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| Book Name: | [**Microbiology and Biotechnology Research: An Overview**](https://www.bookpi.org/bookstore/product/microbiology-and-biotechnology-research-an-overview-vol-1/) |
| Manuscript Number: | **Ms\_BPR\_5105** |
| Title of the Manuscript: | **Lignocellulose degradation by actinomycetes: A Pathway to Green Biotechnology** |
| Type of the Article | **Book chapter** |

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| PART 1: Comments | | |
|  | Reviewer’s comment **Artificial Intelligence (AI) generated or assisted review comments are strictly prohibited during peer review.** | Author’s Feedback *(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)* |
| **Please write a few sentences regarding the importance of this manuscript for the scientific community. A minimum of 3-4 sentences may be required for this part.** | The manuscript underscores the crucial role of actinomycetes in breaking down lignocellulose, showcasing their enzymatic ability in transforming plant biomass into valuable bio-based resources. This Book chapter holds great importance for the scientific community, as it deepens insights into microbial enzyme systems and opens avenues for sustainable innovations in biofuels, bioremediation, and green biotechnology. |  |
| **Is the title of the article suitable?**  **(If not please suggest an alternative title)** | **No, “Actinomycetes in Lignocellulose Degradation: Enzymes and Their Role in Green Biotechnology”** |  |
| 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. | Well-written and concise, but consider adding a brief mention of the potential challenges or limitations associated with actinomycetes in industrial applications for lignocellulose degradation. |  |
| **Is the manuscript scientifically, correct? Please write here.** | **Yes,** But it requires lot of improvement.  **Introduction:** Comprehensive introduction with good references but, briefly mention the ecological role of actinomycetes in natural environments to emphasize their relevance and clarify the role of pectin and lipids in the structure to avoid confusion about their contribution.  **Structure of Lignocellulosic Materials:** Good explanation with detailed descriptions of cellulose, hemicellulose, and lignin. It could be better if it specify the range of composition in plant cell wall.  **Actinomycetes as Lignocellulose Degraders:** Good overview of actinobacteria and their enzymatic capabilities.  **Suggestion*:*** Clarify the distinction between industrial enzymes and those underexplored for commercial use and the genetic diversity of actinomycetes and their adaptation to different environments.  **Applications of Lignocellulolytic Enzymes:** Highlight any recent innovations in enzyme engineering that improve efficiency in lignocellulose degradation and include a brief section on how advances in bioinformatics and metagenomics are helping discover novel lignocellulolytic enzymes.  **Xylanase: Recent Advancement in Genetic Engineering:** Interesting section with useful insights.  **Conclusion:** Good  **Suggestion*:*** Consider highlighting future research directions, such as exploring novel strains of actinomycetes or improving enzyme thermostability. |  |
| **Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.** | Reference are sufficient but not recent and consistent in citation formate |  |
| Is the language/English quality of the article suitable for scholarly communications? | Yes, it is suitable but it has some minor grammatical corrections and sentence restructuring could improve flow and readability. |  |
| Optional/General comments | 1. **Figures:** Adding figures (e.g., structure of lignocellulose, enzyme pathways) will enhance comprehension. 2. **Subheadings:** Consider breaking down larger sections into smaller subsections for better clarity. |  |

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| **PART 2:** | | |
|  | Reviewer’s comment | Author’s comment *(if agreed with the reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)* |
| **Are there ethical issues in this manuscript?** |  |  |

**Reviewer details:**

**Keerthi Patel M, India**