# PRFA-MODULATED LISTERIA VACCINE PLATFORM

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## 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

## CONTACT

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## OTHER INFORMATION

**CATEGORIZED AS**

» **Medical**

» Vaccines

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