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Novel Strategy to Develop a Universal Influenza Vaccine

Adenoviral vector vaccine expressing conserved influenza proteins provides universal, long-lasting flu protection.

Researchers at Purdue University have identified universal flu vaccine candidates against influenza A virus.

Currently, flu vaccines are adapted year-to-year to match with the circulating strains that has evolved due to small changes in the genetic make-up of the Influenza virus (known as 'Antigenic Drift') and infrequent but profound changes in the virus (known as 'Antigenic Shift'). Influenza pandemics caused by Antigenic shift occur when two or more different strains of virus combine to form a new subtype along with high person-to-person transmission of the new subtype. A universal vaccine withstands antigenic shift and antigenic drift, thus preventing modification of the flu vaccine year to year.

Purdue researchers have designed a universal influenza vaccine based on an adenoviral vector platform that expresses a conserved protein of influenza virus with a cell compartment-specific domain.

Technology Validation: The vaccine was validated in mice challenged with 5 different strains of influenza virus conferring complete protection.

Advantages

-Combats seasonal and pandemic influenza virus

-Precludes the need for annual reformulation and administration

-Increased T-cell immunity for long-lasting protection

Applications

-Universal Influenza A Vaccine

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