



## TECHNOLOGY

# Gonorrhea Vaccine

## OVERVIEW

### Background

*Neisseria gonorrhoeae* (GC), the causative agent of the sexually transmitted infection gonorrhea, is the second most common notifiable infection in the United States. Untreated GC infections can result in reproductive complications in women. Fortunately, there are antibacterial treatments available for gonorrhea. However, resistance is rapidly developing to ceftriaxone, the first-line treatment for GC infections. If *N. gonorrhoeae* developed widespread antibacterial resistance, there would be a dramatic increase in the \$5 billion per year treatment costs of gonorrhea infections. These factors have led the CDC to place drug-resistant *N. gonorrhoeae* at the highest level of threat for antibiotic resistance. Development of an effective vaccine, which provides lasting immunity to GC, is of critical importance to the health care community.

### Innovative Technology

Researchers at the University of Maryland have developed a novel way of generating antibody against surface proteins conserved in all gonococcal strains using a heterologous delivery system. Administration of the vaccine to rabbits induced robust production of antibodies, which when combined with human complement, killed GC in cell culture tests. The researchers designed their vaccine on an attenuated live bacterial platform that is currently being tested in humans for other vaccines.

### Advantages

- Offers broad protection against a variety of gonococcal strains
- Circumvents bacterial resistance to first-line treatment options

### Applications:

- Preventive vaccination against gonorrhea

## APPLICATIONS

- Prophylactic vaccination against *N. gonorrhoeae* infections
- Underlying targeting mechanism could be translated to other bacterial infections

## ADVANTAGES

- Stable vaccine platform is well tolerated
- Targets all types of *Neisseria* bacteria

## CONTACT INFO

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## **Additional Information**

### **INSTITUTION**

University of Maryland, College Park

### **PATENT STATUS**

Pending

### **LICENSE STATUS**

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### **CATEGORIES**

- Vaccines

### **EXTERNAL RESOURCES**

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