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Population and Public Health Branch (PPHB)

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## MATERIAL SAFETY DATA SHEET - INFECTIOUS SUBSTANCES

### SECTION I - INFECTIOUS AGENT

**NAME:** *Cryptococcus neoformans*

**SYNONYM OR CROSS REFERENCE:** Cryptococcosis, Torulosis, European blastomycosis

**CHARACTERISTICS:** Yeast; often budding, surrounded by a wide mucopolysaccharide capsule

### SECTION II - HEALTH HAZARD

**PATHOGENICITY:** Mycosis presenting as a subacute or chronic meningitis; infection of lung, kidney, prostate, bone or liver may occur; skin lesions, ulcers or subcutaneous tumour-like masses; untreated meningitis terminates fatally within several months

**EPIDEMIOLOGY:** Sporadic cases occur worldwide; males infected twice as frequently as females, mainly adults; important mycosis in immunocompromised patients esp. (Patients with AIDS or severe combined immunodeficiency)

**HOST RANGE:** Humans; cats, dogs, horses, cows, monkeys and other animals

**INFECTIOUS DOSE:** Low level of pathogenicity for normal immunocompetent adults

**MODE OF TRANSMISSION:** Presumably by inhalation

**INCUBATION PERIOD:** Unknown; pulmonary disease may precede brain infection by months or years

**COMMUNICABILITY:** Not transmitted directly from person to person

### SECTION III - DISSEMINATION

**RESERVOIR:** Saprophytic growth in external environment; isolated consistently from old pigeon nests, pigeon droppings and from soil in many parts of world

AIDS

**ZOONOSIS:** Not transmitted from animals to humans

**VECTORS:** None

#### **SECTION IV - VIABILITY**

**DRUG SUSCEPTIBILITY:** Sensitive to amphotericin B, 5-fluorocytosine, fluconazole, ketoconazole

**DRUG RESISTANCE:** Resistant strains to all of the above drugs have been isolated

**SUSCEPTIBILITY TO DISINFECTANTS:** Susceptible to 1% sodium hypochlorite, iodine, phenolics, glutaraldehyde, formaldehyde; susceptibility to 70% ethanol questionable

**PHYSICAL INACTIVATION:** Inactivated by moist heat (121°C for at least 15 min)

**SURVIVAL OUTSIDE HOST:** Survives for months to years, especially in pigeon droppings

#### **SECTION V - MEDICAL**

**SURVEILLANCE:** Monitor for symptoms; confirm by microscopic examination of specimens (usually CSF, may also be present in urine or pus); confirm by culture or histopathology

**FIRST AID/TREATMENT:** Combination therapy with amphotericin B and 5-fluorocytosine or ketoconazole

**IMMUNIZATION:** None

**PROPHYLAXIS:** None

#### **SECTION VI - LABORATORY HAZARDS**

**LABORATORY-ACQUIRED INFECTIONS:** Respiratory infections from laboratory exposure not recorded; 1 recorded case as a result of laceration by a scalpel blade contaminated with encapsulated yeast cells

**SOURCES/SPECIMENS:** Clinical specimens and tissues (blood, CSF); soil, pigeon droppings and other environmental sources

**PRIMARY HAZARDS:** Accidental parenteral inoculation of cultures or other infectious materials; bites by experimentally infectious mice; manipulations of infectious environmental materials (pigeon droppings) also represent a potential hazard

**SPECIAL HAZARDS:** Immunocompromised individuals are particularly at risk

#### **SECTION VII - RECOMMENDED PRECAUTIONS**

**CONTAINMENT REQUIREMENTS:** Biosafety level 2 practices, containment equipment and facilities are recommended for activities with known or potentially infectious materials; processing of soil or other environmental materials likely to contain infectious yeast cells should be conducted in a biological safety cabinet

**PROTECTIVE CLOTHING:** Laboratory coat; gloves when direct contact with infectious materials is unavoidable

**OTHER PRECAUTIONS:** Good sanitation, cleaning and disinfection important

## SECTION VIII - HANDLING INFORMATION

**SPIILLS:** Allow aerosols to settle; wearing protective clothing, gently cover spill with paper towels and apply sodium hypochlorite, starting at perimeter and working towards the centre; allow sufficient contact time (30 min) before clean up

**DISPOSAL:** Decontaminate before disposal; steam sterilization, incineration, chemical disinfection

**STORAGE:** In sealed containers that are appropriately labelled

## SECTION IX - MISCELLANEOUS INFORMATION

**Date prepared:** February 2000

**Prepared by:** Office of Laboratory Security, PPHB

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