

Cockroach brains could be rich stores of new antibiotics

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(PhysOrg.com) -- Cockroaches could be more of a health benefit than a health hazard according to scientists from The University of Nottingham.

Experts from the School of Veterinary Medicine and Science have discovered powerful antibiotic properties in the brains of [cockroaches](#) and locusts which could lead to novel treatments for multi-drug resistant bacterial infections. They found that the tissues of the brain and nervous system of the insects were able to kill more than 90 per cent of MRSA and pathogenic *Escherichia coli*, without harming human [cells](#).

Simon Lee, a postgraduate researcher presented their work at the Society for General Microbiology's autumn meeting which is being held at The University of Nottingham between the 6 and 9 September 2010. The research has identified up to nine different [molecules](#) in the insect tissues that were toxic to bacteria.

Simon Lee said: "We hope that these molecules could eventually be developed into treatments for E. coli and MRSA infections that are increasingly resistant to current drugs. These new [antibiotics](#) could potentially provide alternatives to currently available drugs that may be effective but have serious and unwanted side effects."

Dr Naveed Khan, an Associate Professor of Molecular Microbiology who is supervising Simon Lee's work said: "Superbugs such as MRSA have developed resistance against the

chemotherapeutic artillery that we throw at them. They have shown the ability to cause untreatable infections, and have become a major threat in our fight against bacterial diseases. Thus, there is a continuous need to find additional sources of novel antimicrobials to confront this menace."

Using state-of-the-art analytical tools, Dr Khan and his team are studying the specific properties of the antibacterial molecules. Research is currently underway to test the potency of these molecules against a variety of emerging superbugs such as *Acinetobacter*, *Pseudomonas* and *Burkholderia*.

Mr Lee explained why it is unsurprising that insects secrete their own [antimicrobials](#). He said: "Insects often live in unsanitary and unhygienic environments where they encounter many different types of bacteria. It is therefore logical that they have developed ways of protecting themselves against micro-organisms."

Provided by University of Nottingham

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