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

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Potential competing interests: No potential competing interests to declare.

Research Article

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

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The research article concerns the synthesis of 10 thiazole-embedded Schiff base derivatives, their characterization and*in-silico* analysis to evaluate the chemical stability and reactivity of the synthesized compounds. The authors use the method of molecular docking against multiple therapeutic targets related to fatty acid synthase and cell proliferation (PDB IDs: 4FX3, 4OAR, 3NUP, and 3ERT,) alongside ADME and Lipinski rule to assess the inhibitory effects of these new compounds on breast cancer cells. Two of 10 compounds marked as TZ6 and TZ8 emerged as promising candidates with docking scores of -8.0 kcal/mol and -8.2 kcal/mol, respectively, against the 4FX3 protein. These findings contribute to a deeper understanding of thiazole-embedded Schiff base derivatives, showcasing their potential for future medicinal and scientific applications.

The publication needs some corrections to eliminate the mistakes as such: part 2.2.2 mixrue where should be mixture, in the same part the word elucidated rather should be changed to confirmed.

In the experimental procedure the double numbering of the same compounds is not clear for me for example compound 4 – IR has 5 and NMR spectra as also 5 - why?

The same problem concerns the compound 5 with spectra numbered 6

And compound 6 with spectra numbered as 7.

Furthermore, all compounds should be confirmed by elemental analysis or spectrometry mass with high resolution.

In part 3, for me is not clear, and authors did not explain where did the compounds TZ4 –TZ10 come from, because in the synthesis scheme are only 3 compounds marked as TZ1-TZ3.