

Review Form2

Book Name:	Pharmaceutical Research: Recent Advances and Trends
Manuscript Number:	Ms_BPR_2602
Title of the Manuscript:	Ultrasound-Assisted Synthesis of Substituted 1,4-Dihydropyridines in Aqueous Medium Using Phase Transfer Catalysts
Type of the Article	Book Chapter

PART 1: Review Comments

Compulsory REVISION comments	Reviewer's comment	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. Why do you like (or dislike) this manuscript? A minimumof 3-4 sentences may be required for this part.	Overall, the paper is well-structured and presents valuable research, but a more thorough discussion of mechanistic and sustainability aspects is recommended for strengthening the manuscript before publication. After thoroughly reviewing the article, I find that the research has great potential and contributes valuable insights to the field of green chemistry. However, I believe major revisions are required before the manuscript can be considered for publication.	
Is the title of the article suitable? (If not please suggest an alternative title)	Title is clear and informative, but it could be refined for better impact and broader appeal. Alternative Title Suggestions: "Green Ultrasound-Assisted Synthesis of 14-Dihydropyridines Using Phase Transfer Catalysts" Eco-Friendly Ultrasound-Promoted Synthesis of Substituted 14-Dihydropyridines in Aqueous Medium"	
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.	It is good but it is better to be more concise, reader-friendly, and better captures the significance of the work while avoiding unnecessary technical details. Suggested Additions: Broader Context: Add a brief sentence that situates this work in the broader field of green chemistry and why 14-DHP analogues are important in medicinal chemistry. Comparison with Conventional Methods: Mention how this method improves on traditional synthesis techniques in terms of yield, reaction time, and environmental impact. Key Results: Highlight the most significant finding, such as the highest yield achieved and the environmental benefits.	
Are subsections and structure of the manuscript appropriate?	The structure of the manuscript is mostly appropriate, but it would benefit from more clearly defined subsections, especially in the Experimental and Results and Discussion sections. Experimental Section: This section is detailed but could benefit from being broken down into more specific subsections. For example: Synthesis of Catalysts Catalyst Function Analysis Ultrasound-Assisted Reactions Characterization Methods This would make it easier for readers to follow the experimental procedures.	
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 minimumof 3-4 sentences may be required for this part.	My Suggestion : 1. Catalyst Selection: While the use of TBAB and TPAB is justified, a broader comparison with more modern catalysts might give insights into newer trends in sustainable chemistry. 2. Mechanistic Insight: Although the paper focuses on the results, it would be beneficial to	

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	include a deeper discussion about the mechanistic role of ultrasound in accelerating these phase-transfer reactions. 3. Characterization: While the spectral data is reported, it would be helpful to include visual data, such as NMR spectra and TLC plates, to offer more transparency in the results. Questions : Optimization of Conditions: Could you elaborate on why 60 minutes of ultrasonic treatment with 10 mol% TBAB was determined to be the optimum condition? Was there any attempt to explore shorter reaction times or lower catalyst loads for further process optimization? Catalyst Alternatives: Have you considered using other non-toxic, bio-based phase transfer catalysts? Could natural or biodegradable catalysts reduce the environmental impact further? Reusability of Catalysts: Did you assess the reusability or recyclability of the catalysts, particularly TBAB or TPAB? How might this factor into the overall sustainability of the process? Reaction Mechanism: Could you provide more detail on the exact mechanistic role ultrasound plays in facilitating the reaction? How does it enhance the interaction between the aqueous medium and phase-transfer catalysts? Broader Applications: Can this ultrasound-assisted method be generalized for the synthesis of other organic scaffolds? Have you tested its versatility on different types of multicomponent reactions?	
Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form. :-	Update Citations: Include more recent references, particularly in areas of ultrasound applications in organic synthesis and phase-transfer catalysis, to reflect the current state of the field. Consistent Formatting: Ensure that all references follow a consistent format, with complete details such as journal names, volume numbers, page ranges, and DOIs.	
Minor REVISION comments Is the language/English quality of the article suitable for scholarly communications?	While the manuscript is generally understandable and follows the expected scientific tone, a revision for grammar, punctuation, and sentence clarity is necessary to meet the standards of scholarly communication. A thorough proofreading or professional language editing would greatly enhance the overall quality of the article.	
Optional/General comments	Hi, Thanks for having this valuable opportunity	

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>
Are there ethical issues in this manuscript?	<i>(If yes, Kindly please write down the ethical issues here in details)</i>	

Reviewer Details:

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