MONTANA STATE UNIVERSITY | Office of Research Compliance

PATHOGEN SAFETY DATA SHEET

Pseudorabies virus

CHARACTERISTICS	
Morphology	Pseudorabies virus (PRV) is an enveloped, double-stranded DNA virus belonging to the family Herpesviridae. Also known as suid herpesvirus-1 (SuHV-1), the virus causes Aujeszky's disease. 'Classical' PRV strains affecting multiple species were first isolated in the early 1900s. 'Variant' PRV strains emerged in swine in China in 2011. Genomic sequencing and phylogenetic analyses have repeatedly shown that variant strains form a novel branch that is relatively distant from classical PRV strains.
Disease	PRV causes a natural, economically important disease (Aujeszky's Disease) in swine. It also causes the same disease in other members of the Suidae family. PRV causes fatal "mad itch" in cattle, dogs, and some wild animals.
Zoonosis	Pseudorabies is known to cause direct disease in animals.

HEALTH HAZARDS	
Host Range	Swine. It sporadically infects a variety of species (cattle, sheep, goats, dogs, cats, mink, foxes, raccoons and rats), causing a fatal neurological disease with rabies-like signs and severe itching. Another name for the disease in cattle is "mad itch".
Modes of Transmission	The virus is spread mainly via the respiratory route and nose-to-nose contact. Transmission can also occur by contaminated drinking water, coming in contact with contaminated clothing, footwear, or equipment, especially in cool, damp weather which helps virus survival.
Signs and Symptoms	Although isolated cases of classical PRV have been reported, the virus does not typically infect humans. There are no reports of human infection with variant PRV.
Infectious Dose	Unknown but can be aerosol transmitted.
Incubation Period	Unknown

MEDICAL PRECAUTIONS/TREATMENT	
Prophylaxis	There is no human health risk associated with pseudorabies.
Vaccines	n/a
Treatment	n/a
Surveillance	n/a
MSU Requirements	Report any potential exposures.

LABORATORY HAZARDS	
Laboratory Acquired Infections (LAIs)	None
Sources	There is no human health risk associated with pseudorabies.

SUPPLEMENTAL REFERENCES	
Canadian MSDS:	n/a
BMBL	https://www.cdc.gov/labs/BMBL.html
CDC	n/a
NIH Guidelines	https://osp.od.nih.gov/wp-content/uploads/NIH_Guidelines.pdf

RISK GROUP & CONTAINMENT REQUIREMENTS	
Risk Group 2	Agents that are associated with human disease which is rarely serious and for which preventive or therapeutic interventions are often available.
BSL2	For all procedures involving suspected or known infectious specimen or cultures.
ABSL2	For all procedures utilizing infected animals.

SPILL PROCEDURES	
Small	Notify others working in the lab. Remove PPE and don new PPE. Cover area of the spill with absorbent material and add fresh 1:10 bleach:water. Allow 20 minutes (or as directed) of contact time. After 20 minutes, cleanup and dispose of materials.
Large	• Immediately notify all personnel in the lab and clear all personnel from the area. Remove any contaminated PPE/clothing and leave the lab. • Secure the area by locking doors, posting signage and guarding the area to keep people out of the space. For assistance, contact MSU's Biosafety Officer (406-994-6733) or Safety and Risk Management (406-994-2711).

EXPOSURE PROCEDURES	
Mucous membrane	Flush eyes, mouth, or nose for 5 minutes at eyewash station.
Other Exposures	Wash area with soap and water for 5 minutes.
Reporting	Immediately report incident to supervisor, complete a First Report of Injury form, and submit to Safety and Risk Management.
Medical Follow-up	**During business hours:** Bridger Occupational Health 3406 Laramie Drive Weekdays 8am -6pm. Weekends 9am-5pm **After business hours:** Bozeman Deaconess Hospital Emergency Room 915 Highland Blvd

VIABILITY	
Disinfection	1% bleach (recommended)
Inactivation	The virus is easily inactivated by lipid solvents, by 0.5% of bleach in 30 min. Pseudorabies is also susceptible to quaternary ammonium compounds. Most herpes viruses are also susceptible to 30% ethanol and isopropanol, 0.12% orthophenyl phenol, and 0.04% glutaraldehyde. Inactivated moist heat (1 hour at 121°C).
Survival Outside Host	PRV is stable over a pH range of 4–12 and can remain infectious at cold temperatures for weeks. The virus is inactivated at high temperatures.

PERSONAL PROTECTIVE EQUIPMENT (PPE)	
Minimum PPE Requirements	Lab coat, disposable gloves, safety glasses, closed toed shoes, long pants
Additional Precautions	Additional PPE may be required depending on lab specific SOPs and IBC Protocol.