Novel Platforms for the Development of a Universal influenza vaccine

Despite advancements in immunotherapeutic approaches, influenza continues to cause severe illness, particularly among immunocompromised individuals, young children, and elderly adults. Vaccination is the most effective way to reduce rates of morbidity and mortality caused by influenza viruses. Frequent genetic shift and drift among influenza virus strains with the resultant disparity between circulating and vaccine virus strains limits the effectiveness of the available conventional influenza vaccines. One approach to overcome this limitation is to develop a universal influenza vaccine that could provide protection against all subtypes of influenza viruses. Moreover, the development of a novel or improved universal influenza vaccines may be greatly facilitated by new technologies including virus-like particles, T-cell-inducing peptides and recombinant proteins, synthetic viruses, broadly neutralizing antibodies, and nucleic acid-based vaccines. This review discusses recent scientific advances in the development of next-generation universal influenza vaccines.

General information
Publication status: Published
Organisations: National Veterinary Institute, T-cells & Cancer, Linköping University, GlaxoSmithKline Pharmaceuticals Ltd.
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Number of pages: 14
Publication date: 2018
Peer-reviewed: Yes

Publication information
Journal: Frontiers in Immunology
Volume: 9
Article number: 600
ISSN (Print): 1664-3224
Ratings:
BFI (2018): BFI-level 1
Scopus rating (2018): CiteScore 4.71 SJR 2.021 SNIP 1.092
Web of Science (2018): Impact factor 4.716
Web of Science (2018): Indexed yes
Original language: English
Keywords: Influenza, Hemagglutinin, Virus-like particles, Universal flu vaccine, Neutralizing antibodies, Vaccination strategies, Functional antibody responses
Electronic versions:

DOI:
10.3389/fimmu.2018.00600
Source: FindIt
Source ID: 2397695956
Research output: Contribution to journal › Journal article – Annual report year: 2018 › Research › peer-review