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REVIEWER'S REPORT

Manuscript No.: IJAR- 57318

Title: Unlocking the Anticancer Efficacy of 4-Hydroxy-3-Methoxy Cinnamic acid: "A Predictive Computational Study for Drug Development."

Recommendation:
Accept as it is .....
Accept after minor revision...
Accept after major revision .....
Do not accept (*Reasons below*) .....

Rating	Excel.	Good	Fair	Poor
Originality		Good		
Techn. Quality	Excellent			
Clarity	Excellent			
Significance	Excellent			

Reviewer's ID: Dr. Sumathi

Detailed Reviewer's Report

1. ***In silico*** **prediction refers to performing biological or chemical experiments, simulations, and analysis entirely within a computer, rather than in a laboratory (in vitro/in vivo). It accelerates drug discovery, toxicity assessment, and genetic variant analysis by predicting molecular behavior, binding affinity, and pathogenicity using algorithms, modeling, and AI.**
2. **Tyrosine kinases are enzymes that act as "on-off" switches for vital cellular functions by transferring a phosphate group from ATP to proteins (phosphorylation). They primarily regulate cell growth, differentiation, migration, metabolism, and programmed cell death (apoptosis). When mutated or overactive, they drive cancer growth.**
3. **Tyrosine kinases are enzymes linked to diseases characterized by abnormal cell signaling, most notably cancers (leukemia, breast, lung, gastrointestinal stromal tumors), inflammatory conditions (rheumatoid arthritis, psoriasis), and fibrotic diseases. Dysregulated kinase activity drives uncontrolled cellular proliferation, while targeted tyrosine kinase inhibitors (TKIs) are used to treat these conditions.**

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4. **"Unlocking the Anticancer Efficacy" refers to a multifaceted research approach aimed at enhancing the therapeutic impact of natural compounds, existing drugs, and novel agents, while overcoming limitations like poor bioavailability, drug resistance, and systemic toxicity. This concept involves utilizing modern technology, such as nanotechnology, AI, and combination therapies, to turn promising pre-clinical results into effective clinical treatments.**
5. **Vitamin D is often referred to as an "anti-cancer vitamin" due to its critical role in inhibiting cancer cell development, promoting cell differentiation, and lowering inflammation. It helps suppress immune cells that allow tumors to grow and may improve survival rates, particularly for deficiencies.**
6. **Lung ca (lung cancer) is a malignant disease originating in lung tissue, often caused by genetic damage from smoking or inhaling toxins, causing uncontrollable cell growth. It is a leading cause of cancer death, with key types being non-small cell lung cancer (NSCLC) and small cell lung cancer (SCLC).**
7. **Key words are good.**
8. **This research is medically very valued one.**
9. **Pictures are awesome.**
10. **Abstract is understandable.**
11. **Summar points Can be included.**
12. **References should be with alphabetical order.**
13. **After a small changes good to publish in your journal.**