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| Book Name: | [**Medical Science: Trends and Innovations**](https://www.bookpi.org/bookstore/product/medical-science-trends-and-innovations-vol-1/) |
| Manuscript Number: | **Ms\_BPR\_4478** |
| Title of the Manuscript: | **Tissue Engineering and Regenerative Medicine in Cardiovascular Disease** |
| 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.** | This manuscript is highly significant for the scientific community as it addresses the limitations of current cardiovascular treatments and explores the potential of tissue engineering and regenerative medicine in overcoming these challenges. By reviewing the latest advancements in tissue-engineered vascular grafts (TEVGs), tissue-engineered heart valves (TEHVs), and myocardial regeneration, it provides valuable insights into innovative therapeutic approaches. The discussion on ongoing clinical trials and novel strategies offers a foundation for future research and clinical applications, helping to bridge the gap between experimental findings and real-world medical solutions. Ultimately, this review contributes to the development of more effective, biocompatible, and durable cardiovascular therapies, improving patient outcomes in the long run. |  |
| **Is the title of the article suitable?**  **(If not please suggest an alternative title)** | Yes, it is generally suitable, as it reflects the core themes of the article—tissue engineering and regenerative medicine in the context of cardiovascular diseases. However, it could be more precise to emphasize the focus on **vascular grafts, heart valves, and myocardial regeneration,** as these are the key aspects discussed. |  |
| 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 provides a well-structured overview of the topic, highlighting the significance of cardiovascular diseases (CVD), current treatment limitations, and the potential of tissue engineering in addressing these issues. However, there are areas where clarity and comprehensiveness can be improved. **Additions:**  1. **Clarify the Challenges of TEVGs and TEHVs** – The abstract mentions that small-diameter TEVGs have not shown clinical effectiveness and that TEHVs have limitations, but it does not specify what these limitations are. Briefly mentioning key challenges (e.g., durability, immune response, mechanical properties) would enhance clarity. 2. **Expand on Myocardial Regeneration** – While the abstract mentions cell injection therapies and clinical trials using induced pluripotent stem cells (iPSCs), it does not specify the current challenges, such as cell retention, survival, and integration into the myocardium. Including these would provide a more balanced perspective. 3. **Mention of Biomaterials and Scaffold Design** – Since the abstract discusses tissue engineering, it would be beneficial to briefly mention biomaterials or scaffold design strategies that play a crucial role in TEVG and TEHV development. 4. **Include Potential Future Directions** – A brief mention of emerging technologies (e.g., 3D bioprinting, gene editing, bioactive materials) could make the abstract more forward-looking.  **Deletions or Refinements:**  1. **Grammar and Sentence Refinement** – The sentence "Theoretically, cardiovascular tissue engineering have the potential to address the limitations..." should be corrected to "Cardiovascular tissue engineering has the potential to address the limitations..." 2. **Clarify Clinical Trial Status** – The sentence "Several clinical trials using human induced pluripotent stem cells-derived cardiomyocytes has been initiated." should be corrected to "Several clinical trials using human-induced pluripotent stem cell-derived cardiomyocytes have been initiated." Additionally, specifying whether these trials are in early or advanced stages would improve clarity. 3. **Concise Wording for Readability** – The phrase "Here we will review various advanced devices, approaches, and strategies to address current drawbacks, focusing on current clinical studies and ongoing clinical trials for TEVG, TEHV, and myocardial regeneration based on cardiovascular medicine." could be more concise, such as: "This review will examine advanced approaches, current clinical studies, and ongoing trials addressing the limitations of TEVGs, TEHVs, and myocardial regeneration in cardiovascular medicine."   Overall, the abstract is strong but would benefit from minor refinements in clarity, specificity, and future outlook. |  |
| **Is the manuscript scientifically, correct? Please write here.** | Based on the explanation, the manuscript appears to be scientifically sound. However, a thorough review of the data, methodology, and conclusions is necessary to ensure its accuracy and validity. |  |
| **Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.**  **-** | **Yes** |  |
| Is the language/English quality of the article suitable for scholarly communications? | English quality of the article suitable for scholarly communications. |  |
| Optional/General comments |  |  |

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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)* |  |

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| **Reviewer Details:** | |
| Name: | **Arvind Kumar Shukla** |
| Department, University & Country | **Pusan Natinal University, South Korea** |