



DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

Government-Owned Inventions; Availability for Licensing

AGENCY: National Institutes of Health, HHS.

ACTION: Notice.

SUMMARY: The invention listed below is owned by an agency of the U.S. Government and is available for licensing to achieve expeditious commercialization of results of federally funded research and development. Foreign patent applications are filed on selected inventions to extend market coverage for companies and may also be available for licensing.

FOR FURTHER INFORMATION CONTACT: Terrence Joyce at 240-987-2347, or terrence.joyce@nih.gov. Licensing information may be obtained by communicating with the Technology Transfer and Intellectual Property Office, National Institute of Allergy and Infectious Diseases, 5601 Fishers Lane, Rockville, MD 20852: tel. 301-496-2644. A signed Confidential Disclosure Agreement will be required to receive copies of unpublished information related to the invention.

SUPPLEMENTARY INFORMATION: Technology description follows:

***Francisella* Lipids as Broad Anti-inflammatory Therapeutics**

Description of Technology:

Anti-inflammatory treatments, particularly those used in the context of viral infection, have been shown to greatly inhibit the overall immune response, which can result in poor immunity and failure to control or clear the infection. Novel alternatives that can effectively attenuate inflammation without the more serious side effects of steroid medications (e.g., global immune suppression, muscle weakness, etc.) may have substantial use across a wide range of disease areas.

Francisella tularensis (FT), the causative agent of tularemia, exhibits a potent ability to induce rapid suppression of inflammatory responses in host cells. Building on prior work that demonstrated the ability of crude and enriched lipids from virulent FT strains to dampen inflammation triggered by a variety of sources, researchers at the National Institute of Allergy and Infectious Disease (NIAID) have developed FT lipid preparations with strong potential for the prophylactic/therapeutic treatment of viral-mediated inflammation—without deleterious effects on the development of anti-viral immunity.

The NIAID data further show that these FT lipid preparations are relatively non-toxic to cells, do not adversely affect the functioning of T cells, and act in part by inhibiting production of inflammatory mediators, highlighting other potential therapeutic targets such as allergic and autoimmune-associated inflammation.

This technology is available for licensing for commercial development in accordance with 35 U.S.C. 209 and 37 CFR part 404.

Potential Commercial Applications:

- Well-tolerated, short-term prophylactic or therapeutic treatment of inflammation across multiple disease areas (viral infection, autoimmunity, etc.)

Competitive Advantages:

- Potential alternative that can overcome compromises to immunity and other side effects associated with traditional anti-inflammatory treatment

Development Stage: Preclinical

Relevant Publications:

- Crane DD, et al. Lipids derived from virulent *Francisella tularensis* broadly inhibit pulmonary inflammation via toll-like receptor 2 and peroxisome proliferator-activated receptor α . *Clin Vaccine Immunol.* 2013;20(10):1531–1540.

- Ireland R, et al. Francisella tularensis SchuS4 and SchuS4 lipids inhibit IL-12p40 in primary human dendritic cells by inhibition of IRF1 and IRF8. *J Immunol.* 2013;191(3):1276–1286.

Inventors: Catherine Bosio, Glenn Nardone, Robin Ireland (all of NIAID)

Intellectual Property: HHS Reference No. E-142-2016; Provisional Patent Application 62/319,692, filed on April 7, 2016; 16,091,768, filed on October 5, 2018, issued December 20, 2022; PCT Application No. PCT/US2017/026467, filed on April 6, 2017; European Patent App. No 17721893.0, filed on April 6, 2017.

Licensing Contact: To license this technology, please contact Terrence Joyce at 240-987-2347 or terrence.joyce@nih.gov, and reference E-142-2016.

Collaborative Research Opportunity: The National Institute of Allergy and Infectious Diseases is seeking statements of capability or interest from parties interested in collaborative research to further develop, evaluate, or commercialize this technology. For collaboration opportunities, please contact Terrence Joyce at 240-987-2347 or terrence.joyce@nih.gov, and reference E-142-2016.

Dated: June 9, 2025

Surekha Vathyam,

Director,

Technology Transfer and Intellectual Property Office,

National Institute of Allergy and Infectious Diseases.

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