Reviewer's report

Title: Characterisation of silent and active genes for a variable large protein of Borrelia recurrentis

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Reviewer: Dr Brian Stevenson

Level of interest: A paper of considerable general medical or scientific interest

Advice on publication: Accept after discretionary revisions

This report by Vidal et al. describes characterization of an expressed vlp locus and the homologous silent locus of Borrelia recurrentis. This represents the first such report, and is an important contribution toward understanding this pathogen.

I have only one major comment. Since a potential transcription promoter sequence was found 5’ of the silent gene, the authors propose that B. recurrentis possesses a mechanism to specifically silence such genes. However, B. recurrentis is a very A+T rich organism, so sequences similar to E. coli promoters are likely to be abundant. Also, identification of promoter elements is based on the assumption that B. recurrentis RNA polymerase recognizes DNA sequences identical to those recognized by the E. coli enzyme. The authors should consider the possibility that the proposed silent gene promoter is not actually recognized as a functional promoter by B. recurrentis.

One minor comment: The second paragraph of the background section begins "In the early part of this century..." I believe the authors actually mean the last century (20th), especially as they cite references from the 1900s.

Competing interests:

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