

Researchers create synthetic version of scarce compound found in poppies

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Chemists have created a synthetic version of a rare extract from poppy plants.
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Chemists at Rice University, partially funded by the U.S. National Science Foundation, have developed a synthetic version of a rare molecule extracted from poppies called setigerumine I. The molecule could become a component used in painkillers and other drugs.

The chemists used a three-step, room temperature process to oxidize and rearrange a [precursor molecule](#) called noscapine. The process produced enough setigerumine I to be a proof of concept for the synthesis.

"Because this molecule is isolated from poppies that also produce morphine, the likelihood that it has desirable biological properties is pretty significant," [chemist](#) Juha Siitonen said. "We've been facing an opioid crisis for years, so we clearly need better painkillers that are non-addictive. We don't know if this is the one, but it might prove practical."

Siitonen noted the [process](#) taught the researchers about how poppies produce setigerumine I. "We also managed to indirectly prove how this thing actually comes about in nature, which has a lot of implications," he said.

"That includes the fact that it might not be the only natural product that belongs to this family. There might be plenty of these types of [molecules](#) in nature with the same structural motif that we just haven't stumbled across yet."

Natural setigerumine is a rare alkaloid molecule that is hard to isolate and difficult to study as a possible precursor for drugs or other products. The ability to synthesize setigerumine will have wide implications for the pharmaceutical industry.

Provided by National Science Foundation

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