Peer Review Report

Review Report on Comparative Genomics of Thermosynechococcaceae and Thermostichaceae: Insight into Codon Usage Bias

Original Research, Acta Biochim. Pol.

Reviewer: Grzegorz Wegrzyn
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EVALUATION

Q 1 **Please summarize the main findings of the study.**

This is an interesting paper with the analysis of the codon usage bias in the light of adaptation to specific conditions. A group of cyanobacteria has been used as a model. The conclusions are interesting and the analyses appear technically sound.

Q 2 **Please highlight the limitations and strengths.**

The strength of the study is an interesting problem and indication how different codon usage might be ralted to adaprations of microorganisms. The limitation is a relatively low number of investigated genomes. Nevertheless, if there are all available genomes in databases, this is still fine.

Q 3 **Please comment on the methods, results and data interpretation. If there are any objective errors, or if the conclusions are not supported, you should detail your concerns.**

The methods are properly chosen and the interpretation of the results are generally correct.

Check List

Q 4 **Please provide your detailed review report to the editor and authors (including any comments on the Q4 Check List)**

This is an interesting paper with the analysis of the codon usage bias in the light of adaptation to specific conditions. A group of cyanobacteria has been used as a model. The conclusions are interesting and the analyses appear technically sound. Just a few questions:
1. Did the author consider sizes of genomes as possible factors influencing the results of the analysis.
2. Accession numbers of anaysed genomes in the database should be provided, not only a link to the general webside of the database.

Q 5 **Is the English language of sufficient quality?**

Yes.

Q 6 **Is the quality of the figures and tables satisfactory?**

Yes.

Q 7 Does the reference list cover the relevant literature adequately and in an unbiased manner?

Yes.

Q 8 Are the statistical methods valid and correctly applied? (e.g. sample size, choice of test)

Yes.

Q 9 Are the methods sufficiently documented to allow replication studies?

Yes.

Q 10 Are the data underlying the study available in either the article, supplement, or deposited in a repository? (Sequence/expression data, protein/molecule characterizations, annotations, and taxonomy data are required to be deposited in public repositories prior to publication)

No.

Q 11 Does the study adhere to ethical standards including ethics committee approval and consent procedure?

Not Applicable.

Q 12 Have standard biosecurity and institutional safety procedures been adhered to?

Not Applicable.

QUALITY ASSESSMENT

Q 13 Originality

Q 14 Rigor

Q 15 Significance to the field

Q 16 Interest to general audience

Q 17 Quality of the writing

Q 18 Overall quality of the study