Tick-host-Borrelia interaction

Implications for host immunity and vaccination strategies

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Propositions based on this thesis:

1. DNA vaccination by intradermal tattoo can protect against *Borrelia afzelii* infection

2. Vaccination against Bm86 homologues does not impair feeding by *Ixodes ricinus*

3. *Ixodes ricinus* salivary proteins can aid *Borrelia burgdorferi* sensu lato to survive at the tick bite site

4. *Borrelia miyamotoi* and *Borrelia burgdorferi* sensu lato have similar vectors, geographic endemicity, risk groups, morphologic appearance and therapies, and although the clinical presentation is distinct, serologic cross-reactivity might occur

5. *Borrelia miyamotoi* infections are currently missed due to a lack of awareness; Diagnostic tests and a prospective clinical study in patients with fever after a tick bite should be performed to assess the incidence of *B. miyamotoi* infection

6. *Borrelia miyamotoi* is able to infect humans due to its resistance to human complement, and relapses can occur due to expression of variable major proteins.

7. Variable major proteins are immunogenic in humans, and might be used to improve serologic diagnosis of *Borrelia miyamotoi* infection