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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: *Vesicular stomatitis virus*

SYNONYM OR CROSS REFERENCE: VSV, Vesicular stomatitis fever

CHARACTERISTICS: *Rhabdoviridae*; envelope with 10 nm spikes, bullet-shaped virion 70 x 175 nm, negative sense ssRNA

SECTION II - HEALTH HAZARD

PATHOGENICITY: Influenza-like symptoms; headache, fever, retrobulbar pain on motion of eyes, malaise, nausea, pain in the limbs and back; possible vesicular lesions in mouth, lips and hands; leukopenia; recovery may be prolonged and death is unknown

EPIDEMIOLOGY: North and South America. The Indiana and New Jersey strains are the two most prominent types in N. America. Related viruses in genus present in Asia, Africa; primarily affecting people handling dairy cattle and secondarily beef cattle

HOST RANGE: Wide host range, most mammals to insects. Cattle, horses, pigs, deer, humans

INFECTIOUS DOSE: Unknown

MODE OF TRANSMISSION: Probably arthropod-borne via the bite of an infective sandfly, mosquito or blackfly; by direct contact with infected animals (vesicular fluid, saliva) or their environment; exposure to infectious aerosols has resulted in many laboratory-acquired infections

INCUBATION PERIOD: Up to 6 days, usually 3-4 days

COMMUNICABILITY: Virus is infective in blood for at least 24 hours before and after onset of fever

SECTION III - DISSEMINATION

RESERVOIR: Cattle, horses, swine

ZOONOSIS: Yes by direct contact with infected animals or by insect vector

VECTORS: Possibly sandflies, mosquitoes, blackflies. Virus has been cultured from vectors, and transmission has been demonstrated experimentally.

SECTION IV - VIABILITY

DRUG SUSCEPTIBILITY: N/A

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

PHYSICAL INACTIVATION: Inactivated on exposure to UV, heat and lipid solvents

SURVIVAL OUTSIDE HOST: Inactivated in sunlight and does not survive for long periods out of host unless protected in cool dark areas

SECTION V - MEDICAL

SURVEILLANCE: Monitor for symptoms; confirm by virus isolation, serology

FIRST AID/TREATMENT: Symptomatic treatment (self-limiting disease)

IMMUNIZATION: Not available for use in humans

PROPHYLAXIS: None

SECTION VI - LABORATORY HAZARDS

LABORATORY-ACQUIRED INFECTIONS: Documented hazard to personnel handling infected livestock, tissues and virulent isolates; between 40 and 46 reported laboratory associated infections before 1980; seroconversion and illness rates are high

SOURCES/SPECIMENS: Vesicular fluid, tissues, and blood of infected animals; blood and throat secretions of humans

PRIMARY HAZARDS: Exposure to infectious aerosols and droplets; direct contact with skin and mucous membranes; accidental parenteral inoculation

SPECIAL HAZARDS: Handling infected livestock is a documented hazard

SECTION VII - RECOMMENDED PRECAUTIONS

CONTAINMENT REQUIREMENTS: Conditions under which this organism (not indigenous to Canada) is used and maintained for animal inoculations are established by Agriculture Canada; Biosafety level 3 practices, containment equipment and facilities for the manipulation of virulent isolates; laboratory adapted strains of demonstrated low virulence pose a lower risk

PROTECTIVE CLOTHING: Gloves and respiratory protection are

recommended for the handling of infected animals and tissues

OTHER PRECAUTIONS: None

SECTION VIII - HANDLING INFORMATION

SPILLS: Allow aerosols to settle; wearing protective clothing, 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, chemical disinfection

STORAGE: In sealed containers that are appropriately labeled

SECTION IX - MISCELLANEOUS INFORMATION

Date prepared: February, 2001

Prepared by: Office of Laboratory Security, PPHB

Although the information, opinions and recommendations contained in this Material Safety Data Sheet are compiled from sources believed to be reliable, we accept no responsibility for the accuracy, sufficiency, or reliability or for any loss or injury resulting from the use of the information. Newly discovered hazards are frequent and this information may not be completely up to date.

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