

Longitudinal Gut Microbiota Tracking Reveals the Dynamics of Horizontal Gene Transfer

Corresponding Author: Professor Jingyuan Fu

This manuscript has been previously reviewed at another journal. This document only contains information relating to versions considered at Nature Communications.

This file contains all reviewer reports in order by version, followed by all author rebuttals in order by version.

Version 0:

Reviewer comments:

Reviewer #2

(Remarks to the Author)

I appreciate the authors' thorough and thoughtful responses to the previous comments. The revisions have substantially improved the clarity, rigor, and overall quality of the manuscript. All major concerns raised in my initial review, including those related to methodological validation and data interpretation have been satisfactorily addressed through additional analyses, clearer explanations, and appropriate revisions to the text. I thank the authors for their careful efforts with the revision process. I have no further major concerns and consider the manuscript suitable for publication in its current form.

(Remarks on code availability)

Reviewer #3

(Remarks to the Author)

Peng and colleagues provide a revised version of their manuscript, detailing their horizontal-gene-transfer detection method, HDMI. My comments, mostly referring to interpretation and contextualization of the results, have been addressed by the changes in the text. I follow their logic why they did not explore the HGT dynamic by comparing MAGs across timepoints.

The Supplementary Figure 7 does not appear to be updated in the way indicated in the response-to-reviewers document. Maybe a small error?

The codebase is much better documented now. Thank you especially for providing performance estimates on the test dataset. However, the test dataset does not seem to be available. Would it be possible to provide this, for example, through Zenodo? Lastly, it might be advisable to provide a conda recipe for HDMI to make the installation easier.

(Remarks on code availability)

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1 REVIEWERS' COMMENTS

2
3 Reviewer #2 (Remarks to the Author):

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7 manuscript. All major concerns raised in my initial review, including those related to
8 methodological validation and data interpretation have been satisfactorily addressed
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10 I thank the authors for their careful efforts with the revision process. I have no further
11 major concerns and consider the manuscript suitable for publication in its current form.

12
13 Response: Thank you very much for your suggestions!

14
15 Reviewer #3 (Remarks to the Author):

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17 Peng and colleagues provide a revised version of their manuscript, detailing their
18 horizontal-gene-transfer detection method, HDMI. My comments, mostly referring to
19 interpretation and contextualization of the results, have been addressed by the
20 changes in the text. I follow their logic why they did not explore the HGT dynamic by
21 comparing MAGs across timepoints.

22
23 Response: Thank you very much for your comments!

24
25 The Supplementary Figure 7 does not appear to be updated in the way indicated in the
26 response-to-reviewers document. Maybe a small error?

27
28 Response: Thank you for pointing this out. We have now updated Supplementary
29 Figure 7 to the correct version.

30
31 The codebase is much better documented now. Thank you especially for providing
32 performance estimates on the test dataset. However, the test dataset does not seem
33 to be available. Would it be possible to provide this, for example, through Zenodo?
34 Lastly, it might be advisable to provide a conda recipe for HDMI to make the installation
35 easier.

36
37 Response: Thanks for your suggestions. We have now uploaded the test dataset at
38 <https://zenodo.org/records/17515026> and also added the option to install via conda:
39 `< conda install -c conda-forge -c bioconda hdmi>`.