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New target for anti-inflammatory agents

Study shows that caspases are secondary targets for nonsteroidal anti-inflammatory drugs

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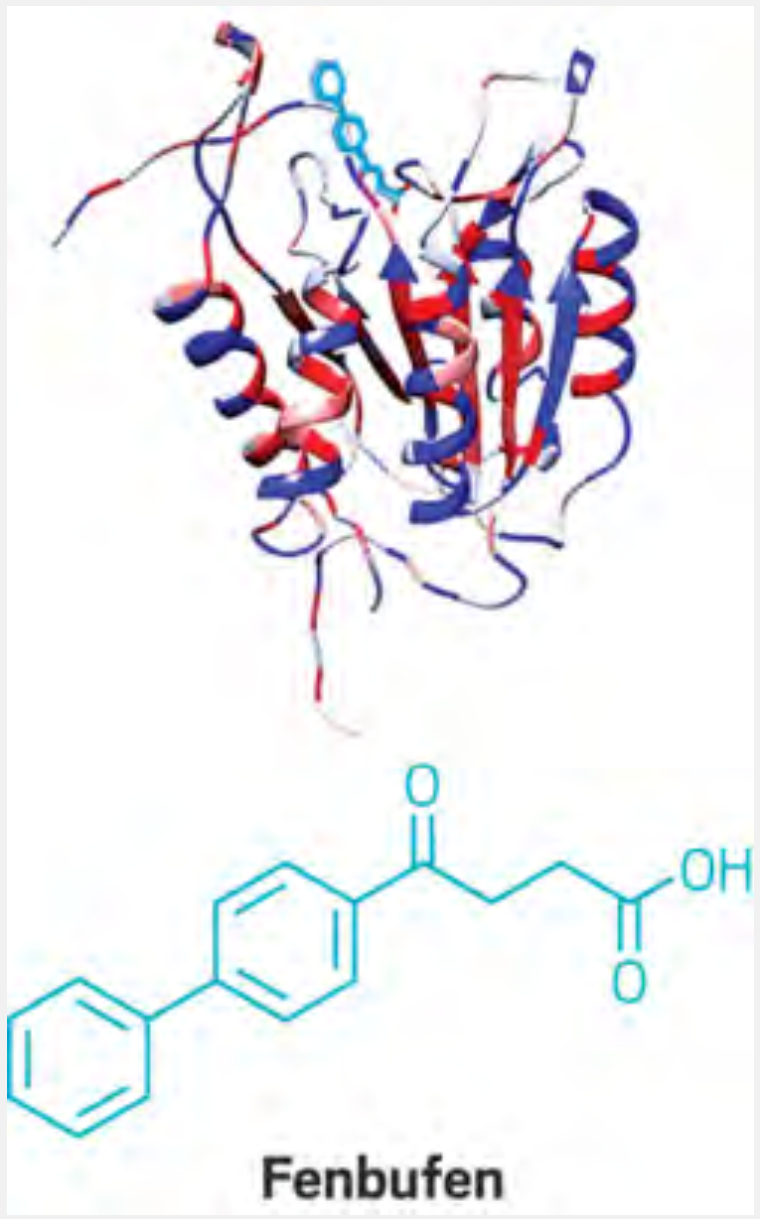
Researchers have discovered that caspases, enzymes that promote inflammation and cell death, are secondary targets for some nonsteroidal anti-inflammatory drugs (NSAIDs) (*CellChem. Biol.* 2017, DOI: **10.1016/j.chembiol.2017.02.003**



Computational model of the NSAID fenbufen (green) bound to the active site of caspase-3.
Credit: *Cell Chem. Biol.*

<http://dx.doi.org/10.1016/j.chembiol.2017.02.003>). NSAIDs such as Advil and aspirin are primarily cyclooxygenase inhibitors but hit other targets as well, causing side effects such as stomach pain, heartburn, and bleeding. The addition of caspases to the list of NSAID targets could aid understanding of the drugs' anti-inflammatory effects and help lead to the

design of new agents with reduced side effects. Hang Hubert Yin and coworkers at the University of Colorado, Boulder, studied NSAID targeting in cells exposed to inflammatory stimuli that boost caspase production. Such conditions have not been widely used before in NSAID studies, the researchers say, even though patients with inflammatory conditions often take NSAIDs. Yin's group shows that under inflammatory conditions, some NSAIDs bind to a common caspase active-site motif and therefore inhibit several types of caspases. "We are currently working on novel, selective caspase inhibitors, hoping to develop the next generation of anti-inflammation drugs," Yin says.

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