



TECHNOLOGY

An Interferon Enhancer for Enhancement of Immune Response for Vaccine Applications

OVERVIEW

Background

Interferons (IFNs) are a group of cytokines or proteins that are made and released by host cells in response to infections by viruses and bacteria. IFNs allow for host cells to communicate with each other and hence trigger a strong immune response. There are three types of IFNs that have similar functions of being antiviral and anti-tumor agents. IFNs are critical to innate immunity against viral infections and have an important role in the stimulation of adaptive immune response. As invading pathogens, viruses need to overcome the host innate immune response by encoding proteins to inhibit interferons. Viruses have evolved various strategies to block interferon production. Therefore, there is need for a method that prevents pathogen interferon blocking mechanisms, and facilitates better immune response.

Innovative Technology

Researchers at the University of Maryland have identified a strategy by which host interferon production can be boosted. Researchers demonstrated the efficacy of this system by examining the induction of IFNs. In vitro studies show that the capacity of IFN production with expression of the viral protein is significantly enhanced. The method can be extended to different kinds of viral and other pathogen infections for purposes of vaccine development.

APPLICATIONS

- Vaccine development for not only viral infections but also infections against other pathogens
- Inhibition of tumor growth

ADVANTAGES

- This system can be used to potentiate adaptive immune responses by enhancing innate immunity.
- It can be inserted in other viral genomes to illicit better IFN response

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Additional Information

INSTITUTION

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PATENT STATUS

Patent(s) pending

LICENSE STATUS

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CATEGORIES

- Vaccines
- Biologics

EXTERNAL RESOURCES

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