**Agent Summary: -conotoxin AuIB**

**Agent information:**

* Conotoxins are polypeptides, typically 10-30 amino acids long and stabilized by distinct patterns of disulfide bonds, that have been isolated from the toxic venom of marine snails and shown to be neurologically active or toxic in mammals.
* -conotoxins (alpha-CgTxs) are a family of Cys-enriched peptides found in several marine snails from the genus Conus.
* These small peptides behave pharmacologically as competitive antagonists of the nicotinic acetylcholine receptor (AChR).
* -conotoxin AuIB blocks the alpha3 beta4 receptor with >100-fold higher potency than other receptor subunit combinations, including alpha2 beta2, alpha2 beta4, alpha3 beta2, alpha4 beta2, alpha4 beta4, and alpha1 beta1 gamma delta. Thus, AuIB is a novel, selective probe for alpha3 beta4 nAChRs.
* LD50 for -conotoxin is 10 - 100ug/kg in laboratory mice.
* Mode of transmission: ingestion, parenteral, inoculation, skin and eye contamination, and droplet or aerosol exposure of mucous membranes are the primary hazards to laboratory and animal care personnel.
* Clinical manifestations: the onset of symptoms is almost immediate upon injection. Common symptoms include localized pain, swelling, numbness, and ischemia at the injection site. The numbness, swelling, and tingling may spread rapidly from the injection site to involve the entire body. Respiratory depression is a significant feature of conotoxin exposure. Death results from respiratory paralysis. Abdominal cramping and nausea are common effects.
* -conotoxins are select biological agents and require biosafety level2 containment (BSL2).
* Use personal protective equipment (PPE) as described in the associated SOP for Biological Toxins.

**References:**

* [*Alpha-conotoxins*, Arias HR and Blanton MP. Int J Biochem Cell Biol.; 32(10):1017-28, 2000](https://reader.elsevier.com/reader/sd/pii/S1357272500000510?token=603DFACEC1320662693C0C42107B2DE2B620482A91A2DD2C909742C6BE3943A2EF89C202FCB7AF7E1048FA264FA91203)
* [*Alpha-conotoxin AuIB selectively blocks alpha3 beta4 nicotinic acetylcholine receptors and nicotine-evoked norepinephrine release*, Luo S. et al. J Neurosci.;18(21):8571-9, 1998](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6793526/pdf/ns008571.pdf)
* Biosafety in Microbiological and Biomedical Laboratories-6th Edition (BMBL 6). U.S. Department of Health and Human Services, CDC, NIH (<https://www.cdc.gov/labs/pdf/CDC-BiosafetyMicrobiologicalBiomedicalLaboratories-2020-P.pdf>)
* [*Conotoxins: Potential Weapons from the Sea,* Anderson PD and Bokor G. , J Bioterr Biodef 2012, 3:3.](https://pdfs.semanticscholar.org/c058/d3408325b1934c8b2f4370bd07140ef0f028.pdf)

Enter the following information:

1. Name of the Principle Investigator: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_
2. Applicable IBC protocol number(s) (approved or submitted): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. List the laboratory work locations (Building/room[s]) for Influenza A, a BSL2 agent:

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

1. List the animal facility building/room(s) for Influenza A, ABSL2 containment:

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

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

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