

Animal Care and Use Program Policies



Prevention of Nonhuman Primate Macacine Herpesvirus 1 Exposure

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Background

All non-human primates (NHP) of the genus *Macaca* should be regarded as infected with Macacine herpesvirus 1 (also known as B-virus) regardless of SPF status, since viral shedding is intermittent and can occur in the absence of visible lesions and negative antibody titer. In the natural host, the virus exhibits pathogenesis similar to that of herpes simplex virus (HSV) in humans. Conversely, when humans are zoonotically infected with B-virus, patients can present with severe central nervous system disease, resulting in permanent neurological dysfunction or death. Severity of the disease increases for untreated patients, with a case fatality rate of approximately 80%. Early diagnosis and subsequent treatment are the linchpins of surviving the infection.

Linked with more than two dozen deaths since its discovery, B virus is the only identified NHP herpesvirus that displays severe pathogenicity in humans. Thus, proper personal protective equipment (PPE) is essential when working with macaques, especially those who have tested positive for the virus. Additionally, bites, scratches and exposures to mucous membranes, including the eye, must be cleaned immediately, and samples from both the macaque and human should be sent for B virus diagnostic testing.

Scope

Research and animal care staff must be familiar with the early symptoms of B-virus infection and the need to immediately report injuries and/or symptoms suspicious of B-virus infection to supervisors, as well as to the Research Safety Office (RSO) and the Oregon National Primate Research Center (ONPRC) Occupational Health Nurse (OHN). Staff must also be trained on the nature of B-virus infection, the need to prevent bites and scratches and other exposure to NHP secretions, and the need to clean wounds immediately. Information on signs and symptoms of infection and contact information is located on the back of the Access/Training Badge issued to all ONPRC staff with access to NHP housing.

Policy

Direct handling of NHPs or NHP tissue should be minimized as much as possible, and when necessary limited to individuals with the requisite training and experience in the handling of NHPs. Training must include both Biosafety and NHP handling as described in the Procedures section below.

Procedures

- I. Individuals authorized to handle NHPs must be trained in the proper methods of restraint and in the use of PPE to help prevent bites, scratches or exposures. Those who directly handle NHPs should refer to SOP # HS-005 related to PPE.
- II. PPE must be changed when visibly soiled or contaminated to minimize cross contamination, and protective clothing must be laundered at the facility or commercially (SOP # HS-005).
- III. Cages and other equipment should be free of sharp edges and corners, and arranged in animal housing areas to minimize risk to workers (SOP # EQ-013, EQ-014).
- IV. Access to areas where NHPs are maintained must be limited to workers, or those accompanied by workers, who have completed all required training and testing for access to NHPs.
- V. Research and husbandry staff should be advised that individuals who are immunosuppressed due to medication or underlying medical conditions might be at higher risk for B-virus infection.
- VI. The Attending Veterinarian and immediate supervisor, in coordination with the RSP/EHRS, are collectively responsible for ensuring that each person has been adequately trained. The Research Integrity Officer will work with the Attending Veterinarian to ensure proper training for all staff. Training should be followed by supervision, and procedural lapses should be immediately corrected to prevent accidental exposures.
- VII. Exposure to NHP fluids or tissues should be reported immediately to the individual's supervisor, RSO and the OHN, and the individual exposed should follow all procedures as outlined in SOP # HS-006.
- VIII. Consult DCM-W SOPs for further information on animal handling for single and group housed animals (SOP # AC-007, AC-049, GL-001), chemical restraint (SOP #VC-006), and behavioral training to assist with procedures (SOP # GL-026, GL-052).

Definitions

DCM-W: Division of Comparative Medicine, West Campus

NHP: Non-human Primates, of the genus *Macaca*

SOP: DCM-W Standard Operating Procedure

SPF: Specific Pathogen Free

RSP/EHRS: Research Safety Program/Environmental Health & Radiation Safety

OHN: Occupational Health Nurse, ONPRC

Authority

AWA 2.32 Personnel training

PHS Policy US Government Principle VIII Investigators and other personnel shall be appropriately qualified and experienced for conducting procedures on living animals.

References

Guide for the Care and Use of Laboratory Animals: Eighth Edition (2011), p. 23.

CFR [Code of Federal Regulations]. 1984b. Title 29, Part 1910, Occupational Safety and Health Standards; Subpart G, Occupational Health and Environmental Control, and Subpart Z, Toxic and Hazardous Substances. Washington: Office of the Federal Register.

CFR [Code of Federal Regulations]. 1984c. Title 29, Part 1910. Occupational Safety and Health Standards; Subpart I, Personal Protective Equipment. Washington: Office of the Federal Register.