

## Isolation of fungi from the insect's gut and bioactive evaluation of the secondary metabolites

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**Purpose :** Insecta is huge taxa (approximately 1 million species), and most have a symbiotic relationship with the microbe. Among them, some insects make use of filamentous fungi to produce antimicrobial compounds. So in this study, symbiotic fungi were focused on for the discovery of novel useful bioactive compounds. We report here fungi isolated from the insect's gut and purified a bioactive compound from secondary metabolites.

**Methods :** Insects were collected from several locations in Japan. As gut samples, feces and intestinal tracts were mashed and diluted to  $10^2$ - $10^3$  times. The diluted suspension was spread on potato dextrose agar (PDA) with 100 mg/L kanamycin and chloramphenicol and then incubated at 25°C, for 5d. Isolates were identified by morphological observation and DNA sequencing analysis. And isolates were evaluated by antimicrobial and insecticidal tests.

**Results and Conclusion :** The DNA analysis showed that insect parasites (Clavicipitaceae s.l.) were isolated from insects with leg defects and other defects. And plant-related isolates such as plant pathogens were isolated from plant-eating insects. These results suggest the species isolated by insects vary depending on their health and food habits.

The secondary metabolite of *Gliocladiopsis* sp. FKI-9511, isolated from *Plesiophthalmus nigrocyaneus*, had no insecticidal activity against aphid and exhibited broad antibacterial activity. This was purified and the bioactive compound isolated.