MATERIAL SAFETY DATA SHEET - INFECTIOUS SUBSTANCES

SECTION I - INFECTIOUS AGENT

NAME: Venezuelan equine encephalitis virus

SYNONYM OR CROSS REFERENCE: Venezuelan equine encephalomyelitis, VEE, Venezuelan equine fever, arbovirus

CHARACTERISTICS: Togaviridae, alphavirus; 70 nm diameter, ssRNA, enveloped; enzootic subtypes and epizootic varieties of subtype 1

SECTION II - HEALTH HAZARD

PATHOGENICITY: Influenza-like manifestations; abrupt onset of severe headache, chills, fever, myalgia, retro-orbital pain, nausea and vomiting; conjunctival and pharyngeal injection; most infections mild with symptoms 3-5 days; some cases have biphasic fever, CNS involvement, encephalitis with disorientation, convulsions, paralysis, coma and death

EPIDEMIOLOGY: Endemic in northern South America, Trinidad, Central America, Mexico and Florida; appear as epizootics principally in Northern and Southwestern America; in 1970-71, spread through Central America into the USA; children are at greatest risk for developing CNS infections

HOST RANGE: Humans, horses

INFECTION DOSE: 1 viral unit - subcutaneous

MODE OF TRANSMISSION: Bite of infected mosquito; laboratory infections by aerosols are common; no evidence of transmission from horses to humans

INCUBATION PERIOD: Usually 2-6 days, can be as short as 1 day

COMMUNICABILITY: Human cases are infectious for mosquitoes for 72 hours; mosquitoes are infectious for life; person-to-person transmission may occur but has not been demonstrated

SECTION III - DISSEMINATION

RESERVOIR: Rodent-mosquito cycle maintains the enzootic subtypes; epizootic subtypes transmitted in cycles involving horses, mosquitoes, humans

ZOOSONOSIS: Yes, from infected horses via mosquitoes

VECTORS: Mosquitoes - Culex (Melanoconion), Aedes, Mansonia, Psophora, Haemogogus, Dineocerites, Sabethes, Anopheles

SECTION IV - VIABILITY

DRUG SUSCEPTIBILITY: N/A

SUSCEPTIBILITY TO DISINFECTANTS: Susceptible to disinfectants - 1%
sodium hypochlorite, 70% ethanol, 2% glutaraldehyde, formaldehyde

PHYSICAL INACTIVATION: Inactivated by moist and dry heat; drying

SURVIVAL OUTSIDE HOST: Virus is present in pharyngeal secretions and is stable when aerosolized; stable in dried blood and exudates

SECTION V - MEDICAL

SURVEILLANCE: Monitor for symptoms; confirm by virus isolation, antibody titre

FIRST AID/TREATMENT: No specific treatment

IMMUNIZATION: Investigational attenuated virus vaccine and inactivated vaccine are available and recommended for all personnel working with VEE, infected animals or entering rooms where these agents or infected animals are present

PROPHYLAXIS: None

SECTION VI - LABORATORY HAZARDS

LABORATORY-ACQUIRED INFECTIONS: 150 reported laboratory infections with 1 death; eighth most commonly reported laboratory infection

SOURCES/SPECIMENS: Blood, nasopharyngeal specimens, CSF, urine

PRIMARY HAZARDS: Exposure to aerosols of infectious solutions and animal's bedding, accidental parenteral inoculation, broken skin contact

SPECIAL HAZARDS: Virus is stable in dried blood or exudates

SECTION VII - RECOMMENDED PRECAUTIONS

CONTAINMENT REQUIREMENTS: Biosafety level 3 practices (with vaccination), containment equipment, and facilities for activities using potentially infectious clinical materials and infected tissue cultures, animals or arthropods

PROTECTIVE CLOTHING: Laboratory coat; gloves and gown with ties in back and tight wrists when working with agent

OTHER PRECAUTIONS: HEPA filtration of all exhaust air prior to discharge; vaccination of workers

SECTION VIII - HANDLING INFORMATION

SPILLS: Allow aerosols to settle; wearing protective clothing (respirator), gently cover spill with paper towel and apply 1% sodium hypochlorite, starting at perimeter and working towards the centre; allow sufficient contact time before clean up (30 min)

DISPOSAL: Decontaminate before disposal; incineration, steam sterilization

STORAGE: In sealed containers that are appropriately labelled (in locked level 3 facility)

SECTION IX - MISCELLANEOUS INFORMATION

Date prepared: May, 2001

Prepared by: Office of Laboratory Security, PHAC
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Important Notices