

# First preliminary profile of proteins in bed bugs' saliva

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The saliva of bed bugs contains unique substances that could lead to vaccines to prevent allergic responses to the bugs' bite. Credit: Wikimedia Commons

With bed bugs reemerging as a nuisance in some parts of the country, scientists are reporting the first preliminary description of the bug's sialome — the saliva proteins that are the secret to *Cimex lectularius*' ability to suck blood from its human victims and escape to bite again with risking a lethal slap. The findings, which could have medical applications in diagnosing bed bug bites and preventing the itch, appear in ACS' *Journal of Proteome Research*.

In the report, Jose Ribeiro and colleagues point out that bed bugs have made reappearances in New York City, London, and other areas, sparking increased scientific interest in the allergic responses associated

with their bites. Bed bugs belong to a group of insects that feed on blood throughout their lives and have been doing so successfully for at least 250 million years. That success depends in large part on proteins in their saliva, substances that make the victim's [blood vessels](#) dilate (for a better flow of blood), inhibit clotting, and prevent immediate pain and itching that might evoke a lethal slap.

Using adult bed bugs from a government-maintained colony, the scientists removed salivary glands from male and female bugs, and analyzed the proteins to find unique enzymes that characterize the [saliva](#) profile of the bug. The substances could also offer insight into how [insects](#) evolved to a blood diet. "Independent of their function, these proteins may also be used for immune detection of humans and animals to bed bug exposure, or as part of desensitization vaccines," the report says.

**More information:** "Insight into the Sialome of the Bed Bug, *Cimex lectularius*", *Journal of Proteome Research*.

Provided by American Chemical Society

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