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REVIEWER'S REPORT

Manuscript No.: IJAR-52897 Date: 18/07/2025

Title: *Nanorobots: Pioneers of Precision Medicine*

Recommendation:
✓ Accept as it is .....
Accept after minor revision.....
Accept after major revision .....
Do not accept (*Reasons below*) .....

Rating	Excel.	Good	Fair	Poor
Originality		✓		
Techn. Quality		✓		
Clarity		✓		
Significance	✓			

Reviewer Name: Dr. S. K. Nath Date: 19/07/2025

Reviewer's Comment for Publication:
The article effectively highlights the transformative potential of nanorobots in medicine, particularly their ability to enable precise, minimally invasive diagnostics and therapies. It envisions future developments where nanorobots could function as "nanosubmarines" within the bloodstream, performing complex tasks that surpass current medical capabilities. However, to realize this promise, significant challenges related to biocompatibility, control, safety, and regulation must be addressed. The authors advocate ongoing research and development, emphasizing that advances in nanotechnology could eventually make these tiny machines integral to personalized medicine.

Reviewer's Comment / Report

Strengths:
1. **Comprehensive Scope:** The paper covers a wide range of topics, including the fundamental structures of nanorobots, natural nanobots in biology, and diverse applications such as drug delivery, diagnostics, and minimally invasive surgery.
2. **Integration of Natural & Artificial Systems:** The discussion on natural nanobots (like ATP synthase, ribosomes, virus capsids) provides valuable insight into biological nano-machines, inspiring artificial nanorobot design.
3. **Clear Illustration of Applications:** The paper details practical application areas, particularly in targeted cancer therapy, blood vessel cleaning, and organ repair. The concept of nanosubmarines operating within blood vessels is vividly described.
4. **Highlighting Future Trends:** It discusses evolving trends, including multi-functional nanorobots, energy harvesting mechanisms, and the concept of swarm nanorobots, indicating the forward-looking nature of the research.

Weaknesses:
1. **Limited Discussion on Technical Challenges:** While applications are well-articulated, there is insufficient elaboration on the technical hurdles such as precise control of nanorobots, biocompatibility issues, immune response, and long-term safety concerns.
2. **Regulatory and Ethical Considerations:** Although ethical concerns are briefly mentioned, there is little in-depth discussion about regulatory pathways, potential risks, and societal implications of deploying nanorobots in humans.

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3. **Lack of Experimental Data:** The paper primarily reviews conceptual and developmental aspects. It lacks specific experimental results or clinical trial data, which would strengthen the discussion on practical feasibility.
4. **Broad and Generalized Content:** Some sections, such as applications, are somewhat broad and lack detailed technical specifications or recent advances in nanorobot fabrication techniques.