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### Characteristics

**Morphology**
Family Rhabdoviridae. Genus Vesiculovirus. Approx. 70nm in diameter, bullet-shaped, enveloped, single-stranded, negative-sense RNA virus. VSV has eight main serotypes: Indiana, New Jersey, Cocal, Alagoas, Isfahan, Chandipura, Maraba, and Piry.

**Growth Conditions**
Cell culture (recommended LLC-MK<sub>2</sub> cells; Incubated at 35 °C within 24 to 48 hours)

### Health Hazards

**Host Range**
VSV causes disease in cattle, horses and swine. Human infection during epizootics is common.

**Modes of Transmission**
- Bite of an infected sand fly; contact with infected domestic animals; direct contact with abrasions on skin; inhaling aerosols via the nasopharyngeal route; or via accidental autoinoculation or inhalation of aerosols in a laboratory setting
- Infections with Indiana and New Jersey VSV serotypes: high fever (often biphasic); flu-like symptoms include severe malaise, headaches, myalgia, arthralgia, retrosternal pain, eye aches, and nausea.
- Infections with Alagoas serotype: flu-like symptoms. 3) Infections with Chandipura serotype: fever, sensory disorders, convulsions, vomiting, diarrhea, and encephalitis. 4) Infections with Cocal, Piry, Maraba, Isfahan serotypes: unknown

### Infectious Dose
Unknown

**Incubation Period**
Ranges 30 hours to 6 days

### Medical Precautions / Treatment

**Prophylaxis**
Good hygiene is recommended

**Vaccines**
None available

**Treatment**
No specific treatment is available. Symptomatic treatment and prevention of secondary infections is important

**Surveillance**
Monitor for symptoms. Laboratory confirmation is done via virus isolation from throat swabs or blood, PCR, ELISA, neutralization, compliment fixation, immunofluorescence, and electron microscopy

**Vesicular Stomatitis Virus (VSV)**

### Containment & Practices

**BSL2**
BSL2 is recommended for work involving Indiana, Cocal, Alagoas, New Jersey, Isfahan and Maraba VSV serotypes.

**Lab-specific procedures (SOPs) will outline specific containment, practices and PPE.**

**BSL3**
BSL-3 practices, containment, equipment, and facilities are recommended for work involving VSV Chandipura and Piru serotypes infectious or potentially infectious materials, animals, or cultures.

**Animal Work**
Risk assessment will be conducted to determine containment, practices and PPE will be determined

### Spill Procedures

**Small**
Notify others working in the lab. Allow aerosols to settle. Don appropriate PPE. Cover area of the spill with paper towels and apply an EPA approved disinfectant, working from the perimeter towards the center. Allow 30 minutes of contact time before disposal and cleanup of spill materials.

**Large**
Contact Emory’s Biosafety Officer (404-727-8863), the EHSO Office (404-727-5522), or The Spill Response Team (404-727-2888).

### Exposure Procedures

**Mucous Membrane**
Flush eyes, mouth or nose for 15 minutes at eyewash station.

**Other Exposures**
Immediately report incident to supervisor, complete an employee incident report in the HOME portal: https://hrprod.emory.edu Self-Service>Workplace Health>Log into HOME with your Emory ID and password->Accident/Injury Entry

**Reporting**
- 7am-4pm (OIM) including Needlestick: 404-686-8587
- After Hours: OIM NP On Call 404-686-5500 PIC# 50464

**Medical Follow-up**
- Yerkes: Maureen Thompson Office (404-727-8012)
- Cell (404-275-0963)

### VIABILITY

**Disinfection**
10% Sodium hypochlorite

**Inactivation**
Sensitive to heat (60 °C) and low pH (1.5).

**Survival Outside Host**
Can survive for 3 to 4 days in infected animal saliva

### Laboratory Hazards

**Laboratory Acquired Infections (LAIs)**
46 cases with New Jersey and Indiana viruses and 13 cases due to Piry virus until 1980 (with no deaths). No LAIs associated with Chandipura, Cocal, Maraba or Isfahan viruses have been reported

**Sources**
Exposure of skin and mucous membranes to VSV by direct contact with contaminated sources, percutaneous exposure.

### Supplemental References

**Canadian PHAC**

**US Department of Agriculture**

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