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| Book Name: | [Contemporary Research and Perspectives in Biological Science](https://www.bookpi.org/bookstore/product/contemporary-research-and-perspectives-in-biological-science-vol-1/) |
| Manuscript Number: | **Ms\_BPR\_3867** |
| Title of the Manuscript:  | **Mitochondrial Function and Metabolic States: On the Differences between Brain In Vitro and In Vivo Conditions and Monitoring** |
| Type of the Article | **Book chapter** |

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| PART 1: Comments |
|  | Reviewer’s comment | Author’s Feedback *(Please correct the manuscript and highlight that part in the manuscript. 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.** | The manuscript for a book chapter titled *"Mitochondrial Function and Metabolic States: On the Differences between Brain In Vitro and In Vivo Conditions and Monitoring"* is crucial for advancing our understanding of brain energy metabolism and neurophysiology. By comparing mitochondrial function under in vitro and in vivo conditions, the study highlights key differences that may impact experimental outcomes and interpretations. This research helps bridge the gap between laboratory models and real biological conditions, ensuring more accurate insights into neurological disorders and brain energy dynamics. The findings are particularly relevant for developing better diagnostic tools, therapeutic strategies, and enhancing the validity of preclinical studies related to brain health and disease |  |
| **Is the title of the article suitable?****(If not please suggest an alternative title)** | Yes |  |
| 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 highlights the importance of real-time, in vivo mitochondrial monitoring and emphasizes the potential of a new medical device for improving patient care.However, The abstract is somewhat vague and could be more structured. It should clearly state the study’s aim, methods, key findings, and implications. Phrases like *"improve significantly the outcome of patients"* are too broad. The author should specify the type of critical care conditions or outcomes being referred to. |  |
| **Is the manuscript scientifically, correct? Please write here.**  | Yes |  |
| **Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.** | The author should ensure consistency in reference formatting (e.g., italics for journal names). Many references are dated (1950s–1960s). The author should include more recent studies to provide an up-to-date perspective. |  |
| Is the language/English quality of the article suitable for scholarly communications? | The manuscript contains several grammatical errors and awkward phrasings. The headings could be more descriptive. Use headings like *"In Vivo Monitoring Techniques"* or *"Comparison of Metabolic States"* to guide readers. The authors should ensure consistent use of technical terms (e.g., NADH redox state, metabolic states) |  |
| Optional/General comments | 1. The introduction is lengthy and contains too much background information. The author shoud streamline the historical context and focus more on the rationale for the current research.
2. The purpose of the chapter is not explicitly stated. The author should include a clear statement of the chapter's objective toward the end of the introduction.
3. Some sentences are convoluted. For example: *"The pioneer work of Chance, Williams, Connelly Theorell and other collaborators, in the early 1950's..." can be* Simplified to *"The pioneering work of Chance, Williams, and others in the 1950s..."*
4. The methodology lacks detailed information on experimental design, instrumentation, and procedures. The authors can provide step-by-step details on how the in vivo measurements were performed, including animal models, device specifics, and calibration techniques.
5. Terms like *"Penta Chloro Phenol"* and *"fiber optic fluorometry"* could be confusing to general readers. Authors should include brief explanations or definitions for specialized terms.
6. The methodology section references figures, but the description of these figures is not always clear. The authors should ensure each figure is fully explained within the text.
7. The discussion of NADH states (e.g., States 3, 4, and 5) could be clearer. Tables or bullet points can be used to summarize the differences between these states.
8. Figures need to be high-resolution and labeled clearly. Authors should ensure figure legends are detailed and informative.
9. The comparison between in vitro and in vivo conditions is complex. The authors can include a simplified diagram summarizing these comparisons for better comprehension.
10. The conclusion is repetitive and lacks a concise summary of implications. It raises crucial questions but offers no direction for future research.
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| **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)*** |
| **Are there ethical issues in this manuscript?**  | ***(If yes, Kindly please write down the ethical issues here in details)*** |  |

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| **Reviewer Details:** |
| **Name:** | **Samuel Abiodun Kehinde** |
| **Department, University & Country** | **Ajayi Crowther University, Nigeria** |