolic mechanisms behind kratom's [analgesic effects](#).

Through studies in cells and mice, the researchers showed that most of the analgesic effect is from 7-OH rather than mitragynine. They also found that metabolism of mitragynine in mouse and human liver preparations actually produces much more 7-OH than is present naturally in kratom. The team says that the results shed light on some of the seemingly contradictory reports on kratom, but more studies are still needed to see whether their findings in mice extend to humans.

**More information:** Andrew C. Kruegel et al. 7-Hydroxymitragynine Is an Active Metabolite of Mitragynine and a Key Mediator of Its Analgesic Effects, *ACS Central Science* (2019). [DOI: 10.1021/acscentsci.9b00141](#)

Provided by American Chemical Society

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