

Back with a vengeance: Compound offers new hope for treatment of painful adult shingles

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Medicinal chemist Chung (David) Chu, Distinguished Research Professor of Pharmaceutical and Biomedical Sciences at the University of Georgia Credit: University of Georgia

Researchers at the University of Georgia and Yale University have discovered a compound with the potential to be more effective than existing agents in treating the very painful blisters known as shingles -- a condition that affects up to 30 percent of Americans, mostly elderly, and

for which no specific treatment exists.

Most adults remember the [fever](#), itchy blisters and possibly tiny scars they experienced as children when they had [chickenpox](#), which is caused by the varicella-zoster virus, or VZV. Unfortunately, that [memory](#) can come back—with a vengeance—when they are older. The VZV virus from childhood chickenpox hides in the nerves, emerging most frequently in adults over the age of 60 as a blistering rash on one side of the body. The rate of complications, including nerve pain that can persist for months or years after the [shingles](#) attack is gone, also increases with age.

The novel and effective anti-shingles agent called L-BHDA may change that. Rights to the shingles treatment have been licensed to Bukwang Pharmaceutical Company for preclinical investigations by the University of Georgia Research Foundation, Inc. and Yale University.

"We need new options for medications with increased potency and specificity that can treat VZV, including strains that may be resistant to existing drugs," said medicinal chemist Chung (David) Chu, Distinguished Research Professor of Pharmaceutical and Biomedical Sciences at UGA, one of the inventors of L-BHDA.

A collaboration between Chu and co-inventor Yung-Chi (Tommy) Cheng, the Henry Bronson Professor of Pharmacology at Yale, has resulted in an extensive portfolio of antiviral compounds that target such diseases as HIV, shingles, hepatitis and cancers.

Chu, who is head of the Drug Discovery Group in the UGA College of Pharmacy, said that although there are generic antiviral drugs to reduce the duration and pain of shingles, and a variety of pain medications and topical creams to relieve long-term pain, "They are only moderately effective. We need more effective anti-VZV agents.

"L-BHDA has the potential to be more effective than existing agents," said Chu. He noted that the new compound has been tested in the laboratory and demonstrated in mice models by a group of researchers headed by Jennifer Moffat, associate professor of microbiology and immunology, State University of New York Upstate Medical University.

A vaccine to prevent shingles, available to older adults since 2006, can cut the likelihood of a shingles attack in half. However, according to a recent study in the American Journal of Preventive Medicine, only a small percentage of older people receive the shot, principally because of cost, lack of insurance reimbursement and shortage of supply.

It is likely that immunization against chickenpox during childhood also protects against shingles, because the vaccine uses a weakened strain of the virus. However, the vaccine was only introduced in 1995, and there are not enough data to provide a definitive answer.

"Dr. Chu and Dr. Cheng have been working diligently to fill a much needed gap in the treatment options for such a prevalent disease," said Rachael Widener, UGARF technology licensing manager. "Before the chicken pox vaccine became widely used in the mid-1990s, older, unvaccinated individuals would have their immunity boosted naturally.

"Now, with less exposure to chicken pox, shingles is becoming more prevalent," said Widener. "This, combined with the aging baby boomer population, underscores the need for more directed treatment. We are hopeful that L-BHDA will allow patients to get well sooner and feel less pain, and will lessen their chances of complications."

Provided by University of Georgia

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