

Researchers identify new compounds to treat RSV, Zika virus

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A new and promising class of chemical compounds has major potential for treating Zika virus and respiratory syncytial virus, or RSV, according to a new study by University of Alberta scientists. The next step is to develop a drug.

"This is both a remarkable scientific discovery and also something that has the potential to positively affect not only global health but also the economy of Canada," said Fred West, professor in the Department of Chemistry who led the new discovery along with David Marchant in the Department of Medical Microbiology and Immunology. The compound is similar to the naturally occurring isatisine A, an antiviral compound originally found in traditional Chinese herbal medicine.

Working in conjunction with Tom Hobman in the Faculty of Medicine & Dentistry, West and Marchant developed and then tested this chemical compound against powerful viruses, including RSV and Zika virus. The results were promising, showing that the [chemical compound](#) was active and effective against both viral infections.

Hobman is a professor of cell biology and an expert in the Zika virus, a pathogen that can cause serious prenatal defects in pregnant women that has been on the public radar since a major outbreak in May 2015.

Marchant is a professor of medical microbiology and an expert in RSV, which poses the biggest risk to infants, the elderly, and the immunocompromised. The [virus](#) can be responsible for more than 30 per cent of all hospitalized respiratory cases in any given year.

The next step of drug development is already underway. "What we aim to do is further refine this compound, to keep the elements that make it medically active and build in the structural components that make it possible for patients to consume in drug form," explained West. "We are approaching that point."

The paper, "Dual Catalytic Synthesis of Antiviral Compounds Based on Metallocarbene–Azide Cascade Chemistry," was published in the *Journal of Organic Chemistry*.

More information: Bren Jordan P. Atienza et al, Dual Catalytic Synthesis of Antiviral Compounds Based on Metallocarbene–Azide Cascade Chemistry, *The Journal of Organic Chemistry* (2018). [DOI: 10.1021/acs.joc.8b00222](https://doi.org/10.1021/acs.joc.8b00222)

Provided by University of Alberta

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