Reviewer’s report

Title: HLA and proteasome expression body map

Version: 0  Date: 01 Sep 2017

Reviewer: Ting Ni

Reviewer’s report:

The authors performed a tailored seq2HLA method to quantify expression of HLA and proteasome related genes in a large sample size (4340 public RNA-seq datasets). In addition to provide a rich resource for the community, they found class I and II HLA genes are highly expressed in lymphatic tissues while less expressed in immune privileged organs. They also found distinct expression pattern of two types of proteasomes: the constitutive proteasome is expressed ubiquitously while the immunoproteasome is enriched in tissues of the lymphatic system and almost absent in immune privileged organs. Such study provides rich resource and knowledge in the field. However, a few points need to be addressed before the consideration of publication.

1. There are quite some methods for normalization of RNA-seq data especially for data from diverse tissues and cells, since batch effect and expression distribution will significantly affect the conclusion of expression difference. In this manuscript, only rpkm was used. More data normalization methods (such as Quantile, Relative Abundance and ComBat) need to be applied to validate the reproducibility of the conclusion, although only HLA and proteasome related genes are considered.

2. Page 4, line 47, when mention "clearly enriched", a test model and p value need to be included.

3. Page 5, line 48. "Observed d in B cells", I guess "d" needs to be deleted.

4. Page 8, line 56-60. It would be nice if additional analysis can be performed to confirm whether expression of CIITA is correlated with the expression of HLA genes.

5. Page 9, line 42-44. There is no figure S6 in the supplemental materials. The number needs to be corrected. Please also check the figure number through the manuscript.

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.

No

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.

I am able to assess the statistics

Quality of written English
Please indicate the quality of language in the manuscript:

Acceptable

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