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| Journal Name: | [**Asian Journal of Biotechnology and Bioresource Technology**](https://journalajb2t.com/index.php/AJB2T) |
| Manuscript Number: | **Ms\_AJB2T\_135424** |
| Title of the Manuscript: | **Brewed and Renewed: Preliminary Characterization and Antibiotic Potential of Chitosan Nanogels Loaded with Arabica (Coffea arabica) Spent Coffee Grounds** |
| Type of the Article |  |

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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** (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 study "Brewed and Renewed: Preliminary Characterization and Antibiotic Potential of Chitosan Nanogels Loaded with Arabica Spent Coffee Grounds" brings valuable insights to the scientific community. It highlights an innovative way to repurpose coffee waste into potentially beneficial biomedical materials, promoting sustainability and resource efficiency. By exploring the physicochemical properties, safety, and biological activity of these nanogels, the research opens new possibilities for developing eco-friendly wound healing products. Although the antibiotic activity was not strongly evident, the study lays important groundwork for future improvements and broader applications in the field of nanomedicine and natural product research.** |  |
| **Is the title of the article suitable?**  **(If not please suggest an alternative title)** | **Preliminary Characterization and Evaluation of the Antibiotic Potential of Chitosan Nanogels Incorporating Arabica (Coffea arabica) Spent Coffee Grounds** |  |
| 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. | **The abstract covers the main aspects of the study, including the aim, design, methodology, results, and conclusion, making it reasonably comprehensive. However, some refinements are recommended. The "Place and Duration of Study" section, while informative, could be shortened or integrated more naturally, as it disrupts the flow of the abstract. The methodology is detailed, but a brief mention of why specific methods (like the Kirby-Bauer Assay or Brine Shrimp Assay) were chosen would strengthen its justification. In the results, it would be clearer to separate the discussion on particle size aggregation from particle uniformity, as these are conceptually different. Also, stating that "no zones of inhibition were formed" is crucial but could be better framed to highlight its impact on the study's goals. The conclusion could more directly relate the findings to the potential applications of the nanogel in wound healing, to tie back to the aim. Overall, minor deletions for conciseness and additions for clarity would make the abstract stronger and more cohesive.** |  |
| Is the manuscript scientifically, correct? Please write here. | **The manuscript appears to be scientifically sound overall. The study presents a clear objective, appropriate methodology, and logical data interpretation regarding the development and preliminary characterization of chitosan nanogels loaded with spent coffee grounds from Coffea arabica. The experimental design, including nanogel formulation and assessment of antibiotic potential, is generally well-structured and follows accepted scientific practices. However, some areas, such as statistical analysis details and deeper discussion of mechanisms behind the observed antibacterial effects, could benefit from further elaboration to strengthen the scientific rigor**. |  |
| **Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.** | **The references provided in the manuscript appear insufficient for a comprehensive review of the topic, particularly considering the rapid advancements in the field of chitosan-based nanogels and their applications. The manuscript would benefit from incorporating more recent studies, especially those published in the past 2–3 years, to ensure the discussion is aligned with the latest findings and trends. A more thorough and up-to-date literature review will strengthen the manuscript by broadening its context and highlighting contemporary developments. This will not only improve the manuscript's relevance but also offer readers a clearer understanding of the current state of research in the field. Please consider adding the following references to improve the manuscript's depth and provide more insight into the topic:  1. Application of nano-antibiotics in the diagnosis and treatment of infectious diseases  2. Nano biofilms: An emerging biotechnology applications** |  |
| Is the language/English quality of the article suitable for scholarly communications? | **Authors should carefully revise and corrected all the grammatical issues and follow the scientific norms in the whole manuscript. Please check the main text to improve the English level.** |  |
| Optional/General comments | The authors claimed that this article Brewed and Renewed: Preliminary Characterization and Antibiotic Potential of Chitosan Nanogels Loaded with Arabica (Coffea arabica) Spent Coffee Grounds. This article is well organized and written, but the following points in the article should be corrected for publication:  1) Authors should carefully revise and correct all the grammatical issues and follow the scientific norms in the whole manuscript. Please check the main text to improve your English level.  2) Please use updated and recent papers in the literature review to give more sense to the reader.  3) Authors need to read more relevant papers that are highly cited or published in high-quality journals and make more in-depth discussions or comments.  4) Please, more figures and tables should be included in the article to achieve high quality, because the article lacks figures and there are not enough tables in the article.  5) The abstract of the article should be revised.  6) The conclusion is not fully and comprehensively explained, please correct it.  7) The current keywords should be revised to better reflect the content and focus of the manuscript. Innovative and more specific keywords should be added to improve searchability and relevance.  8) The text of the article should be properly divided with clear and relevant subtitles. This will help improve the manuscript's structure, making it easier for readers to follow the argument and flow of the content. |  |

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| **PART 2:** | | |
|  | **Reviewer’s comment** | **Author’s comment** *(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)* |
| **Are there ethical issues in this manuscript?** | *(If yes, Kindly please write down the ethical issues here in details)* |  |

**Reviewer details:**

**Masoomeh Yari Kalashgrani, Shiraz University of Medical Sciences, Iran**