

Mysteries of garlic are revealed

August 16 2005

University of California scientists have determined garlic's active ingredients work the same in the same way as the chemicals in chili peppers and wasabi.

Researchers at the University of California-San Francisco's Department of Cellular and Molecular Pharmacology said garlic's pungent aroma and its effects on the body, such as dilating blood vessels, are due to a variety of sulfur-based chemicals, especially allicin.

Little is known about how those compounds produce their effects on a molecular level, but researchers David Julius and colleagues demonstrated garlic extracts, as well as purified allicin, excite a subset of sensory pain neurons from rats by activating a cell membrane channel called TRPA1. The excited neurons then release brain chemicals stimulating blood vessel dilation and inflammation in rats.

Interestingly, the scientists said, both capsaicin -- found in chili peppers -- and allyl isothiocyanate -- found in mustard plants -- also activate the TRP channel pathway, suggesting the different plant species have developed convergent strategies of chemical irritation.

The study appears in this week's online early edition of the Proceedings of the National Academy of Sciences.

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Citation: Mysteries of garlic are revealed (2005, August 16) retrieved 25 April 2024 from <https://phys.org/news/2005-08-mysteries-garlic-revealed.html>

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