MICROORGANISMS FROM APHID HONEYDEW ATTRACT AND ENHANCE THE EFFICACY OF NATURAL ENEMIES

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Aphids are one of the most serious pests of crops worldwide, causing major yield and economic losses. To control aphids, natural enemies could be an option but their efficacy is sometimes limited by their dispersal in natural environment.
Here, we report the first isolation of a bacterium from the pea aphid *Acyrthosiphon pisum* honeydew, *Staphylococcus sciuri*, which acts as a kairomone enhancing the efficiency of aphid natural enemies. Our findings represent the first case of a host-associated bacterium driving prey location and ovipositional preference for the natural enemy. We show that this bacterium plays a key role in tritrophic interactions because it is the direct source of volatiles used to locate prey. Some specific semiochemicals produced by *S. sciuri* were also identified as significant attractants and ovipositional stimulants.
The use of this host-associated bacterium could certainly provide a novel approach to control aphids in field and greenhouse systems.