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| Book Name: | **Unveiling the Hidden Costs: Part2: Energy Imbalance Based Cancer Propagation Algorithm (EIBC-PA)** |
| Manuscript Number: | **Ms\_BPR\_** **5574** |
| Title of the Manuscript:  | **Unveiling the Hidden Costs: Part2: Energy Imbalance Based Cancer Propagation Algorithm (EIBC-PA)** |
| Type of the Article | **COMPLETE BOOK** |

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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 *(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.** | **Yes,1. This book is intended for a wise audions like Researchers, Medical professionals and Students as well who are studying oncology related. 2. This book is offered as a contribution to the ongoing conversation in oncology. 3. Consequently, it illustrates why the introduction of EIBC-PA, a new algorithm, is strong since it depicts cancer growth arising from energetic imbalances rather than mainly from the accumulation of mutations. 4. Integrating insights from many disciplines and offering both simulations and real-world examples increases the book’s attractiveness to researchers, clinicians, students, and systems scientists alike.** |  |
| **Is the title of the article suitable?****(If not please suggest an alternative title)** | **No, "Part 2" phrasing is ambiguous in the title, without a clear "Part 1," it might confuse readers. Slight modification is required.** |  |
| 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. | **Firstly, Part-1 introduction or brief overview is not presented and it is not clear to follow the part-2 without having difficulty. There is no specific abstract presented in this manuscript other than preface section. Secondly there is no chapterwise organization presented in the book.**  |  |
| **Is the manuscript scientifically, correct? Please write here.**  | **Moderate, Incomplete, as Chapter-4 is missing and Figure caption for Tables, Figure 1 and Figure 2 are not clear or missing. In the Appendix B, Figure B1 and Figure B2 are hard to find in the body of the text. As author mentioned case studies but not presented.** **The structure of the computational framework of the new proposed algorithm** **EIBC-PA is not presented well, although it might gain further clinical relevance through testing on a variety of biological datasets. Simulation systems are not described how AI systems can rapidly simulate multiple future trajectories under different therapeutic conditions. No specific dataset/source mentioned. No results showed or compared with existing algorithms.** **Without sensitivity analysis on α, EB, Enormal, etc., it’s unclear how robust the model is? Only total energy (Esupply) is tracked, but cells compete for multiple substrates (glucose, oxygen, amino acids). Linear Energy Demand–Supply Response, The term R = α\*(Edemand − Esupply) assumes a linear transfer of “excess” demand directly into converting normal cells into cancer cells. In reality, energy shortage effects on cell fate are highly non-linear, context-dependent, and mediated by signaling pathways. There’s no clear notion of “one iteration = one day” (or hour, etc.).** **Unrealistic Cell Counts M -= R , N += R can yield non-integer (fractional) cell counts, which have no clear biological interpretation. Real cell populations should be represented as integers or via probability distributions.** **The bifurcation into constant proliferation factors (rB, rnormal) neglects how cell division slows down under stress, crowding, or immune attack is to be modified in the specified algorithm.** |  |
| **Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.****-** | **Not sufficient and most of the references are outdated , there is no recent oncology research development articles referred in the manuscript.**  |  |
| Is the language/English quality of the article suitable for scholarly communications? | Ok, accepted |  |
| Optional/General comments | **Using additional visual representations or flowcharts of each algorithmic step could help people without a computational background to better understand the essential techniques. Appendices are not cited in the body of the book text properly except Appendix B. It may be valuable to explore how the algorithm handles cases with mixed metabolic behaviors or to consider extensions that integrate immune system interactions. Simulation results of the proposed algorithm is not clearly shown.** |  |

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| **PART 2:**  |
|  | Reviewer’s comment | Author’s comment *(if agreed with the 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?**  |  |  |

**Reviewer details:**

**Tiruveedula Gopi Krishna, Adama Science and Technology University, Ethiopia**