



Aspergillus fumigatus

General Information

Aspergillus fumigatus belongs to the class Eucosmycetes of the Phylum Ascomycota. It is an opportunistic fungal pathogen that is commonly found in soil and decaying organic matter. In immunocompromised individuals it can cause aspergillosis that include chronic, invasive, and allergic forms of disease.

Host Range

Humans, cows, dolphins, birds, horses

Incubation Period

2 days to 3 months.

Survival Outside Host

A. fumigatus survives well outside of its host as it is heat resistant. *A. fumigatus* can survive in soil and decomposing vegetation.

Laboratory Hazards

Inhalation (primary hazard), ingestion

Symptoms of Exposure

Symptoms of aspergillosis include fever, cough, chest pain, coughing up blood, shortness of breath. Invasive infections mainly occur in immunocompromised individuals.

Lab Acquired Infections (LAIs)

None reported.

Personal Protective Equipment



Disinfection & Inactivation

Susceptible to many disinfectants including 10% bleach. Can be inactivated by autoclaving. *A. fumigatus* is considered a thermotolerant fungus and can withstand high heat. Autoclaving must be at 121°C for inactivation.

Waste Management

Refer to [USC's Biological and Infectious Waste Management Plan](#).

Lab Containment

Biosafety Level 2 (BSL-2) for activities with materials and cultures known or reasonably expected to contain *Aspergillus fumigatus*.

Animal Containment

Animal Biosafety Level 2 (ABSL-2) for activities with experimentally infected animals.

Medical Surveillance/Treatment

Surveillance: Presence can be detected by histological examination of *A. fumigatus* hyphae as well as by PCR and ELISA.

Prophylaxis: Recommended for personnel with certain conditions that place them at a greater risk for invasive aspergillosis.

Vaccines: none

Treatment: Typically Voriconazole or Amphotericin B deoxycholate for invasive aspergillosis. Debridement is required for local aspergillosis.

Spill Procedures

See [USC Biological Spill Procedures](#)

Exposure Procedures

See [USC Protocol for Post Exposure Evaluation and Follow-up](#). Use of sharps should be strictly limited. All procedures with the potential for creating aerosols must be performed in a biosafety cabinet or other physical containment device.

References

Public Health Agency of Canada. *Aspergillus* spp. <https://www.canada.ca/en/public-health/services/laboratory-biosafety-biosecurity/pathogen-safety-data-sheets-risk-assessment/aspergillus.html>

CDC. Symptoms of aspergillosis. <https://www.cdc.gov/fungal/diseases/aspergillosis/symptoms.html>