Scientists studying wasps discover being social is better for fighting disease

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Credit: Paul Edward Duckett

(PhysOrg.com) -- In a paper release today, a group of scientists from Macquarie University studying the evolution of disease resistance in insects have found evidence that social species of wasps show significantly higher antimicrobial activity than solitary species.

The research, which was attempting to explain what allowed such complex societies to evolve, found that the origin of antimicrobial defenses in wasps is strongly linked to the species group size and social complexity.

According to one of the lead researchers Mr Stephen Hoggard, "The result provides evidence for the origin of antimicrobial defenses in wasps and increases our understanding of trends in disease resistance

strategies in all social insects."

The findings suggest that wasps originally developed specialized antibiotic defenses to cope with living in the ground in solitary conditions but these then evolved and became much stronger to cope with disease risks associated with living in large groups.

These initial findings could have much further reaching applications. “Being able to understand what is driving the evolution of these antibiotic compounds may help scientists isolate naturally occurring antibiotics in the future and may eventually lead to the location of natural antibiotics for human use”, say Hoggard.

As populations grow and as disease causing micro-organisms continue to re-invented themselves and build a tolerance to existing antibiotics these findings will contribute to the search for new, natural ways to defend against illness.

Provided by Macquarie University