Reviewer's report

Title: Characterisation and analysis of thioredoxin peroxidase as a potential antigen for the serodiagnosis of sarcoptic mange in rabbits by dot-ELISA

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Reviewer: Wanpen Chaicumpa

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BMC Infectious Diseases

My Opinion on manuscript: “Characterisation and analysis of thioredoxin peroxidase as a potential antigen for the serodiagnosis of sarcoptic mange in rabbits by dot-ELISA”

By

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The manuscript described production of Sarcoptes scabiei recombinant thioredoxin peroxidase (rSsTPx), production of rabbit polyclonal antibody to the rSsTPx for in situ localization of the protein in the mite and a development of dot-ELISA for serodiagnosis of scabies in naturally and experimentally infected rabbits compared with the non-infected control, using the rSsTPx as an antigen.

General comments

Although no new technology is used in this study, the work gives background information on the S. scabiei TPx including the coding sequence and anatomical localization of the protein. The so-developed dot-ELISA may be useful for developing areas that lack equipment like ELISA reader, PCR machine, etc.

Major Compulsory Revisions

1. Attempt should be made to identify the deduced SsTPx amino acid sequence shared with the P. cuniculi which is absent in other organisms that did not give cross-reactivity with the SsTPx, at least by multiple alignments

2. More details on evaluation of the stability of the antigen dotted strips; how were they evaluated; how were the strips kept; at what temperature?

3. Discussion should include existing serological techniques used currently for diagnosis of S. scabiei infections in humans.

4. The assumption that the recombinant SsTPx is an outer membrane protein is inappropriate.

Minor Essential Revisions

1. Typing errors should be corrected, e.g., S. Scabiei should be S. scabiei, EcoRI
and HindIII should be italicized correctly, OD600 should be OD600 nm
2. References should be re-checked; scientific names should be italicized
3. English should be revised.

Discretionary Revisions
1. The SsTpx sequence should be deposited in the GenBank database.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I have no competing interests in relation to the paper I have reviewed