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RÉGION MIDI-PYRÉNÉES

Noldus Information Technology

Immune response affects the social behaviour of the workers of *Camponotus fellah* ants
La réponse immunitaire affecte le comportement social des ouvrières de la fourmi *Camponotus fellah*

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Sociality provides gain to individuals living in groups, but this life style has also costs, like the exposition to a myriad of pathogens that can rapidly spread among colony members. To face these risks, the insects have developed various strategies, including physiological and behavioural mechanisms. We studied the behaviour of Camponotus fellah workers after activation of their immune system by injection of peptidoglycans. We followed the dynamic of the immune response with tests of bacterial inhibition, due to antimicrobial peptides released in ant's hemolymph. The modes of action by which antimicrobial peptides kill bacteria are varied and include disrupting membranes, interfering with metabolism, and targeting cytoplasmic components. We verified that the injection of peptidoglycans provokes an immune response in the ants. The action of antimicrobial peptides can be detected during four days after the injection. We observed that the workers whose immune system was stimulated dedicated more time in trophallaxis with their nestmate than control workers. This behaviour shows the importance of the social interactions for the disease prevention of the colony. The substances exchanged during trophallaxis must play an important role for the cure of infected ants.