

Scientists study structure of Wza protein

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Scottish scientists have deciphered the three-dimensional structure of Wza, an integral outer-membrane protein that has been linked to virulence.

Many bacteria possess an external "capsule" of secreted polysaccharide molecules that help them to colonize surfaces, the researchers said, and Wza is responsible for moving such polysaccharides from the inside to the outside of the bacteria where they can function. The capsule is effectively the first point of contact between host and pathogen, making it a potential target for vaccines and other therapies.

The X-ray crystal structure the scientists deciphered reveals that most of Wza is located in the space between the inner plasma membrane and the outer cellular membrane or periplasm.

The protein, described by James Naismith and colleagues at St. Andrews University, contains a large central cavity through which the polysaccharides are transported.

The researchers say understanding the protein's structure should also contribute to a broader understanding of how other large polar molecules, such as DNA and proteins, are exported from cells.

The study appears online in the journal *Nature*.

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