

# Researchers working on vaccine for acne

September 26 2011, by Deborah Braconnier

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(Medical Xpress) -- With 85 percent of teenagers and some 40 million Americans suffering with acne, researchers from the University of California and the vaccine company Sanofi-Pasteur announced they are coming together to develop a vaccine and treatment for acne.

Acne is caused when oil-producing sebaceous glands are clogged and the natural bacteria fight to break out. The body senses bacteria and triggers the [immune system](#) which causes inflammation and creates the pimple. Current treatments include benzoyl peroxide and [antibiotics](#) that are designed to kill the [bacterium](#). The only problem with this is that they also kill off normal bacteria and can result in [antibiotic resistance](#) strains of the bacteria responsible for causing [acne](#), *Propionibacterium acnes*.

When it comes to acne research, a major obstacle researcher's face is animal subjects to work with. Mice do not get acne. Chun-Ming Huang and his team found a way around this by injecting the bacteria *P. acnes* into the skin of a mouse's ear which caused a similar inflammation. In 2008, the team reported that a nasal spray vaccine containing dead *P. acnes* showed a reduction in the inflammation.

The only problem with something that targets and kills bacteria is that normal bacteria, or flora, are necessary for skin health. To work around this, the team of researchers looked at targeting the protein CAMP. CAMP is used by bacteria to kill the host cells. The team isolated a CAMP gene in *P. acnes* which was coded for a protein that kills cells in the sebaceous glands and causes inflammation.

Antibodies to CAMP were added to a colony of *P. acnes* and the antibodies bound to the CAMP in the bacteria, preventing the effects. When given to the mice, there was much less inflammation present than the mice with the unchanged *P. acnes*.

The idea of this new vaccine is to disrupt the [inflammation](#) caused by the *P. acnes* protein while leaving the normal flora required for healthy skin intact. One possible delivery method the researchers are looking at is the use of micro-needles to deliver monoclonal antibodies to CAMP directly into the skin of patients with acne.

**More information:** [Press release](#)

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