Reviewer's report

Title: Storage and stability of IgG and IgM monoclonal antibodies dried on filter paper and utility in Neisseria meningitidis serotyping by Dot-blot ELISA

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Reviewer: Joanne V Mei

Reviewer's report:

General
1) The paper needs a considerable amount of editing. There are many words and expressions that are wrong, e.g. "titles" for "titers"; "spermatant" for "supernatant" and many other misspellings and grammatical errors.
2) The Whatman 3MM product is a blotting paper not a filter paper; the type of 3MM paper is not mentioned anywhere in the paper.
3) The authors make comparisons to using filter paper to collect dried blood spots - they need to qualify their statements. The filter paper for dried blood spots is an FDA-approved blood collection device that follows a clinical laboratory standard for performance (Whatman Grade 903 paper). Are the authors using blotting paper or filter paper?
4) The authors seem to feel that blotting paper and filter paper are interchangeable - the two may perform in a similar capacity to stabilize protein and biomarkers for transport and storage, however filter paper can be used for analytical measurements as medical devices; blotting papers cannot make that claim. The authors need to remove "filter paper" if the application they are discussing used "blotting paper".
5) Grammatical errors in sentence structure are very numerous and impact the meaning of the text.

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

Abstract
1) The authors are using blotting paper, not filter paper in this application. There is a big difference in performance and applications. The term “filter paper” needs to be replaced with “blotting paper” as stated above.
2) Conclusions are difficult to understand – I cannot understand the last 2 sentences.

Introduction
1) Replace “filter paper” with “blotting paper” throughout.
2) Paragraph 4 – what is a “simple paper smear”? How do you reproduce a paper smear?
3) Paragraph 4 – last sentence – what does “so as well like a long time of stock of the dry papers frozen Mabs” mean?
4) Paragraph 5 - the authors are confusing the filter paper FDA-approved collection device with blotting paper.

Materials and Methods
1) The authors mix in some results and discussion into the materials and methods section.
2) What type of blotting paper is being used? Nowhere in the manuscript is the blotting paper or its source described.
3) How are “paper smears” prepared? How much volume is applied to the blotting paper and how is it applied? Drying blot spots at 37°C for 4 hours seems excessive. Is this a standard protocol?
4) How were dilutions of Mabs prepared?
5) Reconstitution of sample from “filter paper”?
a. What kind of filter paper was used to collect the blood? If Grade 903 (FDA-approved), a 1 cm circle of whole blood would soak up almost all of 0.2 mL of buffer. The eluate would be supersaturated with whole blood. How much of the whole blood supernatant was applied to the dot blot ELISA? A 1 cm circle on Grade 903 paper is the equivalent to about a 100 uL volume of whole blood. This is a huge amount of sample to be analyzing. Of course, if Grade 903 paper was not used, it is impossible to tell what the sample volume is, since the authors have not defined the type(s) of paper(s) being used.
6) Tables 2-6 – are these the maximum Mab dilutions that showed positive results for the different storage
Results and Discussion
1) Very difficult to understand; lack of experimental detail prevents this reviewer from being able to effectively evaluate the results section.
2) The manuscript seems to have some merit, but because of the confusion between filter paper and blotting paper for, it is not possible to verify that the conclusions.
3) Other labs will not be able to reproduce the experiments because of the lack of detail in the Material and Methods section and confusion about the types of papers used.

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

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

Quality of written English: Not suitable for publication unless extensively edited

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
I declare that I have no competing interests.