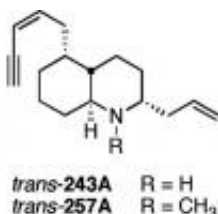


A newly discovered chemical weapon in poison frogs' arsenal

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Scientists have discovered new toxins Amazonian poison frogs use as a chemical defense from predators. Credit: The American Chemical Society

New research documents a surprising chemical weapon used by some Amazonian poison frogs. The study identified for the first time a family of poisons never before known to exist in these brightly colored creatures or elsewhere in Nature, the N-methyldecahydroquinolines. The authors then speculated on its origin in the frogs' diet, most likely ants. The report is scheduled for the June 26 issue of ACS' *Journal of Natural Products*.

H. Martin Garraffo and colleagues note there are more than 500 [alkaloids](#), potentially toxic substances, known to exist in the skin of poison [frogs](#) of the family Dendrobatidae. Frogs use them as a chemical defense to discourage predators from biting and eating them. Western Colombian natives have used skin extracts from another group of frogs, unrelated to those in the new study, to coat blow-darts for hunting.

Frogs get nearly all of the alkaloids from their diet, removing alkaloids from ants, mites, small [beetles](#), millipedes and possibly other small arthropods, concentrating them with incredible efficiency, and storing them in their skin. However, Garraffo's group was not certain about the origin of the newly discovered N-methyldecahydroquinolines, which could also be produced in the frogs' own bodies. Feeding experiments with alkaloids fed to captive frogs are planned, which might settle this point.

The scientists analyzed alkaloids from the skin of 13 of the more than 25 species of the genus *Ameerega* of poison frogs. They identified the new toxins in the frogs as being of the N-methyldecahydroquinoline class, which were present among several other alkaloids.

More information: *Journal of Natural Products*, Journal Article: "N-Methyldecahydroquinolines: An Unexpected Class of Alkaloids from Amazonian Poison Frogs (Dendrobatidae)"

Provided by American Chemical Society ([news](#) : [web](#))

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