

McMaster vaccine has pet owners feline groovy

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Good-bye itching, watering eyes and sneezing. McMaster University researchers have developed a vaccine which successfully treats people with an allergy to cats.

Traditionally, frequent [allergy](#) shots have been considered the most effective way to bring relief – other than getting rid of the family pet -- for the eight to 10% of the population allergic to [cats](#).

Both options – one difficult and costly, the other troubling - may now be tossed aside thanks to the work of immunologist Mark Larché, professor in the Department of Medicine in the Michael G. DeGroot School of Medicine and Canada Research Chair in Allergy & Immune Tolerance.

Building on research he's conducted for the past 10 years in Canada and Britain, Larché and his research team have developed a [vaccine](#) which is effective and safe with almost no side effects. The research is published in a recent (January 2011) issue of the *Journal of Allergy & Clinical Immunology*, a leading journal in the allergy field.

The researchers took one protein (molecule) that cats secrete on their fur which causes the majority of allergic problems. Using blood samples from 100 patient volunteers allergic to cats, they deconstructed the molecule and identified short regions within the protein which activate T-cells (helper cells that fight infection) in the immune system.

Using the amino acid code for the whole protein, researchers made

synthetic versions of these regions. For the cat allergy vaccine, they found seven peptides (strings of amino acids). "And those synthetic peptides are what we mix together to make the vaccine," said Larché. "We picked the peptides that would work in as much of the population as possible."

Known as "peptide immunotherapy", a low dose of the vaccine is given into the skin. Initially, four to eight doses a year may be required, but the side effects of the traditional allergy shots do not arise, Larché said. The optimal dose will be determined in phase three clinical trials which are getting underway with a much larger group of cat allergy sufferers.

The development of a vaccine to treat people allergic to cats is the first in a line of vaccines developed with Adiga Life Sciences, a company established at McMaster in 2008. It is a joint venture between McMaster University and Circassia Ltd., a UK-based biotech company.

Adiga and McMaster are now collaborating on research into the use of peptide immunotherapy for house dust mite, ragweed, grass, birch tree and moulds.

Provided by McMaster University

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