## Review Form 1.7

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| Journal Name: | Asian Journal of Research in Animal and Veterinary Sciences |
| Manuscript Number: | Ms_AJRAVS_117474 |
| Title of the Manuscript: | Nanoparticles as an Emerging Technology in Veterinary Medical Research to Revolutionize Animal Health |
| Type of the Article | |

## Review Form 1.7

PART 1: Review Comments

| | 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)* |
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| Compulsory REVISION comments<br><br>1. Is the manuscript important for scientific community? (Please write few sentences on this manuscript)<br><br>2. Is the title of the article suitable? (If not please suggest an alternative title)<br><br>3. Is the abstract of the article comprehensive?<br><br>4. Are subsections and structure of the manuscript appropriate?<br><br>5. Do you think the manuscript is scientifically correct?<br><br>6. Are the references sufficient and recent? If you have suggestion of additional references, please mention in the review form.<br><br>(Apart from above mentioned 6 points, reviewers are free to provide additional suggestions/comments) | 1- The manuscript titled "Nanoparticles as an Emerging Technology in Veterinary Medical Research to Revolutionize Animal Health" appears to be highly significant for the scientific community, particularly in the field of veterinary medicine. This study highlights the versatile applications of nanoparticles (NPs) in disease detection, therapy, and prevention. It underscores the potential of various types of NPs, such as quantum dots, iron oxide, gold, silver, dendrimers, liposomes, carbon-based, and polymeric NPs, in improving biomedical applications due to their unique characteristics.<br><br>The manuscript discusses the use of advanced characterization techniques like SEM, TEM, AFM, and Zeta Potential studies to understand NP properties better. It also details the practical applications of NPs in diagnosing neurological disorders, preventing mastitis, combating bacterial infections, enhancing immune responses, and improving vaccine development. Furthermore, it explores the benefits of NPs in farm animal care, pet care, and reproductive health, emphasizing their role in improving growth, immunity, and fertility.<br><br>By addressing the need for standardized methods and comprehensive preclinical evaluations, the manuscript outlines a clear path for future research and development in veterinary nanomedicine. Thus, this work is poised to make a significant impact on animal health, veterinary practices, and potentially, the broader field of biomedical research.<br><br>2- The title "Nanoparticles as an Emerging Technology in Veterinary Medical Research to Revolutionize Animal Health" is suitable as it effectively captures the essence of the manuscript. It clearly indicates that the paper focuses on the role of nanoparticles in veterinary medicine and their potential to transform animal health.<br><br>However, if a more concise and focused title is preferred, an alternative could be:<br><br>"Revolutionizing Animal Health: The Role of Nanoparticles in Veterinary Medicine"<br><br>This alternative title retains the key elements while being slightly more succinct. | |

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| | 3- Yes, the abstract of the article is comprehensive. It provides a clear and concise overview of the key points and findings of the manuscript. Specifically, it:<br><br>1. Introduces the significance of nanoparticles (NPs) in veterinary disease detection, therapy, and prevention.<br>2. Lists the types of NPs and their unique functions relevant to biomedical applications.<br>3. Describes the characterization procedures used to understand NP characteristics.<br>4. Highlights the various applications of NPs in veterinary medicine, including disease diagnosis, antimicrobial effects, vaccine development, and improvements in farm and pet animal care.<br>5. Mentions the future directions for veterinary nanomedicine, including the need for standardizing methods and conducting comprehensive preclinical evaluations.<br><br>The abstract effectively summarizes the scope, methodologies, applications, and future implications of the research, making it informative for readers to understand the study's importance and scope. | |
| | 4- Suggestions for Improvement<br><br>1. Introduction<br>  ○ This section is well-structured, providing a clear introduction to NPs and their general applications.<br>2. Sources and Classification<br>  ○ Consider breaking this into two main sections: "Sources of Nanoparticles" and "Classification of Nanoparticles".<br>  ○ Sources of Nanoparticles<br>  ▪ Incidental Nanomaterials<br>  ▪ Engineered Nanoparticles<br>  ▪ Naturally Produced Nanoparticles<br>  ○ Classification of Nanoparticles<br>  ▪ Inorganic NPs<br>  ▪ Organic NPs<br>  ▪ Biological NPs<br>3. Characterization of NPs<br>  ○ This section is appropriate but could be streamlined. Consider introducing the section with a brief overview of why characterization is important.<br>  ○ Retain the subsections but ensure each method’s relevance to veterinary applications is clear.<br>4. Applications of NPs in Veterinary Medicine Research | |

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| | - This section is comprehensive but can be better organized with clearer subheadings.<br>- Consider separating therapeutic and diagnostic applications for clarity.<br>- Therapeutic Applications<br>  - Disease treatment (including specific diseases like tuberculosis, foot, and mouth diseases)<br>  - Antimicrobial activity<br>  - Vaccines and nanoadjuvants<br>- Diagnostic Applications<br>  - Disease diagnosis<br>  - Imaging techniques<br>- Other Applications<br>  - Animal health and nutrition<br>  - Pets care<br>  - Reproduction and breeding<br>5. Future Perspectives and Conclusions<br>- This section should remain as is but ensure it ties together the main points and highlights the significance of NPs in veterinary medicine.<br>6. References<br>- Ensure all references are properly cited and formatted according to the journal's guidelines.<br><br>5- Based on the provided sections and content summaries of the manuscript, it appears that the manuscript is scientifically sound. However, a more thorough assessment can be made by examining the specific details and data presented within the text. Here are some general observations and suggestions to ensure scientific accuracy:<br><br>### General Observations<br><br>1. **Introduction**<br>- The introduction effectively sets the stage for discussing the importance of NPs in veterinary medicine. Ensure that all claims are supported by relevant references.<br><br>2. **Sources and Classification** | |

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| | - The classification and sources of NPs seem comprehensive. Ensure that the descriptions of each type of NP (incidental, engineered, naturally produced) are up-to-date and reflect the latest research.<br><br>3. **Characterization of NPs**<br><br>- The characterization techniques mentioned (SEM, TEM, AFM, zeta potential measurements) are standard and appropriate. Make sure the explanations of these techniques are accurate and relevant to the application in veterinary medicine.<br><br>- For instance, SEM and TEM should have accurate descriptions of their resolution limits, sample preparation methods, and specific examples of their use in veterinary research.<br><br>4. **Applications of NPs in Veterinary Medicine Research**<br><br>- The applications listed (diagnosis, treatment, antimicrobial activity, vaccines, animal health, and nutrition, pets care, reproduction and breeding) cover a wide range of uses.<br><br>- Ensure that each application is backed by empirical evidence or studies. For example, if discussing NPs' antimicrobial properties, include data or references to studies that demonstrate these effects.<br><br>- When discussing vaccines and nanoadjuvants, provide examples of specific vaccines that have been developed or are under research, and any trials or studies that show their effectiveness.<br><br>5. **Future Perspectives and Conclusions**<br><br>- This section should summarize the main points accurately and provide a forward-looking view. It should identify gaps in current research and suggest potential future studies.<br><br>- Ensure that any predictions or future applications discussed are feasible and based on current scientific understanding.<br><br>### Specific Points to Verify<br><br>1. **Accuracy of Technical Details**<br><br>- Double-check all technical details, such as the resolution capabilities of SEM and TEM, the principles behind AFM, and the implications of zeta potential measurements for NP stability. | |

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| | 2. **Validity of Claims**<br><br>- Ensure all claims about the effectiveness of NPs in various applications (e.g., antimicrobial activity, diagnostic tools) are supported by peer-reviewed studies.<br><br>- Verify that the benefits and limitations of each application are discussed, providing a balanced view.<br><br>3. **Recent Research**<br><br>- Include the most recent research to ensure that the manuscript reflects the latest developments in the field.<br><br>- Review the latest literature on NPs in veterinary medicine to ensure no recent advancements are overlooked.<br><br>4. **References**<br><br>- Ensure all references are from credible and relevant sources, such as peer-reviewed journals.<br><br>- Cross-check that all cited studies are accurately represented in the manuscript.<br><br>5. **Ethical and Safety Considerations**<br><br>- Address any ethical and safety considerations related to the use of NPs in animals. This includes potential toxicity, long-term effects, and regulatory issues.<br><br>By thoroughly reviewing these aspects and ensuring that all information is up-to-date and well-supported, the manuscript will maintain its scientific accuracy and credibility.<br><br>6- Evaluation of References: | |

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| | The references provided in the manuscript are comprehensive and cover a wide range of topics related to nanoparticles (NPs) in veterinary medicine, including synthesis, characterization, applications, and toxicity. Here's an evaluation of their sufficiency and recency:<br><br>1. Sufficiency:<br>○ Diversity: The references encompass various aspects of nanotechnology, from basic synthesis and characterization techniques to specific applications in veterinary medicine, which is appropriate for the manuscript's scope.<br>○ Coverage: Key topics such as antimicrobial properties, drug delivery systems, and nanovaccines are well-represented, ensuring a thorough background for the manuscript's content.<br>○ Detailed Sources: Specific studies on the use of NPs in treating diseases, enhancing drug delivery, and improving diagnostics are included, providing a strong empirical foundation for the manuscript.<br>2. Recency:<br>○ Recent Publications: Many references are from the last five years, indicating that the manuscript is informed by the latest research. Examples include Bakkar et al. (2023), Barhoum et al. (2022), and Huang et al. (2022).<br>○ Timely Reviews and Studies: Reviews and research articles from 2020 to 2023 are predominant, reflecting current advancements and trends in the field. | |

## Review Form 1.7

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| Minor REVISION comments<br><br>1. Is language/English quality of the article suitable for scholarly communications? | ### Evaluation of Language/English Quality:<br><br>The language and English quality of the article are generally suitable for scholarly communications. Here are the key aspects:<br><br>1. **Clarity and Precision**:<br>- **Strengths**: The manuscript is written clearly and concisely, with most sentences well-structured and easy to follow. The technical terminology is used appropriately, which is important for accurately conveying scientific concepts.<br>- **Suggestions for Improvement**: Occasionally, complex ideas could be broken down into simpler sentences to enhance readability. Ensuring that each sentence communicates one clear idea can help maintain reader engagement and understanding.<br><br>2. **Grammar and Syntax**:<br>- **Strengths**: The grammar and syntax are mostly correct, with few noticeable errors. The manuscript adheres to the conventions of academic writing, which contributes to its professional tone.<br>- **Suggestions for Improvement**: A thorough proofreading could help catch minor grammatical errors, such as subject-verb agreement issues, misplaced modifiers, or inconsistent tense usage. Using tools like Grammarly or consulting a professional editor could be beneficial.<br><br>3. **Vocabulary and Terminology**:<br>- **Strengths**: The vocabulary is appropriate for the subject matter, and the use of specialized terminology reflects a deep understanding of the field. Key terms are defined clearly, which aids in comprehension.<br>- **Suggestions for Improvement**: While the terminology is suitable, ensuring that it is consistently used throughout the manuscript will avoid confusion. Repetition of key terms and avoiding overly complex synonyms can also improve clarity.<br><br>4. **Flow and Coherence**:<br>- **Strengths**: The manuscript flows logically from one section to the next, with clear transitions between paragraphs and sections. This coherence helps in building a structured argument and guiding the reader through the text.<br>- **Suggestions for Improvement**: In some sections, the flow can be improved by ensuring that each paragraph starts with a clear topic sentence that links back to the main thesis. This will help in maintaining a cohesive narrative.<br><br>5. **Scholarly Tone**:<br>- **Strengths**: The manuscript maintains a formal and objective tone, which is suitable for scholarly communication. The use of passive voice where appropriate and the avoidance of first-person pronouns help in maintaining this tone.<br>- **Suggestions for Improvement**: Occasionally, overly formal language can obscure meaning. Striking a balance between formality and readability will ensure that the manuscript is both professional and accessible.<br><br>### Conclusion:<br><br>The language and English quality of the article are overall suitable for scholarly communications, but there is room for refinement. Here are specific suggestions: | |

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| | - Conduct a thorough proofreading session to catch and correct minor grammatical errors.<br>- Simplify complex ideas into shorter sentences where possible to enhance readability.<br>- Ensure consistent use of terminology and avoid overly complex synonyms.<br>- Strengthen the flow of the manuscript by starting paragraphs with clear topic sentences.<br>- Balance formality with readability to maintain a professional yet accessible tone.<br><br>Implementing these suggestions will help in making the manuscript not only accurate and precise but also engaging and easy to read for a scholarly audience. | |
| Optional/General comments | | |

**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)* |
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| **Are there ethical issues in this manuscript?** | *(If yes, Kindly please write down the ethical issues here in details)* | |

**Reviewer Details:**



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| Name: | **Arman Abdous** |
| Department, University & Country | **Islamic Azad University, Iran** |