

## National Jewish Health Receives Patent for Liposome-Based Vaccine

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DENVER — National Jewish Health has received a US patent for a new kind of vaccine, which uses a small lipid bubble to deliver an antigen and DNA adjuvant. Chairman of Pediatrics Erwin Gelfand, MD, and former National Jewish Health Professor of Medicine Steve Dow, PhD, developed the new liposome-based adjuvant.

Live vaccines, containing weakened forms of an infectious organism, generally work fine by themselves. But vaccines containing dead organisms or pieces of the infectious organisms or their toxins generally need adjuvants to boost their effectiveness. Aluminum salts, known as alum, are the most common adjuvant used in the United States for routine preventive vaccines.

The recently patented invention by Drs. Gelfand and Dow describes a vaccine contained within a liposome, a tiny vesicle made of a double layer of lipids. Contained within the liposome is a DNA sequence that serves as an adjuvant. Depending on the sequence, either the DNA molecule itself or the protein for which it codes can be used to stimulate the immune system. This DNA molecule is fused to an immunogen, the protein fragment against which the immune mounts a specific attack. The protein fragment could be part of an infectious organism or possibly some other health hazard such as a cancer tumor. The liposome-based vaccine could be delivered either subcutaneously through injection or orally.

The patent, [#7741300](#) is currently licensed to a US biotechnology company for commercial development.

**National Jewish Health** is the leading respiratory hospital in the nation. Founded 125 years ago as a nonprofit hospital, National Jewish Health today is the only facility in the world dedicated exclusively to groundbreaking medical research and treatment of children and adults with respiratory, cardiac, immune and related disorders. Patients and families come to National Jewish Health from around the world to receive cutting-edge, comprehensive, coordinated care. To learn more, visit the [media resources](#) page.

### Media Resources

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We have many faculty members, from bench scientists to clinicians, who can speak on almost any aspect of respiratory, immune, cardiac and gastrointestinal disease as well as lung cancer and basic immunology.

- [Accomplishments & Awards](#)
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### Media Contacts

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Our team is available to arrange interviews, discuss events and story ideas.

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