**Agent Summary Yellow Fever Virus (YFV), BSL3 agent**

Yellow Fever Virus (YFV) is an RNA virus, belongs to the Family *Flaviviridae*, Genus *Flavivirus*. According to the World Health Organization (WHO), as of 2023, 34 countries in Africa and 13 countries in Central and South America are either endemic for yellow fever or have regions that are endemic for yellow fever. Currently, yellow fever is not found in the US.

YFV is spread by the bite of infected mosquitoes (*Aedes aegypti*). YFV has three transmission cycles: (1) the jungle (sylvatic) cycle involves virus transmission between non-human primates (e.g., monkeys) and mosquito; (2) an intermediate (savannah) cycle involves virus transmission from mosquitoes to humans living or working in jungle border areas, from primate-to-human and/or human-to-human via mosquitoes; and (3) the urban cycle involves virus transmission between humans and urban mosquitoes.

Most people infected with YWV have mild symptoms and completely recover. For people who develop symptoms, the time from infection until illness is typically 3-6 days. Initial symptoms include sudden onset of fever, chills, severe headache, general body aches, nausea, vomiting. Some people develop a more severe form of the disease. Severe symptoms include yellow skin or eyes (jaundice), hemorrhagic fever with seizures, coma, and multiple organ failure. Among those who develop severe disease, 30-60% die.

Laboratory diagnosis of yellow fever is generally accomplished by testing of serum to detect virus-specific IgM and neutralizing antibodies. In severe cases, nucleic acid amplification, histopathology with immuno-histochemistry, and virus culture from biopsy/autopsy tissues can also be done. Only a few specialized laboratories, including those at CDC, are capable of doing these tests.

There is no drug to treat yellow fever disease.

There is preventive vaccine which is recommended for travelers or residents living in areas at high risk for YFV infection. Yellow fever vaccine is a live-attenuated virus vaccine that has been available since the 1930s. Although no efficacy studies have been performed with yellow fever vaccine, the number of yellow fever disease cases was substantially reduced following the use of the vaccine.

The best way to prevent yellow fever virus infection is to protect yourself from mosquito bites. Use insect repellent, wear long-sleeved shirts and pants, treat clothing and gear, and get vaccinated before traveling.

Worldwide, over 40 cases of professionally acquired YFV infections were reported including laboratory staff handling bio-samples from infected patients or lab animals. Primary exposure hazard is autoinoculation (via needle stick, scratch), ingestion or exposure of mucous membranes with infectious material.

Working with infectious virus, for example, isolation of virus from cell cultures, or initial characterization of viral agents recovered in cultures of virus-containing clinically derived specimens, requires BSL3 containment. Use personal protective equipment (PPE) as described in the associated SOP #4.0.

Enter the following information:

1. Name of the Principal Investigator:
2. Applicable IBC protocol number(s) (approved or submitted): \_\_\_\_\_\_\_\_\_
3. List the laboratory work locations (Building/room[s]) Include the biosafety level(s): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)
4. Procedure Rooms: \_\_\_\_\_\_\_\_\_\_\_\_\_ and Storage: \_\_\_\_\_\_\_\_\_\_\_
5. List the animal facility building/room(s), ABSL3 containment: \_\_\_\_\_\_\_\_\_\_\_
6. Procedures: \_\_\_\_\_\_\_\_\_\_ and Housing: \_\_\_\_\_\_\_\_\_\_\_\_\_

\*Note: confirm with ULAR that the rooms listed above are suitable for BSL3 animals.

1. Date of Agent Summary form completion: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_