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1: [Neurobiol Aging](#). 2006 Feb; 27(2): 228-36.



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Beta-amyloid deposition and Alzheimer's type changes induced by *Borrelia spirochetes*.

[Miklossy J](#), [Kis A](#), [Radenovic A](#), [Miller L](#), [Forro L](#), [Martins R](#), [Reiss K](#), [Darbinian N](#), [Darekar P](#), [Mihaly L](#), [Khalili K](#).

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The pathological hallmarks of Alzheimer's disease (AD) consist of beta-amyloid plaques and neurofibrillary tangles in affected brain areas. The processes, which drive this host reaction are unknown. To determine whether an analogous host reaction to that occurring in AD could be induced by

infectious agents, we exposed mammalian glial and neuronal cells in vitro to *Borrelia burgdorferi* spirochetes and to the inflammatory bacterial lipopolysaccharide (LPS). Morphological changes analogous to the amyloid deposits of AD brain were observed following 2-8 weeks of exposure to the spirochetes. Increased levels of beta-amyloid precursor protein (AbetaPP) and hyperphosphorylated tau were also detected by Western blots of extracts of cultured cells that had been treated with spirochetes or LPS. These observations indicate that, by exposure to bacteria or to their toxic products, host responses similar in nature to those observed in AD may be induced.
PMID: 15894409 [PubMed - indexed for MEDLINE]

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[J Alzheimers Dis. 2004]

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[J Neuroinflammation. 2008]

- ▶ [\[Alzheimer disease: cellular and molecular aspects\]](#)
[Bull Mem Acad R Med Belg. 2005]

- ▶ [Review](#) [Chronic inflammation and amyloidogenesis in Alzheimer's disease -- role of Spirochetes.](#)
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