

PRFA-MODULATED LISTERIA VACCINE PLATFORM

Tech ID: 25329 / UC Case 2016-031-0

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	10,774,390	09/15/2020	2016-031

BRIEF DESCRIPTION

Recombinantly modified *Listeria monocytogenes* (Lm) vaccine platforms which are engineered to encode a designated antigen(s) relevant to a selected targeted pathogenic agent or malignancy have formed the basis for several human clinical trials. With respect to the mechanism of action of Lm vaccines, following administration to a subject and upon entry to the host cell cytosol, *Listeria monocytogenes* coordinates the expression of numerous essential virulence factors through activation of the Crp-Fnr family transcriptional regulator, PrfA. While much is known about PrfA and the virulence genes it regulates, the host-derived stimulus that leads to initial activation of PrfA remains unknown.

UC Berkeley researchers have developed advanced methodologies for modulating the virulence transcription factor PrfA in recombinant *Listeria monocytogenes* (Lm) vaccine platforms. This technology enhances antigen expression while maintaining bacterial attenuation, optimizing immunogenicity for infectious disease and cancer immunotherapy applications. The platform is based on precise control of PrfA activation, a Crp-Fnr family transcriptional regulator that orchestrates the expression of key virulence determinants upon entry into the host cell cytosol. While the host-derived stimuli initiating PrfA activation remain undefined, this innovation enables systematic assessment of PrfA-driven expression constructs within Listerial host cells, facilitating improved vaccine engineering.

SUGGESTED USES

» Vaccines

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

► DP-L4056 Prophage-Cured Strain Of *Listeria Monocytogenes*

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OTHER INFORMATION

CATEGORIZED AS

» Medical

» Vaccines

RELATED CASES

2016-031-0