

# 'Magic potion' in fly spit may shoo away blinding eye disease

April 6 2009

---



Scientists have found proteins in the black fly's saliva that help spread parasites that cause a devastating eye disease. Credit: US Department of Agriculture, The Diptera Site

Researchers are reporting the first identification of a "magic potion" of proteins in the saliva of the black fly that help this blood-sucking pest spread parasites that cause "river blindness," a devastating eye-disease. A better understanding of these proteins may lead to better drugs and a vaccine for river blindness and other diseases spread by biting insects. Also known as onchocerciasis, river blindness affects more than 17 million people worldwide, particularly in rural Africa. The report appears in the current edition of *ACS' Journal of Proteome Research*.

In the new study, José M.C. Ribeiro and colleagues explain that the [saliva](#) of adult female black flies contains substances that mute the

human body's natural defenses. This chemical cocktail makes the body more vulnerable to disease when infected flies bite into the skin. Until now, however, nobody had identified the specific chemicals involved in this devious action.

The scientists collected salivary glands from hundreds of adult female black flies and isolated the proteins using high-tech analytical gear. They identified 72 different proteins, including several new to science. These proteins could serve as the basis for developing drugs or vaccines against diseases transmitted by the black fly and other blood-sucking insects, including mosquitoes, midges, and sand flies, the researchers say. - MTS

More information: "Insight into the Sialome of the Black Fly, *Simulium vittatum*, *Journal of Proteome Research*.

Provided by American Chemical Society ([news](#) : [web](#))

Citation: 'Magic potion' in fly spit may shoo away blinding eye disease (2009, April 6) retrieved 20 March 2024 from <https://phys.org/news/2009-04-magic-potion-shoo-eye-disease.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--