

Researchers to study lyme-like illness in Texas

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Tao Lin, D.V.M., and Steven J. Norris, Ph.D., both with the Department of Pathology and Laboratory Medicine at The University of Texas Medical School at Houston, have been named grant recipients of the Norman Hackerman Advanced Research Program (ARP) by the Texas Higher Education Coordinating Board. They will receive \$150,000 over two years to support their research into conflicting reports about the infectious nature and causative agent of Southern-Tick Associated Rash Illness (STARI) in Texas and other southern states.

Tick-transmitted Lyme disease is a bacterial infection common in northeastern, north central, mid-Atlantic seaboard and Pacific coastal states. In 2006, 19,931 cases of Lyme disease were reported yielding a national average of 8.2 cases per 100,000 persons, according to the Centers for Disease Control and Prevention. Typical Lyme disease symptoms include fever, headache, fatigue and a characteristic skin rash called erythema migrans. If left untreated, infection can spread to joints, the heart and the nervous system.

Patients with STARI, a condition found in southeastern and south central U.S., have a bullseye-shaped rash that is virtually identical to the erythema migrans lesion of Lyme disease. However, no one has been able to detect the spiral-shaped bacteria that cause Lyme disease (called *Borrelia burgdorferi*) in patients, animals or ticks from Texas or nearby states.

In this project, Lin and Norris will apply innovative approaches to identify organisms associated with STARI in Texas and other states within the south central United States. They will use techniques such as DNA amplification methods, high throughput DNA sequencing and novel culture media and conditions in an attempt to identify and culture *Borrelia* from ticks and patients' tissues. These approaches are aimed at identifying the organism(s) causing STARI in Texas and may

permit the design of specific diagnostic tests and effective therapies, thus resolving the current dilemma faced by physicians and patients when confronted with this disease syndrome.

Lin, the principal investigator on the ARP grant, is an assistant professor of laboratory medicine and pathology and has studied Lyme disease and other infectious diseases for more than 20 years. Lin and his co-workers have isolated and characterized 224 *Borrelia* strains from five tick species and four species of rodents carrying the disease.

Norris is vice chair for research and holder of the Robert Greer Professorship in the Biomedical Sciences. He is also on the faculty of the UT Medical School's Department of Microbiology and Molecular Genetics, as well as The University of Texas Graduate School of Biomedical Sciences at Houston. He is a pioneer in the research of Lyme disease, syphilis and other infectious diseases.

Lin and Norris will collaborate with Pete Teel, Ph.D. Teel is a professor and associate department head at the Texas A&M University Department of Entomology and is an expert in environmental factors affecting tick populations in Texas and other regions. Edwin Masters, M.D., a physician who has studied STARI in Missouri for over 15 years, will also provide valuable patient specimens and information.

Source: University of Texas at Houston

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