THE SEROLOGICAL RELATIONSHIP BETWEEN COWDRIA RUMINANTIUM AND CERTAIN MEMBERS OF THE GENUS EHRlichIA

C. J. HOLLAND(1), L. L. LOGAN(2), C. A. MEBUS(3) and M. RISTIC(1)

ABSTRACT


Although Cowdria ruminantium has been classified within the tribe Ehrlichia of the family Rickettsiaceae, there has been no extensive study conducted regarding its antigenic relationship to members of the genus Ehrlichia, or other rickettsial agents. The recent establishment of a method by one of us (L. L. Logan) for obtaining C. ruminantium antigens from primary neutrophil cultures for use in a serological test has enabled the comparison of 4 isolates of C. ruminantium with 4 Ehrlichia spp., 9 Rickettsia spp., 2 Rochalimaea spp., Coxiella burnetii and Anaplasma marginale. Using the respective IFA test antigens, all 4 isolates of C. ruminantium were shown to cross-react very strongly with Ehrlichia equi, causative agent of equine ehrlichiosis in the United States and Europe and, to a lesser degree, with Ehrlichia canis, the aetiological agent of canine ehrlichiosis. No relationship was found between C. ruminantium and E. risticii, E. sennetsu, Rickettsia spp., Coxiella burnetii or Anaplasma marginale. The strong association between C. ruminantium and E. equi, with respect to host-cell predilection (neutrophils), morphology and serological cross-reactivity is of major scientific and epidemiological importance, especially since E. equi has been experimentally shown to infect sheep and goats. The morphological and host similarity between C. ruminantium, E. equi and two additional members of the genus Ehrlichia, E. phagocytophilia and E. ondiri, leads us to suspect that all 4 agents may be antigenically related.

(1) Department of Veterinary Pathobiology, College of Veterinary Medicine, University of Illinois, Urbana, IL, USA 60801
(2) Department of Pathology, School of Veterinary Medicine, University of California, Davis, CA, USA 95616
(3) United States Department of Agriculture, Agricultural Research Service, Plum Island Animal Disease Center, P.O. Box 848, Greenport, NY, USA 11944
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