[Billing Code 4140-01-P]

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: Amy F. Petrik, Ph.D., 240-627-3721, amy.petrik@nih.gov. Licensing information and copies of the U.S. patent application listed below may be obtained by communicating with the indicated licensing contact at 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signed Confidential Disclosure Agreement will be required to receive copies of unpublished patent applications.

SUPPLEMENTARY INFORMATION: Technology description follows.

Stabilized Group 2 Influenza Hemagglutinin Stem Region Trimers and Uses Thereof

Description of Technology:

Researchers at the Vaccine Research Center of the National Institute of Allergy and Infectious Diseases (NIAID) have designed influenza vaccine candidates based on group 2 influenza hemagglutinin (HA) proteins. These group 2 HA proteins were engineered to remove the highly variable head region and stabilize the remaining stem region. The researchers then fused the engineered group 2 HA stabilized stem with a ferritin subunit. The resulting fusion protein can self-assemble into nanoparticles which display group 2 HA stem domain trimers on their surface.

These immunogens elicit cross-reactive antibodies to group 2 influenza viruses and could be used in combination with group 1 HA stem-ferritin immunogens as a universal influenza vaccine. Interestingly, a recent study by Andrews et al., Sci. Immunol. 2, eaan2676 (2017), suggests that cross-reactive group 1/group 2 HA stem antibodies may be more likely to be elicited in humans by a group 2 HA immunogen.

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:

- Use as a broadly protective influenza vaccine

Competitive Advantages:

- Elicits antibodies to both group 1 and group 2 influenza A viruses
- Nucleic acid or recombinant protein-based vaccine
- Increased ease of production compared to current seasonal influenza vaccines

Development Stage:

- In vivo (animal studies)

Inventors: Jeffrey C. Boyington, Barney S. Graham, John R. Mascola, Hadi M. Yassine, Syed M. Moin, Lingshu Wang, Kizzmekia S. Corbett, Masaru Kanekiyo (all from NIAID).

Intellectual Property: HHS Reference Number E-228-2016 includes U.S. Provisional 62/383,267 filed 2 September 2016 and PCT Patent Application No. PCT/US2017/049894 filed 1 September 2017 (pending).

Related Intellectual Property: HHS Reference Number E-293-2011

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Dated: July 25, 2018.

Suzanne M. Frisbie,

Deputy Director,

Technology Transfer and Intellectual Property Office,

National Institute of Allergy and Infectious Diseases.

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