New HIV Antibody Target Could Have Many Benefits

December 29, 2014 By Benjamin Ryan

National Institutes of Health (NIH) researchers have found a new site on HIV's surface that is vulnerable to a powerful broadly neutralizing antibody (BNA), a discovery that could lead to new developments in the vaccine, treatment or prevention fields.

Called 35O22, the antibody binds to the viral surface, or envelope, at a site that straddles two proteins, called gp41 and gp120, that stick out of the virus. It prevents 62 percent of all known strains of HIV from infecting cells in a laboratory setting. The antibody is also highly potent, with a relatively small amount needed to neutralize the virus. The NIH researchers found that 35O22–like antibodies were common among a group of HIV-positive people whose immune systems were able to ward off a broad swath of HIV strains. They believe that this finding suggests that vaccines might have better success at prompting 35O22 antibodies than other, less common BNAs.

The hope is that a vaccine, or a prevention or treatment regimen, that elicits 35O22–like antibodies along with a few other BNAs could effectively combat the vast majority of HIV strains found around the world.

"I think that each of these antibodies has been a pretty big deal," says Mark Connors, MD, the study's principal investigator, who studies HIV-specific immunity at the NIH. "They tend to tell us a little bit about how [the viral] envelope works and how we might elicit these types of antibodies."