**The antimicrobial compound Produced by** **filamentous fungi**

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Secondary metabolites produced by filamentous fungi have attracted attention. One of the most important secondary metabolites of filamentous fungi is a new-generation antibiotic. At the first time, Alexander Fleming discovered the antibiotic penicillin in 1928. The increase in multi-drug resistance (MDR) causes a great need for new-generation antibiotics. *Enterobacteriaceae*, vancomycin-resistant enterococci, and methicillin-resistant *Staphylococcus* *aureus* (MRSA) are an example of resistant bacteria and are difficult to treat. Mycelium and culture fluid of filamentous fungi contain antibiotics. Cephalosporin and penicillin are common antibiotics that are derived from *A*. *chrysogenum* and *Penicillium chrysogenum*. Respectively Cyclosporin A and Griseofulvin are produced from *Tolepocladium* *inflatum* and *Penicillium* *patulum*. Lindgomycin was produced by marine and terrestrial filamentous fungi of the *Lindgomycetaceae* family, which have antibacterial and antiviral properties and is against *Candida* *albicans* and MRSA.

The purpose of this research is to investigate the secondary metabolites of filamentous fungi that have antimicrobial properties.

To prepare for this research, the keywords of filamentous fungi, pharmaceutical, secondary metabolites, antibiotic, and antiviral were searched in the Google Scholar and PubMed databases.

Filamentous fungi contain novel cluster genes that express new bioactivities compounds such as antibacterial, antiviral, and antifungal compounds. According to filamentous fungi, they have a lot of decomposition enzymes and grow on a lot of cheap substrates, and they are very cheap to cultivate. In the environment, there are new filamentous fungi with new valuable metabolites that must be further researched.

**Keywords:** Filamentous fungi, Pharmaceutical, Secondary metabolites, Antibiotic, Antiviral.