

# New MenB vaccine heralds use of genetic vaccines to combat bacterial diseases

July 18 2023

---



Credit: Unsplash/CC0 Public Domain

A vaccine candidate that can protect children from Meningococcal group B (MenB), which can lead to meningitis, has progressed to clinical development, according to an announcement by researchers from the

University of Surrey and the University of Oxford.

In a paper published by *Science Translational Medicine*, scientists show how they were able to use an existing [vaccine](#) delivery platform—similar to the vaccines created to tackle COVID-19 and Ebola—to effectively produce the specific part of the bacteria that triggers the immune system to make protective antibodies.

Professor Christine Rollier, who conducted the research while at Oxford University in her role as Associate Professor in Vaccinology at the Oxford Vaccine Group before moving to the University of Surrey said,

"The key challenge in our study was using viral-based vaccine platforms that can successfully generate antibodies against diseases such as rabies and SARS-CoV-2 to work for bacterial infections such as MenB."

To meet this challenge, the team used vaccine platforms that expressed a protective protein called "factor H binding protein." The researchers tested these vectors to see if they could produce the protein reliably and if they could stimulate a strong immune response in mice.

The team identified a promising vaccine candidate, and it was further improved for [human use](#) by making small changes to its structures and testing it, once again, on mice with human-like immune systems. The [vaccine candidate](#) has progressed to [clinical development](#).

Professor Rollier added, "While our MenB vaccine has shown strong, consistent, and long-lasting protection against these severe bacteria in mice after a single dose, we understand the complexities of the human [immune system](#). As we progress, we remain cautiously optimistic about its potential to induce similar protective responses in humans.

"More importantly, the application of genetic vaccines such as ours

signifies a hopeful leap forward in combating bacterial diseases."

MenB bacteria are a severe cause of life-threatening infections, including meningitis and sepsis. MenB is the predominant group responsible for 90% of meningococcal infections in the UK, according to the NHS. These infections can affect people of all ages but are most common in babies and [young children](#). MenB infections can be fatal, with around one in 20 affected children dying from the disease.

**More information:** Christina Dold et al, An adenoviral-vectored vaccine confers seroprotection against capsular group B meningococcal disease, *Science Translational Medicine* (2023). [DOI: 10.1126/scitranslmed.ade3901](#)

Provided by University of Surrey

Citation: New MenB vaccine heralds use of genetic vaccines to combat bacterial diseases (2023, July 18) retrieved 28 April 2024 from <https://medicalxpress.com/news/2023-07-menb-vaccine-heralds-genetic-vaccines.html>

|  |
|--|
| <p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p> |
|--|