

CONTRIBUTION OF *AGROBACTERIUM* TO MORGELLONS DISEASE. RB Stricker*†, VR Savely†, A Zaltsman**, V Citovsky**. *California Pacific Medical Center, San Francisco, CA; †International Lyme & Associated Diseases Society, Bethesda, MD; **State University of New York, Stony Brook, NY.

Background: Morgellons disease is characterized by dysesthesias and dermatologic lesions that range from minor to disfiguring (Savely VR, Leitao MM, Stricker RB. *Am J Clin Dermatol* 2006;7:1-5). The disease has been reported primarily in Florida, Texas and California. Although an infectious etiology of Morgellons disease has been postulated, treatment of the disease remains problematic, with many patients having inadequate responses to antimicrobial therapy. Skin biopsies of Morgellons patients reveal non-specific pathology or an inflammatory process with no observable pathogens, often with fibrous material projecting from inflamed epidermal tissue. Morgellons skin fibers appear to contain cellulose. This observation indicates possible involvement of pathogenic *Agrobacterium*, which is known to produce cellulose fibers at infection sites within host tissues. Methods: Skin biopsy samples from two Morgellons patients were subjected to high-stringency PCR testing for genes encoded by the *Agrobacterium* chromosome. Screening of the same samples for *Agrobacterium* virulence (*vir*) genes and T-DNA sequences in the patient's genome was also performed. Results: PCR screening indicated the presence of *Agrobacterium* genes derived both from the chromosome and from the Ti plasmid, including the T-DNA, in tissues from both Morgellons patients. Conclusions: Our preliminary results indicate that *Agrobacterium* may be involved in the etiology and/or progression of Morgellons disease. If these results are confirmed, it would be the first example of a plant-infecting bacterium playing a role in human disease. Further testing is ongoing to validate this observation and to determine whether *Agrobacterium* not only resides in the infected areas, but also transforms them genetically.