



O'nyong-nyong Virus (ONNV)

General Information

O'nyong-nyong virus (ONNV) is an arbovirus belonging to the *Togaviridae* family and *Alphavirus* genus. It is an enveloped, single-stranded RNA mosquito-borne virus endemic to sub-Saharan Africa.

Host Range

Humans are currently the only known host of ONNV.

Incubation Period

About 8 days.

Survival Outside Host

Unknown; less than one day in culture medium at 37°C.

Laboratory Hazards

Parenteral inoculation, aerosols; bite from an infected mosquito (primarily *Anopheles gambiae* and *Anopheles funestus*)

Symptoms of Exposure

ONNV causes febrile polyarthralgia often accompanied by headache, pruritic rash, and fever. Symptoms can also include lymphadenopathy, conjunctivitis, and oral ulcers.

Lab Acquired Infections (LAIs)

Two reported cases of O'nyong-nyong virus infection.

Personal Protective Equipment



Disinfection & Inactivation

ONNV is susceptible to 70% ethanol, 1% sodium hypochlorite, 2% glutaraldehyde, and lipid solvents. ONNV is sensitive to moist heat, dry heat, and drying.

Waste Management

Refer to [USC's Biological and Infectious Waste Management Plan](#).

Lab Containment

[Biosafety Level 2 \(BSL-2\)](#) for activities with materials and cultures known or reasonably expected to contain ONNV.

Animal Containment

[Animal Biosafety Level 2 \(ABSL-2\)](#) for activities with experimentally infected animals.

Medical Surveillance/Treatment

Surveillance: Laboratory diagnoses are limited due to serologic cross-reactions with Chikungunya virus (CHIKV) and possibly other alphaviruses. Reciprocal plaque-reduction neutralization tests (PRNT) are needed to distinguish humoral immunity (typically IgG) from ONNV vs CHIKV.

Prophylaxis: None

Vaccines: None

Treatment: Supportive care; illness is usually self-limited.

Spill Procedures

See [USC Biological Spill Procedures](#)

Exposure Procedures

See [USC Protocol for Post Exposure Evaluation and Follow-up](#). Use of sharps should be strictly limited. A biosafety cabinet should be used when there is a potential to create aerosols or droplets.

References

- G. Rezza, R. Chen and S. Weaver, "O'nyong-nyong fever: a neglected mosquito-borne viral disease," *Pathogens and Global Health*, vol. 111, no. 6, pp. 271-275, 2017.
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- E. Staples and A. Powers, "Togaviridae: Alphaviruses," in *Principles and Practices of Pediatric Infectious Diseases*, ELSEVIER, 2018, pp. 1126-1128.
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