

Review Form 3

Journal Name:	Archives of Current Research International
Manuscript Number:	Ms_ACRI_129939
Title of the Manuscript:	Dissemination of carbapenemases in Brazil: an integrative review
Type of the Article	Review Article

General guidelines for the Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound. To know the complete guidelines for the Peer Review process, reviewers are requested to visit this link:

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PART 1: Comments

	Reviewer's comment	Author's Feedback <i>(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</i>
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 makes a significant contribution to the growing body of literature on antimicrobial resistance, particularly in relation to carbapenemase-producing organisms in Brazil. The global rise of carbapenem resistance is a pressing public health problem, and the results of this review are essential to understand the epidemiological trends and mechanisms of resistance specific to Brazil. Synthesizing studies conducted from 2020 to 2024, the manuscript provides a synthesis view of the genetic diversity of resistance mechanisms, such as the blaKPC and blaNDM genes, and their implications for clinical practice. This methodology provides critical perspectives for researchers, healthcare professionals, and policymakers engaged in the formulation of efficacious strategies to mitigate diseases attributable to resistant microbial entities. In addition, the manuscript emphasizes the urgent need for targeted interventions in high-risk regions in Brazil, where resistance profiles vary widely. The manuscript focuses on public health and global health security, making it a resource for shaping policy and improving outcomes in regions struggling with antimicrobial resistance. The results of the study are also timely given the growing global interconnectedness that is facilitating the spread of resistant pathogens across borders.	
Is the title of the article suitable? (If not please suggest an alternative title)	The title " Dissemination of carbapenemases in Brazil: an integrative review " is suitable as it accurately conveys the scope and focus of the manuscript. However, it could benefit from slight adjustments for greater clarity, particularly if the review is focused on bacteria in medical settings. Possible option (at the discretion of the author) - "Dissemination of carbapenemases in Gram-negative bacteria from medical settings in Brazil: an integrative review"	

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<p>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.</p>	<p>The abstract effectively summarizes the study's objectives, methodology, and major findings. However, to enhance its impact, cohesiveness and clarity, consider the following revisions (at the discretion of the author):</p> <p>Antimicrobial resistance in bacteria with carbapenemase activity is a growing public health problem of global proportions. This integrative review synthesizes data from 26 scientific articles published between 2020 and 2024 to analyze the dissemination and genetic diversity of carbapenemases in Brazil. Data were retrieved from the National Library of Medicine (PubMed) and the regional portal of the Virtual Health Library (BVS). The review highlights significant regional variability in carbapenemase prevalence, with the blaKPC gene being the most frequently identified resistance mechanism across multiple Brazilian states. The identification of novel trends, including the simultaneous presence of blaNDM and blaKPC genes in isolates of <i>Proteus mirabilis</i> and <i>Serratia marcescens</i>, in addition to the observation of blaNDM in <i>Klebsiella aerogenes</i>, highlights the intricate nature of antimicrobial resistance patterns. The state of Pernambuco is notable for reporting the first identification of blaVIM-2 in <i>Acinetobacter baumannii</i> and the blaOXA-23-like and blaOXA-143 genes. These findings emphasize the widespread cohabitation of resistance genes, with mobile genetic elements facilitating intra- and interspecies transfer among Gram-negative bacilli. Understanding this genetic diversity is crucial for developing targeted public health interventions. The study underscores the urgent need for enhanced genomic surveillance, robust infection prevention measures, and strengthened antimicrobial stewardship programs to address the growing threat of multidrug-resistant organisms in Brazil and mitigate their impact on global health.</p>	
<p>Is the manuscript scientifically, correct? Please write here.</p>	<p>The main strengths include unquestionable relevance, emphasis on genetic mechanisms of resistance, regional variability, and integration of data from several Brazilian states. The comments and suggestions that I left in the text of the original manuscript in my opinion can improve the article.</p> <p>For example,</p> <p>Many articles in this review provide data not only on isolated genes, but also on sequence type bacteria (ST). Including these data in the table, figures, and the article as a whole would greatly enhance your publication.</p> <p>Also, the discussion and analysis can be extended by:</p> <ul style="list-style-type: none"> - Searching for possible causes of carbapenemase-associated resistance and the correlation between phenotypic and genotypic resistance. - Making explicit comparisons with global trends to contextualize the findings within the broader antimicrobial resistance landscape. - Exploring in greater depth the role of environmental factors, such as hospital infection control and antibiotic use policies, in shaping resistance patterns. 	
<p>Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.</p>	<p>The references presented in the review are relevant and cover the period 2020-2024. I would recommend the authors to analyse the layout of the reference list for technical inaccuracies.</p>	
<p>Is the language/English quality of the article suitable for scholarly communications?</p>	<p>The language is suitable for scientific communication, but some sections could use minor grammatical edits and improved sentence structure (left comments in the text). Also, there are sometimes non-English words (Portuguese?) in the text of the article.</p>	
<p>Optional/General comments</p>	<p>This manuscript provides a timely overview of the prevalence of carbapenemases in Brazil, offering valuable insights into resistance mechanisms and regional trends. By taking into account the suggested edits, the authors will be able to improve the clarity, impact and relevance of the manuscript, increasing its relevance in addressing antimicrobial resistance in Brazil.</p> <p>PLEASE SEE ATTACHMENT</p>	

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)
<p>Are there ethical issues in this manuscript?</p>	<p><i>(If yes, Kindly please write down the ethical issues here in details)</i></p>	

Reviewer Details:

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