Broadly Protective HA Antigens for Seasonal & Pandemic Influenza Vaccines (Human, Bird, & Swine)

INVENTION: University of Georgia investigators have developed and tested in various animal models H1, H3, H5, H7 and influenza B proteins that elicit potent, broadly-reactive antibody responses that protect against both drifted seasonal and novel pandemic influenza strains. These antigens induce immunity targeting both the globular head and stem regions of HA. These next-generation antigens produce a broader breadth of vaccine induced antibodies against co-circulating strains of influenza compared to the wild-type HA antigens that were represented in commercial influenza vaccines. These broadly-reactive antigens have the ability to not only elicit protective antibodies against the dominant vaccine strains, but also minor circulating strains that can evolve into the dominant vaccine strains in the future.

APPLICATIONS:
- Seasonal and Pandemic Human Influenza
- Swine Influenza
- Avian Influenza

ADVANTAGES:
- Induce immunity targeting the head and stem regions of HA
- Induce a broader breadth of vaccine elicited antibodies against co-circulating influenza strains
- Protects against both drifted seasonal and novel pandemic influenza strains
- Can be delivered using any platform

STAGE OF DEVELOPMENT: Completion of pre-clinical studies in mice, ferrets, pigs, and birds (Allen and Ross et al. 2018, Hum Vaccin Immunother; Wong et al. 2017 J Virol; Carter et al. 2017 J Virol ; Allen et al. 2017 Vaccine; Carter et al. 2016. J Virol;)

BACKGROUND: Current licensed influenza vaccines induce hemagglutination-inhibition (HI) antibodies that do not cross-react with drifted influenza strains. There is an urgent unmet need for more broadly protective seasonal influenza vaccines with greater breadth, enhanced potency, and durability of HAI responses. It is currently impossible to predict which antigenic variants may evolve and therefore novel vaccine candidates are needed that will elicit immunity to potential variants and across subtypes of influenza.

INVENTORS: Ted Ross et al

PATENT STATUS: Pending and Issued US Patents:

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