

Peer Review

Review of: "Thiazole Schiff Bases as Potential Breast Cancer Drugs through Design, Synthesis, and In Silico Analysis"

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Review of "Design, Synthesis, and In-Silico Analysis of Thiazole Embedded Schiff Base Derivatives for Breast Cancer Therapeutic Potential"

Dear Peer Review Team, Qeios,

I appreciate the opportunity to review this manuscript by Maher Afroj Khanam et al. The study presents a valuable exploration of thiazole-embedded Schiff base derivatives for their potential in breast cancer therapy. The main idea is scientifically sound, and the synthesis structure analysis is detailed. However, I have several observations for improvement:

Biological Evaluation: The manuscript lacks biological evaluation of the synthesized compounds. It is crucial to test the most promising derivatives (e.g., TZ6, TZ7, TZ8) in vitro on cancer cell lines to validate cytotoxicity, haemolytic activity, nitric oxide levels, and mitochondrial effects. This would substantiate the in silico findings with experimental evidence.

Design Rationale: The rationale for designing the derivatives should be clearly articulated, linking structural modifications to therapeutic potential.

Synthesis Method: The synthesis method must include proper references. Additionally, detailed reaction mechanisms, presented as figures, would enhance clarity.

Discussion Section: The discussion section is repetitive, merely reiterating the results. It should be restructured to provide a critical analysis, comparing findings with similar published works.

Introduction: The introduction should include references to similar studies in this field to provide context and emphasize the novelty of the research.

Abstract: The abstract is incomplete. It must be rewritten to clearly state the background, objectives, key findings, and conclusion.

ADMET Analysis: Compare the ADMET properties of synthesized compounds with standard anticancer drugs to establish their therapeutic potential.

Thiosemicarbazone Preparation: Clarify the substituents used for thiosemicarbazone synthesis, supported by well-illustrated figures.

By addressing these points and incorporating in vitro validations, the study would significantly strengthen its impact and reliability. Overall, I recommend the manuscript for publication with the suggested revisions.

Best regards,

Prof. Dr. Howayda E. Khaled

Declarations

Potential competing interests: No potential competing interests to declare.