

Review of: "Techno-Economic Fermentative Microbe-Based Industrial Production of Lactic Acid (LA): Potential Future Prospects and Constraints"

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Potential competing interests: No potential competing interests to declare.

"12 mmt?? Write full form.

"What is SCB?"

"Biomass, abundant globally, offers a diverse range of energy and environmental sustainability applications" sentence can be improvised.

"English is not proper in the full document."

Suggestion: Ensure consistent and proper use of English throughout the entire document.

"Microbial fermentation is the dominant industrial application, producing pure LA and D (-) compounds." What are LA and D?? Why not DA??

LA stands for Lactic Acid, and D represents the stereochemistry of the acid. It would be more accurate to use DLA for clarity.

"LA is crucial for producing various compounds, including $\text{CH}_3\text{CHCH}_2\text{O}$, CH_2CHCOOH , and ethyl lactate, as well as biodegradable polymers like polylactic acid (PLA)." Why use formulas in some and names in the others?

Suggestion: Use consistent notation throughout. Either use chemical formulas or the names consistently for clarity and readability.

How LA and DLA are significant for the production of PLA? Nothing is mentioned about it. Please refer to the literature.

Suggestion: Provide information on the significance of Lactic Acid (LA) and D-Lactic Acid (DLA) in the production of Poly(lactic acid) (PLA) based on literature references.

"This review explores SCB-based modules and commercial LA manufacture, focusing on lignocellulosic feedstocks for lactic acid production through fermentation to reduce petroleum-derived chemicals. Corn stover is the primary feedstock, with pretreatment methods such as acid and enzyme hydrolysis." The objective of the review is not clear, and the context does not match the title.

Suggestion: Clarify the objective of the review to align with the title, providing a clear overview of the focus and scope.

“Point 2: Biomass Recalcitrance and Carbohydrate Recovery” Nothing is mentioned as per the title. It needs to be elaborated and written based on published literature.

Suggestion: Elaborate on the topic of Biomass Recalcitrance and Carbohydrate Recovery in line with the title, incorporating relevant information from published literature.

H₃PO₄, C₂H₈N₂, CH₃COOH... all these formulas need to be written properly.

Revised: H₃PO₄, C₂H₈N₂, CH₃COOH.

In some cases, “percent” is written, while in others, “%” is used.

Suggestion: Use a consistent notation for percentages throughout the document.

D-Lactic acid can be introduced the first time as DLA, and “DLA” can be used further without the full form. The same for all abbreviations.

Suggestion: Introduce abbreviations in their full form upon first use and use the abbreviated form thereafter for consistency.

“The least endowment (MSP) of LAs is comparatively more than that of ethanol, but the potential of ethanol in the market as an energy-dense chemical product for energy with a wide range of uses is clear.”

What is MSP??

“The best method for 2G LA downstream processing purifies the product with little waste and has a defined process that is reliable, error-free, and simple enough for industrial scale-up.” Sentences need to be improvised. Some sentences don't make sense. Please check the grammar.

“The current study clarifies the technological procedures that have given the biorefineries based on SCB commercialization—with 2G LA as the desired chemical—the necessary push.” What does this sentence mean??

Tables look too clumsy with words. Can be improvised.

Image qualities can be improved. Images are not clear.

Integration of Current Research Gaps:

Identifying current research gaps or areas that require further investigation would add depth to the abstract. This could include emerging technologies, unresolved issues, or unexplored aspects related to sugarcane bagasse-based lactic acid production.

Precision in Biomass Composition:

The abstract mentions that sugarcane bagasse encompasses sixty percent carbohydrates. To enhance the precision and applicability of the information, it would be beneficial to specify the types of carbohydrates present, such as cellulose, hemicellulose, and lignin, as these components play crucial roles in the subsequent processes.

The review needs to be written nicely. There's a lack of connection between subsequent subtopics. The sections are not written elaborately.

Suggestion: Enhance the flow and coherence between sections, ensuring that each subtopic is elaborated upon and contributes to the overall narrative. Consider providing more detailed explanations where needed.

Overall, this review is poorly written; it needs much improvement. This review could benefit from a more thorough analysis. Provide examples or suggestions for improvement to make your review more constructive. This way, readers can gain a deeper understanding of your perspective.