**Agent Summary – Methicillin-resistant Staphylococcus aureus (MRSA)**

* Staphylococcus aureusare Gram-positive, catalase positive cocci belonging to the Staphylococcaceae family. They are approximately 0.5-1.5 µm in diameter, nonmotile, non-spore-forming, facultative anaerobes (with the exception of S. aureus anaerobius) that usually form in clusters.
* Methicillin-resistant *Staphylococcus aureus* (MRSA) is a type of staph bacteria that is resistant to certain antibiotics called beta-lactams. These antibiotics include methicillin and other more common antibiotics such as oxacillin, penicillin, and amoxicillin. The resistance is mediated by penicillin binding protein 2a, a penicillin binding protein encoded by the mecA gene that permits growth in the presence of methicillin. The mecA gene is situated in the staphylococcal cassette chromosome SCCmec.
* Most MRSA infections are skin infections that often appear as a bump, a boil, or area that is red, tender and swollen, and is sometimes confused with a spider bite. More severe or potentially life-threatening MRSA infections occur most frequently among patients in healthcare settings (bloodstream infections, pneumonia or surgical site infections).
* The strain most often isolated in the community outbreaks was USA300, which is typically resistant to β-lactam and macrolide antimicrobial agents and contains genes for PVL toxin.
* Mode of transmission: MRSA is usually spread in the community by contact with infected people or things that are carrying the bacteria. This includes through contact with a contaminated wound or by sharing personal items, such as towels or razors that have touched infected skin. Athletes, daycare and school students, military personnel in barracks, and those who receive inpatient medical care or have surgery or medical devices inserted in their body are at higher risk of MRSA infection.

The opioid epidemic may also be connected to the rise of staph infections in communities. People who inject drugs are 16 times more likely to develop a serious staph infection.

* Methicillin-resistant *Staphylococcus aureus* (MRSA) is an infectious agent and requires biosafety level 2 containment (BSL2). Infected animals require ABSL2 containment.
* Use personal protective equipment (PPE) as described in the associated SOP 2.0.

References:

<https://www.cdc.gov/HAI/organisms/mrsa-infection.html>

<https://www.cdc.gov/mrsa/community/index.html>

<https://erj.ersjournals.com/content/34/5/1013>

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]) for MRSA (USA300 strain), a BSL2 agent:

* Procedures:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and Storage: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. List the animal facility building/room(s) for MRSA (USA 300 strain), ABSL2 containment:

* Procedures:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and Housing:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\*Note: confirm with ULAR that the rooms listed above are suitable for ABSL2 animals.

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