Reviewer’s report

Title: BasePhasing: a highly efficient approach for preimplantation genetic haplotyping in clinical application of balanced translocation carriers

Version: 1 Date: 06 Feb 2019

Reviewer: Yanwen Xu

Reviewer’s report:

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Please overwrite this text when adding your comments to the authors.

1. Line 29-33. Please state clearly that "The 5.3Mbp deletion was detected positively" in DNA products of what kind of cells.

2. In discussion, authors stated that "8/9 of the gametes would be abnormal in couples with a reciprocal translocation, and 2/3 with a Robertsonian translocation", which is not accurate, for the proportions of abnormal gametes is not in accordance with theoretical segregation modes. Some segregation modes could not produce viable gametes.

3. In discussion, authors stated that "Second, precise translocation breakpoint location and personalized design was unnecessary, our method was universal for any kind of translocation.". It should be more cautious for precise translocation breakpoint location will increase the accuracy of PGT. Meanwhile, authors stated that "Therefore, one limitation of our research was that the method didn't apply to these patients both with de novo translocation and without an unbalanced embryo. To our knowledge, no current methods could overcome this difficulty.". But, at least MicroSeq-PGD could apply to the patient without a reference. And I was wondering whether recombination may bring any risk of misdiagnosis, since the nature of this method was indirect testing.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**

If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

Not relevant to this manuscript

**Quality of written English**

Please indicate the quality of language in the manuscript:

Needs some language corrections before being published

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