New step forward in search for solution to infection puzzle

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Scientists at the University of York have helped to reveal more about the way bacteria can attach to human tissues. The study could help in the development of new treatments for serious heart conditions such as infective endocarditis.

The researchers studied the way a protein found on the surface of the bacteria Staphylococcus aureus binds to a human protein called fibronectin. Their discovery is an important step in understanding how bacteria attach to the surface of blood vessels during infection.

The high-resolution structures of parts of the bacterial protein in complex with multiple fibronectin domains reveals the efficiency with which the bacterial molecule can bind several copies of the human protein, a feature thought to play a role in infection.

Dr Jennifer Potts of the Departments of Biology and Chemistry at York, who led the research said: "Interactions of S. aureus with fibronectin were first reported more than 30 years ago, and yet we still don't understand precisely how and why the bacteria target this human protein.

"Our studies provide a significant step toward solving that issue and could help the future development of new treatments for rare but serious conditions such as infective endocarditis, an infection of the lining or valves of the heart."

The research is published in the latest issue of the *Proceedings of the*

National Academy of Sciences (PNAS).

Source: University of York

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