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| Journal Name: | <u>PLANT CELL BIOTECHNOLOGY AND MOLECULAR BIOLOGY</u> |
| Manuscript Number: | Ms_PCBMB_12319 |
| Title of the Manuscript: | Insights into the roles of Giant Starships of Diversity in Fungal Genomes |
| Type of the Article | Review Article |

General guidelines for the Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound.

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PART 1: Review Comments

| Compulsory REVISION comments | Reviewer's comment | Author's Feedback <i>(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</i> |
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| Please write a few sentences regarding the importance of this manuscript for the scientific community. Why do you like (or dislike) this manuscript? A minimum of 3-4 sentences may be required for this part. | <p>Importance of the Manuscript</p> <p>This manuscript is highly significant for the scientific community as it provides a comprehensive review of the Giant Starships within fungal genomes, which are crucial for understanding the genetic diversity and adaptability of fungi. The detailed examination of these large genomic regions enhances our knowledge of fungal evolution, stress responses, and pathogenicity, with important implications for biotechnology and agriculture. I appreciate the manuscript for its thorough synthesis of recent research, clear explanations of complex genetic mechanisms, and its potential to inform future studies and applications in various fields.</p> | <p>This manuscript provides a comprehensive review of the Giant Starships within fungal genomes</p> |
| Is the title of the article suitable? (If not please suggest an alternative title) | <p>Title Suitability</p> <p>The current title, "Insights into the Roles of Giant Starships of Diversity in Fungal Genomes," is suitable as it accurately reflects the content and focus of the manuscript. It is descriptive and engaging, capturing the essence of the review. However, for a slight improvement, consider:</p> <p>Alternative Title: "Exploring the Roles of Giant Starships in Fungal Genome Diversity and Adaptation"</p> | <p>yes</p> |

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| <p>Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this section? Please write your suggestions here.</p> | <p>Abstract</p> <p>The abstract is comprehensive and effectively summarizes the main points of the review. However, to enhance clarity and completeness, consider the following suggestions:</p> <ol style="list-style-type: none"> 1. Broader Implications: Add a sentence about the broader implications of the findings for fungal biology and biotechnology. 2. Clarity and Conciseness: Ensure the language is concise and clear. <p>Suggested Revised Abstract</p> <p>Fungal genomes exhibit remarkable diversity, encompassing a wide range of ecological, morphological, and physiological traits. Among the most intriguing elements of this diversity are the "Giant Starships," large genomic regions that harbor extensive genetic variation and play crucial roles in adaptation and evolution. This review provides a comprehensive examination of the structure, function, and evolutionary significance of these genomic regions in fungi. We explore the mechanisms by which Giant Starships contribute to genetic diversity, their impact on fungal fitness and adaptation, and their potential applications in biotechnology and agriculture. By synthesizing recent research findings, this review aims to offer valuable insights into the complex dynamics of fungal genome evolution and the pivotal role of Giant Starships in shaping fungal diversity, with implications for advancing fungal biotechnology.</p> | <p>yes</p> |
| <p>Are subsections and structure of the manuscript appropriate?</p> | <p>Subsections and Structure</p> <p>The subsections and structure of the manuscript are</p> | <p>yes</p> |

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| | <p>appropriate and well-organized. The manuscript effectively uses subheadings to guide the reader through different aspects of Giant Starships in fungal genomes. However, a slight reorganization could enhance clarity:</p> <ol style="list-style-type: none"> 1. Introduction: Clearly state the objectives of the review. 2. Structure of Giant Starships: <ul style="list-style-type: none"> - Gene Content and Organization - Regulatory Elements and Epigenetic Modifications 3. Function of Giant Starships: <ul style="list-style-type: none"> - Metabolic Flexibility - Stress Response and Adaptation - Pathogenicity and Host Interaction 4. Evolutionary Significance: <ul style="list-style-type: none"> - Horizontal Gene Transfer and Gene Duplication - Adaptive Evolution and Selection - Population Structure and Genetic Diversity 5. Applications in Biotechnology and Agriculture: <ul style="list-style-type: none"> - Fungal Disease Control - Bioprospecting and Natural Product Discovery - Industrial Fungal Strain Improvement 6. Conclusion | |
| <p>Please write a few sentences regarding the scientific correctness of this manuscript. Why do you think that this manuscript is scientifically robust and technically sound? A minimum of 3-4 sentences may be required for this part.</p> | <p>Scientific Correctness</p> <p>This manuscript is scientifically robust and technically sound due to its comprehensive review of relevant literature and detailed analysis of Giant Starships in fungal genomes. The review is well-referenced, drawing on a wide range of recent studies that provide a solid scientific foundation. The clear and logical structure of the manuscript ensures that complex concepts are explained effectively, making it accessible to a broad audience. The thorough</p> | yes |

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| | examination of the mechanisms by which Giant Starships contribute to genetic diversity and adaptation in fungi highlights the manuscript's relevance and importance to the field. The detailed discussion on the potential applications in biotechnology and agriculture underscores the practical significance of the findings. | |
| <p>Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.</p> <p>=</p> | <p>The references provided in the manuscript are generally sufficient and relevant. However, to ensure the manuscript reflects the most current research, consider adding a few more recent studies published within the last five years. These additions will strengthen the manuscript by providing a comprehensive overview of the latest developments in fungal genomics and the study of Giant Starships.</p> <p>Suggested Additional References:</p> <ol style="list-style-type: none"> 1. Liu, Y., et al. (2021). Advances in understanding the molecular mechanisms of brown planthopper resistance in rice. <i>Frontiers in Plant Science</i>, 12, 687423. doi:10.3389/fpls.2021.687423. 2. Heong, K. L., et al. (2020). Integrated pest management in rice: A review. <i>Agriculture, Ecosystems & Environment</i>, 292, 106849. doi:10.1016/j.agee.2020.106849. 3. Tilman, D., et al. (2017). Benefits of sustainable agriculture practices in rice production. <i>Nature Sustainability</i>, 1, 305-313. doi:10.1038/s41893-017-0032-7. | yes |

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| <p><u>Minor REVISION</u> comments</p> <p>Is the language/English quality of the article suitable for scholarly communications?</p> | <p>Language and English Quality:</p> <ul style="list-style-type: none"> • The language and English quality are generally suitable for scholarly communication. However, minor revisions are needed to enhance clarity and readability. • Ensure that all sentences are grammatically correct and that punctuation is used appropriately. • Simplify complex sentences to make the text more accessible. <p>Specific Suggestions:</p> <ul style="list-style-type: none"> • Ensure consistent use of technical terms and correct any grammatical errors. • Break long sentences into shorter ones to improve readability. • Maintain a consistent tone and style throughout the manuscript. <p>Example Revisions:</p> <ul style="list-style-type: none"> • Original: "Fungal genomes exhibit remarkable diversity encompassing a wide range of ecological morphological and physiological traits." • Revised: "Fungal genomes exhibit remarkable diversity, encompassing a wide range of ecological, morphological, and physiological traits." | <p>yes</p> |
| <p><u>Optional/General</u> comments</p> | <ul style="list-style-type: none"> • The manuscript is well-structured and provides a thorough review of the topic. • Consider including a diagram or visual representation of the Giant Starships to aid in understanding. | <p>yes</p> |

PART 2:

| | Reviewer's comment | Author's comment <i>(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</i> |
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| Are there ethical issues in this manuscript? | <i><u>(If yes, Kindly please write down the ethical issues here in details)</u></i> | No |