A new strategy for developing meningitis vaccines

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Bacterial meningitis is an infection of the meninges, the protective membrane that covers the spinal cord and brain. Children, elderly patients and immunocompromised patients are at a higher risk for the development of severe bacterial meningitis.

Recently, researchers at the University of Adelaide in Australia sought to identify new vaccine targets in Streptococcus pneumoniae, which is the most common cause of bacterial meningitis in the world. Led by Dr. Abiodun Ogunniyi, the research team developed a new method of screening for bacterial genes that are expressed during meningitis in brain tissue.

Using a mouse model system, the researchers examined mice infected with two different strains of *S. pneumoniae*. They identified a protein known as glycerophosphate oxidase, and showed that this protein was critical for the progression of bacteria from blood to brain in mice. They went on to show that a vaccine against glycerophosphate oxidase protected mice from invasive pneumococcal disease. Their results not only suggest a new strategy for immunizing against *Streptococcus pneumoniae*, but also provide a blueprint for discovering additional genes from other pathogens contribute to meningitis.

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