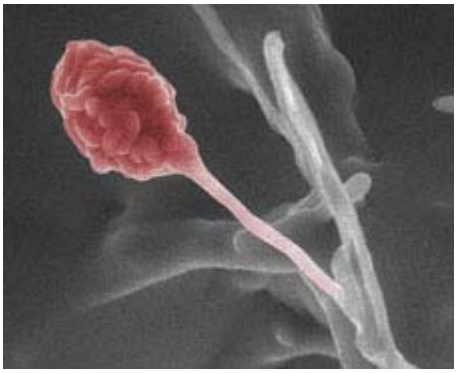
Mold of the Month May 2009
Gliocladium sp.



left: Colorized environmental scanning electron microscope photo of Gliocladium roseum, an endophytic fungus that produces myco-diesel hydrocarbons.

right: Culture plate of Gliocladium roseum, an endophytic fungus that produces myco-diesel hydrocarbons.

Colony Description

The genus *Gliocladium* is often described as a counterpart of *Penicillium* with slimy conidia. Colonies are fast growing, suede-like to downy in texture, white at first, sometimes pink to salmon, becoming pale to dark green with sporulation. The most characteristic feature of the genus is the distinctive erect, often densely penicillate conidiophores with phialides which bear slimy, one-celled hyaline to green, smooth-walled conidia in heads or columns. Although, some penicillate conidiophores are always present, *Gliocladium* species may also produce verticillate branching conidiophores which can be confused with *Verticillium* or T*richoderma*. *Gliocladium* spp. produce rapidly growing, spreading and cottony colonies. The growth covers the whole surface of the plate in about a week. From the front, the colonies are white to cream initially and may become pink to rose or dark green as they mature. The reverse is colorless, white, or yellowish.

Microscopic Morphology

Gliocladium produces hyphae, conidiophores, phialides, and conidia. Hyphae are septate and hyaline. Conidiophores are erect and branch repeatedly at their apices. The terminal branches give rise to flask-shaped phialides. Conidia are one-celled, ovoid to cylindrical, accumulating in a single, terminal, large ball, or occasionally in a loose column. A penicillus bearing a single, large, slimy ball of one-celled conidia is typical of the genus *Gliocladium*.

Ecology

Gliocladium is a mitosporic filamentous fungus which is widely distributed in soil and decaying vegetation. It is commonly considered as a contaminant. The older (obsolete) names for this genus are *Acrostalagmus*, *Isaria*, and *Verticillium*. The telemorphs of the genus *Gliocladium* are included in the genera *Nectria*, *Hypocrea*, and *Nectriopsis*.

Health Effect

Gliocladium has not been reported as the causative agent of any disease in man or animals. Gliotoxin is a metabolite of *Gliocladium deliquescens* . The significance of detection of gliotoxin is yet to be determined.