

Experimental vaccine may protect against HIV

Researchers designed a vaccine candidate using an HIV protein fragment. | Photo Credit: [Biswaranjan Rout](#)

Scientists have developed a novel vaccine candidate that may prevent HIV infection by stimulating an immune response against sugars that form a protective shield around the virus.

“An obstacle to creating an effective HIV vaccine is the difficulty of getting the immune system to generate antibodies against the sugar shield of multiple HIV strains,” said Lai-Xi Wang, a professor at the University of Maryland in the U.S. “Our method addresses this problem by designing a vaccine component that mimics a protein-sugar part of this shield,” said Mr. Wang.

Researchers designed a vaccine candidate using an HIV protein fragment linked to a sugar group. When injected into rabbits, the vaccine candidate stimulated antibody responses against the sugar shield in four different HIV strains.

The protein fragment of the vaccine candidate comes from gp120, a protein that covers HIV like a protective envelope. A sugar shield covers the gp120 envelope, bolstering HIV's defences. The rare HIV-infected individuals who can keep the virus at bay without medication typically have antibodies that attack gp120.

Small fragment

Researchers tried to create an HIV vaccine targeting gp120, but had little success as the sugar shield on HIV resembles sugars found in the human body and does not stimulate a strong immune response. Over 60 strains of HIV exist and the virus mutates. As a result, antibodies against gp120 from one HIV strain will not protect against other strains.

small fragment To overcome these challenges, researchers focused on a small fragment of gp120 protein that is common among HIV strains.

Lifestyle-related risk factors are being cited, compounded by an inadequate number of treatment centres in the region

Without policies to stop the worrying spread of antimicrobial resistance, the mortality rate could be disturbing

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