

## REVIEWER'S REPORT

Manuscript No.: IJAR-52472

Date: 27-06-2025

**Title:** Human Chimerism: A Systematic Review of Mechanisms, Cases, and Clinical Implications

### 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 Aamina

**Date:** 26-06-2025

### Reviewer's Comment for Publication.

### General Evaluation:

This manuscript offers a comprehensive and well-structured review of the complex and multifaceted phenomenon of human chimerism. It presents a clear classification of the different types, explores the biological mechanisms underpinning them, and addresses the clinical and forensic ramifications. The study is timely, scholarly, and adds significant value to ongoing discussions in genetics, medicine, and legal medicine.

### Abstract Evaluation:

The abstract is succinct yet informative. It outlines the scope of the review, identifies the major categories of human chimerism, and highlights key clinical and forensic implications. The balance between scientific detail and readability is well-maintained, making it accessible to both specialists and interdisciplinary audiences.

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### Introduction Evaluation:

The introduction effectively contextualizes the subject matter by connecting the biological concept of chimerism to its mythological origin. It clearly distinguishes chimerism from genetic mosaicism and articulates its implications in a broad biomedical and societal framework. The reference to the historical development of chimerism recognition since 1953 provides a valuable perspective on how the field has evolved. The mention of maternal-fetal microchimerism as a common phenomenon highlights the relevance and prevalence of the topic, countering earlier assumptions of its rarity.

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### Scientific Merit and Scope:

The review displays thorough scholarship by classifying chimerism into four main types: natural, artificial, blood, and tetragametic. This structured approach allows for clarity and comprehensive coverage. The discussion on diagnostic complexity and forensic consequences reinforces the depth and significance of the subject. The manuscript also successfully bridges basic biological mechanisms with practical medical and legal challenges.

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### Literature Integration:

The use of primary sources and citations to landmark studies enhances the credibility of the review. The references to both early discoveries and modern genetic techniques reflect a solid grasp of the historical and technological progression in this field.

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### Relevance and Impact:

This work has substantial implications across several domains. Medically, it addresses diagnostic ambiguities in transplantation, autoimmunity, and genetic testing. Legally, it raises questions about identity, maternity, and paternity in forensic cases. Scientifically, it invites further exploration into the boundaries of individual genetic identity.

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### **Conclusion:**

The manuscript provides an insightful and well-rounded examination of human chimerism. It captures the complexity of the phenomenon while clearly articulating its implications for research, clinical practice, and ethics. The content is intellectually engaging and scientifically rigorous, with a tone appropriate for publication in a high-impact biomedical journal.

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