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## Experimental infection of the mouse brain by a relapsing fever *Borrelia* species: a molecular analysis.

[Cadavid D](#), [Bundoc V](#), [Barbour AG](#).

Department of Microbiology, University of Texas Health Science Center, San Antonio 78284-7758.

The spirochetal disease relapsing fever is notable not only for multiphasic antigenic variation but

also for central neurologic manifestations. To further characterize involvement of the brain in this disorder, immunocompetent and -deficient mice were infected with *Borrelia hermsii*. Immunodeficient mice were treated while spirochetemic with neutralizing IgM monoclonal antibodies to the infecting serotype. Blood, cerebrospinal fluid, and brain tissue were examined by culture and polymerase chain reaction. In immunocompetent mice, antigenic variation occurred in the brain as well as in the blood. In immunodeficient mice, the infecting serotype was still present in the brain after it had been eliminated from the blood by the administered antibodies. These latter results cannot be accounted for by contamination of brain tissue and cerebrospinal fluid by blood and, hence, establish the direct involvement of the central nervous system in this experimental infection.

PMID: 8515101 [PubMed - indexed for MEDLINE]

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