

NEWS RELEASE



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Evolva's nootkatone enters NIH-sponsored studies to assess its effectiveness against mosquitoes that transmit Zika virus

25 July 2016 – Evolva (SIX: EVE) announces that the US National Institute of Allergy and Infectious Diseases (NIAID), part of the National Institutes of Health (NIH), will sponsor studies to test Evolva's nootkatone against mosquitoes infected with Zika virus. The study will evaluate nootkatone in multiple formulations against wild type and insecticide-resistant mosquitoes that carry the virus.

Zika is one of a number of mosquito-borne viruses, which include both dengue and chikungunya, that are transmitted by *Aedes aegypti* and *Aedes albopictus* mosquitoes. The World Health Organisation and the US Centers for Disease Control and Prevention (CDC) have declared the Zika virus a public health emergency. Zika is associated with potentially severe neuropathogenic and neurodevelopmental conditions in humans.

Studies will be conducted at Colorado State University (CSU) in Fort Collins, Colorado, under NIAID's preclinical services program. CSU researchers will test both the repellency and insecticidal properties of nootkatone against mosquitoes infected with the Zika virus. Data from these studies will supplement Evolva's ongoing research to fulfil the US Environmental Protection Agency's requirements for the commercial launch of nootkatone.

This NIH-sponsored research represents the latest expansion of Evolva's nootkatone work with the US government, which began as a collaboration with the CDC. Evolva and the CDC initially examined nootkatone's effectiveness for tick control as a novel approach to reduce the spread of tick-borne diseases such as Lyme disease. In late February 2016, Evolva's nootkatone collaboration with the CDC expanded to include an additional focus on mosquitoes, including those that transmit Zika, chikungunya, dengue and West Nile viruses.

CDC research has already shown that nootkatone both repels and kills *Aedes aegypti*, the mosquito that transmits Zika and yellow fever, and the black-legged tick, *Ixodes scapularis* which transmits Lyme disease. Nootkatone appears to have a mode of action distinct from that of currently used pesticides, and therefore, could potentially be valuable for mitigating pesticide resistance in mosquito vectors.

The NIH will sponsor CSU's studies directly, and as such there will not be any near term impact on Evolva's costs or revenues.

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About Evolva

Evolva is a pioneer and global leader in sustainable, fermentation-based approaches to ingredients for health, wellness and nutrition. Evolva's products include stevia, resveratrol, vanillin, nootkatone and saffron. As well as developing its own proprietary ingredients, Evolva also deploys its technology for partners, providing them with a competitive edge and sharing in the returns they make. For more information see www.evolva.com. Questions about our fermentation approach? Have a look at our [video](#).

About nootkatone

[Nootkatone](#) is a citrus ingredient that is characteristically associated with grapefruit. It can be extracted in minute quantities from the skin of grapefruit or the bark of the Alaska yellow cedar (*Nootka cypress*), or produced on an industrial scale from brewing via yeast fermentation. Nootkatone is being tested against a variety of biting and nuisance pests, notably the ticks that are responsible for spreading Lyme disease, but also the mosquitoes contributing to the spread of Zika, chikungunya, dengue and West Nile viruses, as well as head lice, bed bugs and other biting insects.

About Lyme disease and Zika virus

[Lyme disease](#) is caused by *Borrelia burgdorferi* and is transmitted to humans through the bite of infected blacklegged ticks. Typical symptoms include fever, headache, fatigue and a characteristic skin rash called erythema migrans. If left untreated, infection can spread to joints, the heart and the nervous system.

[Zika virus](#) is transmitted to humans primarily through the bite of an infected *Aedes* species mosquito. The most common symptoms of Zika are fever, rash, joint pain and conjunctivitis (red eyes). Because the symptoms of Zika are similar to those of many other diseases, many cases may not have been recognized. In May 2015, the Pan American Health Organization (PAHO) issued an alert regarding the first confirmed Zika virus infection in Brazil and on February 1, 2016, the World Health Organization (WHO) declared Zika a public health emergency of international concern (PHEIC). Local transmission has been reported in many other countries and territories. Zika likely will continue to spread to new areas.

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