Help In The Battle Against Superbugs

Targeting a toxin released by virtually all strains of MRSA could help scientists develop new drugs that can fight the superbug, research suggests. A study led by the University of Edinburgh has discovered the toxin - SEIX - which leads the body's immune system to go into overdrive and damage healthy cells.

The toxin SEIX is made by 95 percent of Staphylococcus aureus bacteria, including MRSA strains linked with hospital-acquired infections. When it is released it triggers an over multiplication of immune cells, which can lead to high fever, toxic shock and potentially fatal lung infections. The study, published in the journal *PLoS Pathogens*, will help research to find drugs that could target SEIX and prevent damage to healthy cells.

The research, carried out by the Universities of Edinburgh, Iowa and Mississippi State, looked at a strain of MRSA known as USA300 that can cause severe infections in otherwise healthy individuals. MRSA strains are known to produce different types of toxins but scientists found that SEIX is made by virtually all strains of the superbug. It belongs to a family of toxins known as superantigens, which can invoke an extreme immune response.

Dr Ross Fitzgerald, from The Roslin Institute at the University of Edinburgh, states: "If we can find ways to target this toxin, we can stop it from triggering an over-reaction of the body's immune system and prevent severe infections." The research was funded by the Biotechnology and Biological Sciences Research Council, the National Institutes of Health, USA, the U.S. Department of Agriculture and Pfizer Animal Health.

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