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| Journal Name: | [**International Journal of Pathogen Research**](https://journalijpr.com/index.php/IJPR) |
| Manuscript Number: | **Ms\_IJPR\_136818** |
| Title of the Manuscript: | **Bioenergetics perspective on any viral replication and clearance extrapolated to SARS–CoV–2–orchestrated pathophysiology** |
| Type of the Article | **Original Research Article** |

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| PART 1: Comments | | |
|  | Reviewer’s comment **Artificial Intelligence (AI) generated or assisted review comments are strictly prohibited during peer review.** | **Author’s Feedback** (It is mandatory that authors should write his/her feedback here) |
| **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 study provides the scientific community with thorough research on how kinetic and thermodynamic parameters for viral replication and depletion affect activation energies of viral replication, clearance, and cell death. This is done by analyzing Copeland's model, Eyring version of activation energy and dimensionless equilibrium constants for viral replication in Nef-positive HSC-F cells and Nef-negative HSC-F cells. This manuscript’s study is important as it emphasizes that appropriate therapeutic interventions should be used early against viral infection such as SARS-CoV-2. |  |
| **Is the title of the article suitable?**  **(If not please suggest an alternative title)** | No. The use of the words, “any viral replication” makes the study vague and not objective.  Suggestion: Bioenergetics modelling in Viral Replication and Clearance with Applications to SARS-CoV-2 | Thank you. Suggestion is adopted with slight modification. |
| 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. | The abstract is not comprehensive. I suggest the author mentions the methods used. Also, summarizing the numerical data in abstract will improve the understanding of the reader. | Thank you very much. Your suggestions are put into effect within word-number limit of SDI |
| Is the manuscript scientifically, correct? Please write here. | Yes. The manuscript is scientifically sound as it uses recognized models i.e. Eyring's theory and Copeland’s model for activation energy. The use of SARS-CoV-2 data from Nef-positive and Nef-negative HSC-F cells is also a reasonable scientific practice to inform early therapeutic interventions. |  |
| **Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.** | The references are recent since they are within five years before this study (2021 to 2024).  For sufficiency, references describing the choice methods should be added to beef up the work. Methods used by other researchers show the method’s efficiency and its establishment.   Example(APA): Keusch, P. (2003). Eyring equation. | Data explored were in the literature containing information about methods that were not used in this study. Computations were done based on derived equations and existing equations such as Copeland and Eyring equations |
| Is the language/English quality of the article suitable for scholarly communications? | The english is suitable for scholarly communications with minor edits e.g.  Page 17: “weakly evaluation” should be adjusted to “weekly evaluation” | Thank you very much; corrections are made. |
| Optional/General comments | The manuscript is relevant in the scientific community as it utilizes bioenergetics to inform that therapeutic interventions should be used early. With the corrections mentioned above, the manuscript will suite publication. |  |

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| **PART 2:** | | |
|  | **Reviewer’s comment** | **Author’s Feedback** (It is mandatory that authors should write his/her feedback here) |
| **Are there ethical issues in this manuscript?** | *(If yes, Kindly please write down the ethical issues here in details)* |  |