

## Compound responsible for chilis' heat may help kill prostate cancer cells

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Capsaicin, the compound responsible for chilis' heat, is used in creams sold to relieve pain, and recent research shows that in high doses, it kills prostate cancer cells. Now researchers are finding clues that help explain how the substance works. Their conclusions suggest that one day it could come in a new, therapeutic form. Their study appears in ACS' *The Journal of Physical Chemistry B*.

About 10 years ago, researchers reported that capsaicin can kill prostate cancer cells in mice while leaving healthy cells unharmed. But translating that dose to humans would require them to eat a huge number of chili peppers per day. Figuring out how capsaicin works could help researchers transform it into an effective drug in the form of an injection or pill.

Researchers have figured out that the molecule binds to a cell's surface and affects the membrane, which surrounds and protects the cell. That finding prompted Ashok Kumar Mishra and Jitendriya Swain to try to gain a deeper understanding of capsaicin's effects so it might be harnessed in the future for new medicines.

The scientists were able to detect how the compound interacts with cell membranes by monitoring its natural fluorescence. The study showed that capsaicin lodges in the membranes near the surface. Add enough of it, and the capsaicin essentially causes the membranes to come apart. With additional research, this insight could help lead to novel tools against cancer or other conditions.

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Source:

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