

# UCSD Exposure Control Plan (ECP)

Name: Plasmodium Falciparum

BSL: 2

1. Mode of Transmission to Humans (e.g. inhalation, inoculation, mucous membrane exposure, etc.):

*Disease is most commonly transmitted to humans through a bite of an infected mosquito, specifically Anopheles mosquito, a dusk-to-dawn biter. In the lab, the parasite can be transmitted by accidental inoculation or contact with infected blood or by coming into contact with infected mosquitoes.*

2. Description of the Human Disease associated with this agent or vector (including instances of laboratory acquired infections):

*The incubation period in most cases varies from 7 to 30 days.*

*Symptoms of malaria include fever and flu-like illness, including shaking chills, headache, muscle aches, and tiredness. Nausea, vomiting, and diarrhea may also occur. Malaria may cause anemia and jaundice (yellow coloring of the skin and eyes) because of the loss of red blood cells. Infection with one type of malaria, Plasmodium falciparum, if not promptly treated, may cause kidney failure, seizures, mental confusion, coma, and death.*

*Most people, at the beginning of the disease, have fever, sweats, chills, headaches, malaise, muscles aches, nausea and vomiting. Malaria can very rapidly become a severe and life-threatening disease. The surest way for you and your health-care provider to know whether you have malaria is to have a diagnostic test where a drop of your blood is examined under the microscope for the presence of malaria parasites. If you are sick and there is any suspicion of malaria (for example, if you have recently traveled in a malaria-risk area) the test should be performed without delay.*

*There have been 34 laboratory acquired infections with Plasmodium (19 involving vectors and 15 lab accidents).*  
<http://cmr.asm.org/cgi/content/full/14/4/659>

3. Personnel Protection Required (minimum requirement):

	Laboratory	Vivarium		Laboratory	Vivarium
Safety Glasses	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Shoe Covers	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Lab Coat	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Face Shield	<input type="checkbox"/>	<input type="checkbox"/>
Gloves	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Cap/Head Cover	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Goggles	<input type="checkbox"/>	<input type="checkbox"/>	Mask	<input type="checkbox"/>	<input type="checkbox"/>
Disposable Gowns	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other - Describe:	<i>N-95 respirator is required for work with BSL-2 agents in animals outside a BSC</i>				

4. Engineering Controls (minimum requirement):

	Laboratory	Vivarium		Laboratory	Vivarium
Autoclave	<input type="checkbox"/>	<input type="checkbox"/>	Engineered Sharps Protection	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
BioSafety Cabinets	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Sharps Containers	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Closed Centrifuge Rotors	<input type="checkbox"/>	<input type="checkbox"/>	Closed Centrifuge Tubes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Other	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
Other - Describe:	<i>A Biosafety Cabinet must be used for all aerosolizing procedures and working with infected blood</i>				

5. Disposal Procedures:

*Liquids: add bleach to a final concentration of 10% bleach solution (Clorox or other bleach with Cal EPA registration number), let sit for 30 minutes, dispose of in sink (best while running water). Aspirator flasks: bleach is added to aspirator flasks initially so that the final concentration will be 10%. These must be emptied at least weekly.*

*Solids: disposed of in labeled, double red biohazard bags held in labeled, rigid, covered containers. Transport to biohazard collection area*

*in a closed rigid container for final disposal by EH&S. These must be emptied at least weekly.*

6. Disinfection Procedures:

*Surface: 10% household bleach solution made up fresh daily (Clorox or other bleach with Cal EPA registration number) allowing 5-minutes contact time.*

*OR*

*Surface: 75 ppm of CA EPA approved iodophor (e.g. Wescodyne) allowing 5-minutes contact time.*

7. Recommended/Required Vaccinations or other Medical Surveillance:

*The UCSD Center for Occupational and Environmental Medicine and the Institutional Biosafety Committee (IBC) do not recommend malaria prophylaxis for laboratory researchers unless a risk-benefit assessment and medical consult is completed. Malaria prophylaxis is generally only indicated for researchers traveling to areas where malaria is present, not for the laboratory research setting. Research staff interested in receiving prophylaxis or additional information should contact EHS/Occupational Health at 858-534-8225 to receive assessment and medical consult. Additional information about malaria prophylaxis is available on the Biosafety BLINK webpage/high risk biologic agents (<http://blink.ucsd.edu/safety/research-lab/biosafety/medical-consultation.html>) and the Centers For Disease Control webpage (<http://www.cdc.gov/malaria/>).*

*Website for clinicians treating malaria: [http://www.cdc.gov/malaria/diagnosis\\_treatment/tx\\_clinicians.htm](http://www.cdc.gov/malaria/diagnosis_treatment/tx_clinicians.htm)*

8. Employee Exposures- first aid procedures:

*a. Eye exposure from splash or aerosols - rinse a minimum of 15 minutes in eye wash or flush area with water.*

*b. Skin exposure - wash area with soap and water for 15 minute.*

*c. Needle stick and/or sharps exposure - wash wound area with soap and water for 15 minute.*

*d. Contamination of clothing - remove the contaminated clothing and place in biohazard bag, shower with the emergency douse shower, and put on clean clothes.*

*e. Spill or release - Monday through Friday, 8a - 4:30p call EH&S at (858-534-3660); after hours call UCSD Police (858-534-4357)*

9. Employee Exposure - seek medical follow-up from the following medical providers: (TAKE THIS ECP WITH YOU)

*Monday - Friday, 8a - 4:30p:*

*UCSD Occupational & Environmental Medicine, (619) 471-9210*

*24-hour walk-in service:*

*Thornton Hospital Emergency Room, (858) 657-7600*

*UCSD Medical Center (Hillcrest) Emergency Room, (619) 543-6400*

10. Report All Injuries, Illnesses, and Exposures to EH&S:

*Complete the information found on "What to Do if a Work-Related Injury or Illness Occurs" ([http://blink.ucsd.edu/Blink/External/Topics/How\\_To/0,1260,4295,00.html](http://blink.ucsd.edu/Blink/External/Topics/How_To/0,1260,4295,00.html))*

11. Required Biosafety Training:

*Laboratory specific training on hazards, exposure evaluations, and the required precautions for experimental procedures used with this agent - provided by Principal Investigator*