

Review Form 3

Journal Name:	Asian Journal of Advanced Research and Reports
Manuscript Number:	Ms_AJARR_130471
Title of the Manuscript:	Autophagy: A Critical Review of Cellular Homeostasis and Pathophysiology
Type of the Article	Review Article

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.		
Is the title of the article suitable? (If not please suggest an alternative title)		
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.		
Is the manuscript scientifically, correct? Please write here.		
Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.		

## Review Form 3

Is the language/English quality of the article suitable for scholarly communications?		
<u>Optional/General</u> comments	The article provides a comprehensive overview of autophagy, a critical cellular process responsible for degrading and recycling damaged components to maintain homeostasis. It systematically examines:	Noted
	<b>1. Summary of Content</b>	
	<ul style="list-style-type: none"><li>• <b>Mechanisms:</b> The stages of autophagy (initiation, nucleation, elongation, fusion, and degradation) are clearly detailed with a strong focus on molecular pathways (e.g., mTOR and AMPK).</li><li>• <b>Physiological Roles:</b> It highlights autophagy's contributions to cellular quality control, energy balance, and development.</li><li>• <b>Pathological Implications:</b> The dual role of autophagy in health and disease is thoroughly discussed, emphasizing its complex functions in cancer, neurodegeneration, infectious diseases, and metabolic disorders.</li><li>• <b>Therapeutic Potential:</b> The article explores the modulation of autophagy through pharmacological agents (e.g., rapamycin, chloroquine) and novel strategies like nanomedicine and gene therapy.</li></ul>	Effected the revision
	<b>2. Strengths</b>	Revision made
	<ul style="list-style-type: none"><li>• <b>Clarity and Organization:</b> The content is well-structured, with logical transitions between mechanisms, roles, and therapeutic implications.</li><li>• <b>Depth of Analysis:</b> It delves deeply into the molecular underpinnings of autophagy, supported by references to pivotal studies and cutting-edge techniques.</li><li>• <b>Balanced Discussion:</b> The review adeptly balances the benefits and risks of autophagy modulation, such as its dual role in tumor suppression and promotion.</li><li>• <b>Future Directions:</b> The call for advancements in imaging and omics technologies adds a forward-looking perspective to the review.</li></ul>	Noted
	<b>3. Limitations</b>	
	<ul style="list-style-type: none"><li>• <b>Lack of Visual Aids:</b> Complex molecular mechanisms could benefit from diagrams or flowcharts to enhance reader comprehension.</li><li>• <b>Limited Case Studies:</b> While general therapeutic strategies are discussed, specific examples of clinical trials or patient outcomes would strengthen the applicability of the content.</li><li>• <b>Focus on Cancer and Neurodegeneration:</b> Other emerging areas (e.g., cardiovascular diseases) are briefly mentioned but deserve deeper exploration.</li></ul>	Effected

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	<p><b>4. Critical Insights</b></p> <p>The article effectively underscores autophagy's significance in maintaining cellular equilibrium and its intricate involvement in diseases. However, its therapeutic application is complex due to the context-dependent nature of autophagy. The exploration of nanomedicine and gene therapy as precise modulatory approaches presents an exciting frontier, though their clinical translation remains in early stages.</p> <p><b>5. Recommendations for Improvement</b></p> <ul style="list-style-type: none"><li>• Include graphical representations to simplify molecular pathways.</li><li>• Expand on autophagy's role in underexplored conditions (e.g., autoimmune disorders).</li><li>• Provide an analysis of ongoing clinical trials to link theoretical insights with practical advancements.</li></ul> <p><b>6. Conclusion</b></p> <p>This article is a robust resource for understanding autophagy's multifaceted roles. It is well-suited for researchers and healthcare professionals aiming to explore the intersection of molecular biology and therapeutic innovation. The discussion of future directions encourages the integration of advanced technologies to address current limitations in autophagy-targeted treatments.</p>	
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PART 2:

	<b>Reviewer's comment</b>	<b>Author's comment</b> <i>(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)</i>
<b>Are there ethical issues in this manuscript?</b>	<i>(If yes, Kindly please write down the ethical issues here in details)</i>	