# Spider-parasitic fungi: Their taxonomy and biologically active natural products

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**ABSTRACT:**

Araneogenous fungi or spider-parasitic fungi are fungi occurring on spiders found in diverse habitats including the abaxial side of monocot or dicot leaves, tree trunks, or buried in the ground. The majority of these spider-parasitic fungi in the Hypocreales could be found in the Cordycipitaceae and are members of the genera *Akanthomyces, Beauveria, Cordyceps, Engyodontium, Gibellula, Hevansia, Jenniferia, Parahevansia, Polystromomyces,* and *Samsoniella*. Only few are found in the Ophiocordycipitaceae (*Ophiocordyceps, Hirsutella, Hymenostilbe*) and Clavicipitaceae (*Neoaraneomyces, Pseudometarhizium*).

Fungal pathogens of invertebrates are known to be prolific producers of structurally diverse molecules with a wide array of biological activities. Secondary metabolites have long been known to act as virulence factors in pathogenesis and are also used to cope with other competing microorganisms. This explains why many of the secondary metabolites of invertebrate-pathogenic fungi have capacities to inhibit the growth of a wide variety of microorganisms. While many invertebrate-pathogenic fungi have been screened for the presence of interesting compounds, it was only in the last decade that attention was given to spider-parasitic fungi and their metabolites. For example, *Hevansia novoguineensis* turned out to be a rich source of novel compounds including akanthols and akanthopyrones. *Gibellula* was reported to produce pigmentosins (in *G. pigmentosinum*) and gibellamins (in *G. gamsii*) that showed inhibition of the biofilm formation in *Staphylococcus aureus*.

**KEYWORDS:**

Araneogenous fungi, Cordycipitaceae, Hypocreales, spider pathogens, taxonomy.