



Laboratory Methods for Detecting Rabies Virus

February 5-9, 2017  CDC, Atlanta, GA

Sponsored by the National Laboratory Training Network *in collaboration with* the Division of High-Consequence Pathogens and Pathology, Centers for Disease Control and Prevention

DESCRIPTION

Designed for individuals performing rabies testing in public health laboratories, this four and one-half day workshop addresses traditional rabies testing techniques, safety in the rabies laboratory, specimen acquisition and preparation, rabies quality control and proficiency testing, standardized testing procedures, emerging technologies, and epidemiologic issues.

OBJECTIVES

At the conclusion of this program, the participant will be able to:

- Describe the basic properties of the rabies virus, its transmission, and disease course as well as relevant epidemiology of rabies in the United States.
- Assess the critical role of the rabies laboratory in terms of diagnostic capability and the interpretation of laboratory results as well as prevention and control of rabies in humans and animals.
- Recommend safe practices for those working in rabies diagnosis or shipping laboratory specimens.
- Identify and prepare appropriate specimens for rabies diagnosis.
- Review the importance of standardized DFA testing according to the national protocol.
- Demonstrate proficiency in observing DFA slides, detecting rabies virus antigen when present, and correctly interpreting difficult test results with sparse antigen or non-specific staining.
- Summarize quality control and quality assurance procedures for the rabies diagnostic laboratory.

AUDIENCE

This advanced-level workshop is designed for the public health microbiologists with responsibilities for bench testing or supervising the rabies laboratory. Participants must be familiar with the general methods for safe handling of infectious viruses.

CONTINUING EDUCATION

The Association of Public Health Laboratories (APHL) is approved as a provider of continuing education programs in the clinical laboratory sciences by the ASCLS P.A.C.E.® Program. Participants who successfully complete this program will be awarded 34 contact hours. Event Number: 588-100-18.

LOCATION

Centers for Disease Control and Prevention Atlanta, GA

APPLICATION

Application Deadline: November 1, 2017

- **The preliminary application is to be completed online at <https://www.surveymonkey.com/r/100-18RabiesApp>.**
- Only completed applications received by the deadline will be considered. Application does not guarantee acceptance.
- If you are unable to complete the application online, email Marisa Barley at marisa.barley@aphl.org or phone +1 240.485.3843.
- Participants will be selected according to the degree to which the applicant's job description, experience, and responsibilities are consistent with the workshop objectives.
- Notification of acceptance status will be sent via email after November 13, 2017.
- **Requirement: Applicants must fax proof of rabies immune status prior to the application deadline to APHL at +1 888.242.5619 in order for application to be considered.**

REGISTRATION

- **Fee: Free Registration!**
- Registration and logistical details will be provided upon acceptance into the course.
- It is important to start the travel approval process (without making any non-refundable travel plans) with your state or local agency as soon as possible. Do not make any non-refundable travel arrangements until you are notified of acceptance into the course.
- Participants are responsible for all lodging, meals, and travel costs.

SPECIAL NEEDS

In compliance with the Americans with Disabilities Act (ADA), individuals seeking special accommodations should submit their request in writing at least three weeks prior to start date of the workshop to Marisa Barley, APHL Customer Support. For more information phone +1 800.536.6586 or +1 240.485.3843.

QUESTIONS?

Please email Marisa Barley, APHL Customer Support.

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The National Laboratory Training Network is a training system sponsored by the Association of Public Health Laboratories (APHL) and the Centers for Disease Control and Prevention (CDC).

For a complete list of courses, visit <https://www.aphl.org/training>.



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PRELIMINARY AGENDA *15 minute breaks included daily in a.m. and p.m.*

Day 1 Monday, February 5, 2018

- 7:30 a.m. Welcome and Course Overview
7:45 Safety in the Training Lab
8:00 Pre-Test
8:20 **Lecture:** Rabies Direct Fluorescent Antibody Test (DFA):
Need for a Standardized Testing Procedure in the US
8:50 **Lecture:** Basic Rabies Pathogenesis
9:10 **Lecture:** Safety in the Rabies Laboratory, Shipping
Guidelines
9:40 **Video:** Removal of Brains from Animals for Rabies
Diagnosis
10:15 **Lecture:** Lab Instructions
10:45 **Laboratory:** Dissection of Brain Tissues, Preparation of
Slides
Demonstration: Removal of Brains from Foreman
Magnum
12:30 p.m. Lunch (on your own in CDC cafeteria)
1:30 **Lecture:** DFA National Standard Protocol
2:00 **Lecture:** Fluorescence Microscopy: Basic Principles,
Selection, Use and Preventive Maintenance
2:30 **Laboratory:** Demonstration of Basic Microscope
Orientation, Safe Replacement and Alignment of a
Microscope Lamp
3:00 **Laboratory:** Observe Pre-Stained DFA's on Brain
Impression Slides: Strong Positive, Negative and Weak
Positive Slides
Proficiency Challenge 1: Anatomical Identification of
Brain Tissues, Evaluation of Slides for Testing
4:30 Group Discussion
5:00 Adjourn

Day 2 Tuesday, February 6, 2018

- 8:00 a.m. **Lecture:** Lab Instructions
8:30 **Laboratory:** Perform DFA Tests on Slides Prepared the
Previous Day, Unknowns, Observation of DFA Test Slides
11:00 **Lecture:** Confirmatory DFA Repeat Testing
11:30 **Lecture:** Trouble Shooting DFA Tests: Staining,
Mounting, Reading, and Interpretation
12:00 p.m. Lunch (on your own at a CDC cafeteria)
1:00 **Lecture:** Lab Instructions
1:30 **Laboratory:** Perform Confirmatory DFA on Unknown
Slides, Observe Confirmatory DFA Test Slides
Proficiency Challenge 2: Interpretation of DFA Slides
4:00 **Lecture:** Quality Assurance, Rabies Proficiency Testing
(PT), Personnel Training for Competency
4:30 Group Discussion
5:00 Adjourn

Day 3 Wednesday, February 7, 2018

- 8:00 a.m. **Lecture:** Direct Rapid Immunohistochemistry Future
Confirmatory Test (DRIT)
8:30 **Laboratory:** DRIT Confirmatory Test
11:00 **Laboratory:** Observe DRIT Slides
11:30 **Lecture:** Conjugate Titration
12:00 p.m. Lunch (on your own at a CDC cafeteria)
1:00 **Lecture:** Lab Instructions, Conjugate Titration
1:30 **Laboratory:** Conjugate Titration
Proficiency Challenge 3: DRIT Slides, Confirmatory DFA
4:30 Group Discussion
5:00 Adjourn

Day 4 Thursday, February 8, 2018

- 8:00 a.m. **Lecture:** Bat Identification
8:30 **Laboratory:** Bat Identification, Observe and Discuss DFA
and DRIT Slides Previously Tested, and PT Test Slides
10:30 **Lecture:** Antigenic Typing
11:00 **Lecture:** RT-PCR
11:30 **Lecture:** Molecular Epidemiology of Rabies Virus
12:00 p.m. Lunch (on your own at a CDC cafeteria)
1:00 **Lecture:** Lab Instructions, Antigenic Typing
1:15 **Laboratory:** Antigenic Typing of Unknown Samples,
Observe Unknown/Known Antigenic Typing Test Slides
Proficiency Challenge 4: Bat Identification
4:30 Group Discussion
5:00 Adjourn

Day 5 Friday, February 9, 2018

- 8:00 a.m. **Lecture:** Lab Instructions, PT, Post-Test
9:00 **Lecture:** Clinical Aspects of Rabies in Humans and
Human Diagnosis
9:30 **Lecture:** Pre and Post-Exposure Prophylaxis Issues
10:00 **Lecture:** Rabies Surveillance in the USA
11:00 Final Group Discussion
11:45 Evaluation
12:00 p.m. Adjourn

FACULTY

Poxvirus and Rabies Branch, Division of High-Consequence Pathogens and Pathology, National Center for Emerging and Zoonotic Infectious Diseases, CDC, Atlanta, GA

- James A. Ellison, PhD, Microbiologist
Yu Li, PhD, Molecular Diagnostic Team Lead
Michael Niezgod, MS, Microbiologist
Lillian A. Orciari, MT, MS, Microbiologist
S. Sathesh Panayampalli, PhD, Immunodiagnosics Team Lead
Brett W. Peterson, MPH, MD, Medical Officer
Andres Velasco-Villa, PhD, Associate Service Fellow
Pamela Yager, BS, Public Health Laboratory Technologist
Crystal Gigante, PhD, Oak Ridge Inst for Science & Education (ORISE)

Specimen Management Branch, Division of Scientific Resources, National Center for Emerging and Zoonotic Infectious Diseases, CDC Atlanta, GA

- Yvonne Stifel, BS, Biologist

INVITED FACULTY

Wisconsin State Laboratory of Hygiene, Madison, WI

- James Powell, MS, Senior Microbiologist, Rabies Unit

NOTE *SECURITY CLEARANCE REQUIREMENTS

NON-US CITIZENS - This course will be held at the CDC Roybal campus. Due to CDC requirements for security clearance, all non-US citizens will be asked to provide information needed to obtain clearance, which will only be used for the purposes of attending this course. Detailed instructions will be provided upon acceptance into the course. Please do not make any nonrefundable travel plans until you have received confirmation of acceptance into the course and security clearance approval.

US CITIZENS - If you are a US CITIZEN there is no extra clearance process required.