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Peer Review

Review of: "The Steady State Approximation in Enzyme Kinetics: Reflections in Its Centennial Year"

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The manuscript effectively revisits foundational enzyme kinetic models and offers valuable insights into potential ambiguities in interpreting catalytic parameters such as Km and kcat, while questioning the universal validity of the Haldane relationship. The work is intellectually stimulating and relevant to both theoretical enzymology and practical biochemical interpretation. However, the manuscript remains predominantly conceptual and would benefit from clearer justification of assumptions, improved structural organization, and inclusion of numerical simulations or experimental examples to strengthen and validate the theoretical arguments. Additionally, a more explicit comparison with existing analytical and computational kinetic frameworks would help clarify the novelty and practical implications of the proposed reinterpretation, thereby enhancing the overall scientific impact and clarity of the article.

Declarations

Potential competing interests: No potential competing interests to declare.

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