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Receipt of reviewer's report for SREP-15-21934

1 message

scientificreports@nature.com <scientificreports@nature.com> Sat, Aug 8, 2015 at 1:09 AM
Reply-To: scientificreports@nature.com
To: scguo@ucsd.edu

Dear Dr. Guo,

Many thanks for submitting your referee report on "Epidemiological correlation between cancer risk and tumor genomic mutation rate confirms the predominant contribution of somatic mutation" by Prof Di. We appreciate the time you have taken to review this manuscript for Scientific Reports. A copy of this report is attached below for your reference.

Best regards,

Manuscript Administration
Scientific Reports
4 Crinan Street
London N1 9XW
E-mail: scientificreports@nature.com

Is the manuscript technically sound?: Yes

Could the manuscript become technically sound with revision?: Yes

Are the conclusions supported by the evidence presented?: Yes

Are additional experiments or data required to support the conclusions?: No

Does the manuscript only duplicate previous work?: No

Appropriate use of statistics and treatment of uncertainties?: No

References: appropriate credit given to previous work?: Yes

Is the manuscript written clearly using Standard English?: Yes

Electrophoretic gels and blots are presented clearly and are free from apparent manipulation?: N/A

Technical Comments to the Author:

Recommendation: Minor Revision

Remarks to the Editor:
In the present study, Dapeng Hao and his colleagues investigated the correlation between cancer risk and tumor genomic mutation rate and provided an important evidence of the predominant contribution of somatic mutation to cancer risk. This study is a critical and prompt response to the recent paper published on the journal of

Science few month ago. The authors collected huge number of genome-wide or exon-sequence data from 5,542 cancer samples throughout 41 different cancer types. The authors found the revised Armitage-Doll model can interpret the relationship between mutation counts and cancer risk with high accuracy. The study was performed rigorously and the findings are very interesting. In general, I'd recommend publication if the authors can address the following concerns.

Remarks to the Author:
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In the present study, Dapeng Hao and his colleagues investigated the correlation between cancer risk and tumor genomic mutation rate and provided an important evidence of the predominant contribution of somatic mutation to cancer risk. This study is a critical and prompt response to the recent paper published on the journal of Science few month ago. The authors collected huge number of genome-wide or exon-sequence data from 5,542 cancer samples throughout 41 different cancer types. The authors found the revised Armitage-Doll model can interpret the relationship between mutation counts and cancer risk with high accuracy. The study was performed rigorously and the findings are very interesting.

Maor Essential Revisions
1, What would happen if the number of the stem cell divisions was adjusted in the models?

Minor Essential Revisions
1, In the section of "Robustness Analysis", the distribution of Pearson, Spearman and corresponding P-value in the 10,000 iterations should be provided in the supplementary.
2, The influence of the variation in the estimation of lifetime risk for each cancer to the correlation be-tween mutation ratio and cancer risk should be evaluated.
3, A detailed definition and selection of consensus mutations as well as a complete list of consensus muta-tions should be provided as the supplementary and the influence of the variation of the number of the mu-tation to the conclusion should be validated.
4, In the supplementary section, authors has provided the mutation counts per Mb and lifetime risk for each cancer, however, the explicit data which was used to establish the Figure 1 should be showed as the form of table.
5, In the analysis, the authors actually established a log-log relationship between mutation counts and life-time risk. However, in the title, the author used "mutation rate". Is there any difference between these two terms, especially when considering difference division speed for different cell type?

Discretionary Revisions
1, the role of the factorial of N in the formula of logarithm of cancer lifetime risk (Armitage-Doll model) might be need some introduction.