Biological Agent Reference Sheet (BARS)

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BIOLOGICAL AGENT REFERENCE SHEET

Herpes B Virus *(Macacine alphaherpesvirus 1, Herpesvirus simiae, Cercopithecine Herpesvirus 1)*

CHARACTERISTICS	
Background and Morphology	Belongs to the subfamily Alphaherpesvirinae, herpes simplex virus genus, and is closely related to herpes simplex virus-1 and -2; 160 to 180 nm in diameter, double-stranded DNA virus

HEALTH HAZARDS	
Host Range	Humans are highly susceptible to Herpes B infection. Macaques are natural hosts and can experience mucosal lesions, if immunosuppressed. Experimental hosts include rabbits, dogs, mice and guinea pigs
Modes of Transmission	All macaques should be presumed to have and to shed Herpes B virus. Humans are infected by macaque bites/scratch, splash of the eye or mucous membranes with body fluids, needle stick from contaminated syringe, or scratch/cut with contaminated fomites. Person-to-person transmission has been documented by contact with infected wounds.
Signs and Symptoms	Infection presents with fever, myalgia, headache, and/or nausea and a localized vesicular eruption near the site of inoculation. The vesicular eruption is clinically and pathologically similar to that caused by Herpes simplex virus. Fatality is high when virus spreads to the central nervous system.
Infectious Dose	Unknown
Incubation Period	Ranges 2 days to 5 weeks (most cases ranges 5 to 21 days)

MEDICAL PRECAUTIONS / TREATMENT	
Prophylaxis	**Post exposure prophylaxis**: Antiviral therapy should be started as soon as possible after exposure (within hours), but only after wound cleaning has been completed. Prophylaxis should be prescribed by a physician familiar with Herpes B virus.
Vaccines	None available
Treatment	Intravenous antiviral therapy with acyclovir or ganciclovir is recommended. Treatment should be managed by a physician familiar with Herpes B virus.
Surveillance	Viral culture, PCR, ELISA, Western blot and PCR-microplate hybridization assay. Acute and covalence serum testing is available.
Emory Requirements	Report all near misses, incidents and accidents.

LABORATORY HAZARDS	
Laboratory Acquired Infections (LAIs)	Virtually all known Herpes B virus infections in humans have been acquired via laboratory exposure to macaques, macaque contaminated fomites or macaque fluids or tissue.
Sources	All tissues and fluids from macaques and contaminated fomites.

SUPPLEMENTAL REFERENCES	
Government of Canada	Pathogen Safety Data Sheets: Infectious Substances – Herpesvirus simiae [Cercopithecinae herpes virus 1 (CHV-1)]
CDC	http://www.cdc.gov/herpesbvirus/ Cohen, JI *et al*: Recommendations for Prevention of and Therapy for Exposure to B Virus http://cid.oxfordjournals.org/content/35/10/1191.full
CDC BMBL	Biosafety in Microbiological and Biomedical Laboratories, 6th Edition

CONTAINMENT	
BSL2/ABSL2	ABSL-2/BSL-2 practices, containment equipment, and facilities are recommended for activities using Non-Human Primates (NHP) and NHP tissues. Propagation of Herpes B virus is not authorized at Emory University.

SPILL PROCEDURES	
Small non-animal spills	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 non-animal spills	Contain the spill, notify and evacuate others in the area, then contact Emory's Biosafety Officer (404-357-1821) or the EHSO Spill Response Team (404-727-2888).

EXPOSURE PROCEDURES		
Mucous membrane	Flush eyes, mouth, or nose for 15 minutes at an eyewash station.	
Other Exposures	Wash area with soap and water for 15 minutes.	
Seek Medical Attention	Occupational Health Services (OHS): 7:30 am - 4:00 pm 404-686-8587, Option 4 OHS After Hours APP On Call 404-686-5500, PIC# 50464	Emory National Primate Research Center (ENPRC/EPC): Contact EPC Safety Office cell: 470-966-8003
Reporting	Immediately report incidents to supervisor. Accidents/Exposures must be reported in H.O.M.E. via HR Self-Service portal. Emory HR website > Self-Service > Workplace Health > Report	

VIABILITY	
Disinfection	Fresh 0.25% hypochlorite solution, povidone-iodine, and chlorhexidine
Inactivation	Ultraviolet light and heat (56°C, 30 minutes)
Survival Outside Host	Tissue culture medium (pH 7.2, 4°C) was shown to result in a slight loss in viability after 8 weeks; A single episode of freezing at either -20°C or -72°C resulted in an initial loss of 2 logs of infectivity of tissue culture medium stored specimens. All infectivity is lost after storage in tissue culture media at 40°C for 2 weeks.

PERSONAL PROTECTIVE EQUIPMENT (PPE)	
Minimum PPE Requirements	At minimum, personnel are required to don gloves, lab coat/gown, appropriate face and eye protection, closed-toed shoes, and long pants/skirt prior to working with macaques or macaque tissue or fluids. Additional PPE may be required depending on lab-specific SOPs.
Additional Precautions	***All personnel handling NHP materials (tissues and fluids) must have completed the Herpes B virus training.*** All procedures manipulating macaque tissue or fluids should be conducted in a biological safety cabinet (BSC). The use of needles, syringes, and other sharp objects should be strictly limited.