

STANDARD OPERATING PROCEDURE (SOP) Tuberculosis Protection in Research Environments

1. Scope

Tuberculosis is a zoonotic disease which is difficult to detect in nonhuman primates and spreads rapidly in nonhuman primate colonies. Due to the devastating consequences of tuberculosis for old world and new world nonhuman primates and associated research projects, special precautions are taken to reduce the risk that workers involved in the use and care of animals will infect non-human primates with *M. tuberculosis*.

University of Pittsburgh research facilities, which utilize *M. tuberculosis* organisms, or specimens **known to** contain *M. tuberculosis*, operate at Biosafety Level 3 (BSL-3) in accordance with current CDC/NIH guidelines published in the latest edition of *Biosafety in Microbiological and Biomedical Laboratories and Recombinant DNA Guidelines*.

2. Procedure

2.1 Agent- Mycobacterium tuberculosis

2.2 Individuals at risk- All individuals (including visitors) entering areas where non-human primates are housed or utilized are at risk of acquiring *M. tuberculosis* infection and pose a risk of transmitting *M. tuberculosis* to a non-human primate. All individuals utilizing non-fixed primary tissue from non-human primates and all individuals authorized to enter research facilities that utilize *M. tuberculosis* or specimens that potentially contain *M. tuberculosis* are at potential risk for *M. tuberculosis* infection.

2.3 All participants shall undergo baseline screening for *M. tuberculosis* exposure upon hire or upon enrollment in the University Animal Exposure Surveillance Program.

2.3.1 If the participant has a history of a previous positive reaction to a tuberculin skin test, further skin testing is not performed.

2.3.1.1 A Tuberculosis Health Questionnaire is administered and the completed form is filed in the employee's medical record.

2.3.1.2 A chest radiograph is obtained if:

- a. the employee cannot provide documentation of a normal chest radiograph following the discovery of the positive reaction, or
- b. the employee's responses to the questions suggest active pulmonary tuberculosis, or
- c. the employee did not receive appropriate chemoprophylaxis or treatment, as determined by the University's Employee Medical Director.

2.3.1.3 If there is no clinical or radiographic evidence of active pulmonary disease, the employee is medically restricted from entering areas where live nonhuman primates are housed or utilized until there has been a medical evaluation to consider both the likelihood that the reaction indicates a true infection and the estimated risk for progression from latent to active tuberculosis, or appropriate medical treatment has been initiated. While on treatment, the individual will be monitored by Employee Health for adherence to the treatment regimen. These individuals will not be allowed to enter non-human primate areas until cleared by the Employee Medical Director. Consultation with the DLAR director, Principal Investigator, Animal Facility Director and EH&S will occur, as necessary, to assist in the evaluation of specific cases. If a consensus cannot be reached among these individuals, the final decision will rest with the Employee Medical Director.

2.3.1.4 If there is clinical or radiographic evidence of active pulmonary tuberculosis, the employee is medically restricted. This restriction is not removed until the individual provides documentation establishing that the clinical or radiographic findings can reasonably be attributed to a condition other than active pulmonary tuberculosis. The worker is not cleared to return to any University work place until the

University Employee Medical Director is reasonably convinced that the individual does not represent a health risk.

2.3.2 Participants who do not have a history of a prior positive reaction to a tuberculin skin test will receive a "two-step" tuberculin skin test (Purified Protein Derivative, PPD test) on enrollment in the Animal Exposure Surveillance Program. The second tuberculin test should be given 1-3 weeks after the first. If the participant has documented negative PPD tests within the previous 12 months, only a single tuberculin skin test is administered. The two-step test is not required for visitors to the facility (i.e. regulatory agencies, unique maintenance, etc). (Note: Persons who have received Bacillus Calmette-Guerin (BCG) immunization will be given PPD tests. Interpretation of a reaction will be based upon the size of the reaction, length of time since BCG administration, and risk of prior exposure to tuberculosis.)

2.3.2.1 If the first tuberculin skin test is positive, a medical history is obtained for symptoms suggestive of active pulmonary tuberculosis and a chest radiograph is obtained. The participant may also be referred to the Allegheny County Health Department for follow-up, per the discretion of the University Employee Medical Director.

- a. If there is no clinical or radiographic evidence of active pulmonary disease, the employee is evaluated as described in 2.3.1.3 .
- b. If there is clinical or radiographic evidence of active pulmonary tuberculosis, the employee is evaluated as described in 2.3.1.4.
- c. If the medical recommendation is that the employee not enter areas with live nonhuman primates or not return to work at the University, the employee, supervisor, and Human Resources are notified the day the decision is reached.

2.3.2.2 If the initial tuberculin skin test is negative and the second test is positive during the 2-step procedure, the response is indicative of a prior infection (booster phenomenon). Such individuals undergo evaluation as indicated under 2.3.1 above

2.3.2.3 If the tuberculin skin tests are both negative and there are no other medical contraindications, the employee is medically cleared for work.

2.4 All participants shall undergo periodic tuberculin skin testing or medical screening for active tuberculosis infection every six months.

2.4.1 If the prior tuberculin skin test was negative, but the current test indicates positive, this is considered a recent conversion and the individual will undergo evaluation as indicated under 2.3.1 above.

2.4.2 If the prior tuberculin skin test was positive, the employee will be sent an informational TB health review with a letter asking the worker if he or she has any symptoms suggestive of active tuberculosis. The form must be completed and signed by the participant and submitted to Employee Health Services every six months.

3. Implementation

Individuals refusing tuberculin skin testing, declining the recommended clinical treatment, or failing to submit a completed TB health review form shall be prohibited from entering non-human primate areas or BSL-3 M. tuberculosis research labs.

3.1 The DLAR supervisor, Animal Facility Director, and/or the Principal Investigator's designee are responsible to verify current TB status of all entrants (including all visitors) into non-human primate areas or an M. tuberculosis lab under their control.

3.2 Individuals who manipulate non-fixed primary tissue from non-human primates AND who refuse tuberculin skin testing or fail to submit a completed TB health review form will be reported to the Principal Investigator(s) for the active research protocol. The individual's name will be removed from the protocol or protocol approval/renewal will be denied until compliance is achieved.

4. Approval

The University of Pittsburgh's Biohazards Committee and EH&S have reviewed and approved this SOP as attested by the signatures of the Committee Chairperson and the Biosafety Officer.

Committee Chairperson

Date

Biosafety Officer

Date