# DISCOVERY OF NEW BIOACTIVE NATURAL PRODUCTS FROM SYMBIOTIC BACTERIA IN INSECT ECOSYSTEMS

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Symbiotic bacteria in insects have recently drawn a significant attention as an untapped source of new bioactive compounds, which may play protective roles for insect hosts.Secondary metabolites from symbiotic bacterial strains in diverse insects were explored based on LC/MS chemical analysis. Chemical profiling and dereplication of metabolites by an in-house UV spectral library prioritized the strains with novel chemistry. New bioactive natural products were discovered from symbiotic bacteria such as the dung beetle (*Copris tripartitus*), the silkworm (*Bombyx mori*), the burying beetle (*Nicrophorus concolor*), the carpenter ant (*Componotus japonicus*) and other insects. These new compounds include diverse structural classes such as polyketides, non-ribosomal peptides, glycolipids, and even surprisingly flavonoids. Their bioactivities were explored for inhibitory activities against human pathogenic and entomopathogenic microbes and a few disease-relevant enzymes. The discovery of structurally, biologically, and biosynthetically interesting secondary metabolites from insect symbionts demonstrates that studying insect symbionts in search for new bioactive compounds and deciphering their natural and clinical functions could be a new promising strategy in natural product-based drug discovery.