Garcinol sensitizes breast cancer cells to Taxol through suppression of caspase-3/iPLA$_2$ and NF-κB/Twist1 signaling pathways in mouse 4T1 breast tumor model

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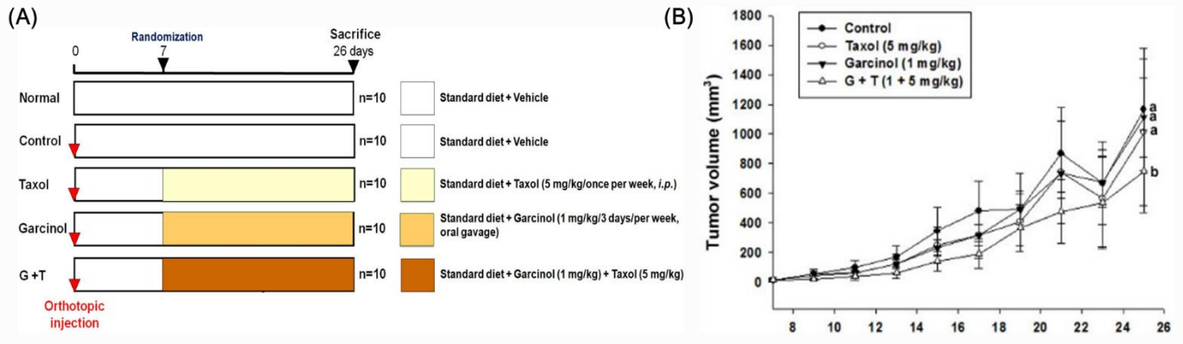
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Introduction

- Clinical experience suggests that patients with metastatic triple-negative breast cancer (TNBC) relapse quickly and often have chemotherapy resistance.
- Our goal is to seek effective combination regimens and determine the mechanisms underlying the regimens' effects.
- Our current findings provide the first experimental evidence that a combination of a low dose of Taxol and garcinol is a promising therapeutic strategy for controlling advanced or metastatic breast cancer. Finally, our results also point to the role of NF-κB/Twist1 and caspase-3/iPLA$_2$ signaling pathways might be as a biomarker to predict tumor response to treatment.
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Results

Figure 1.



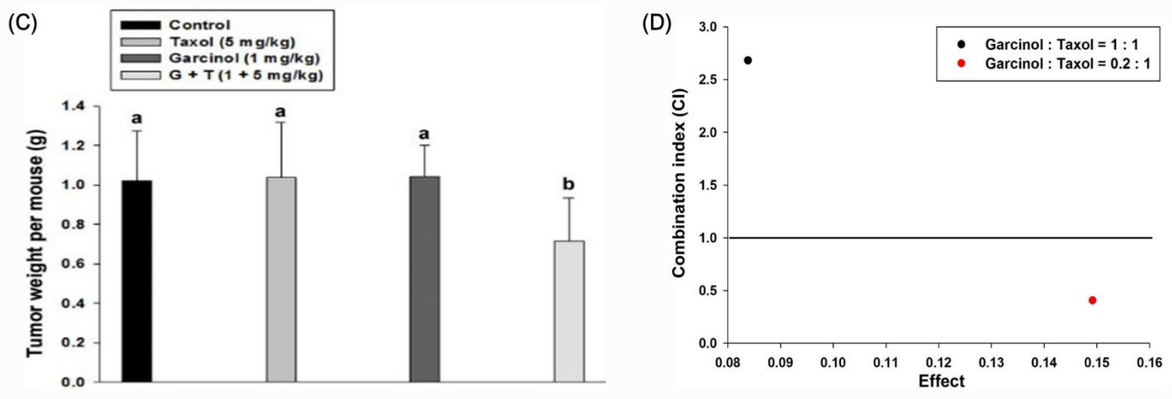


Figure 3.

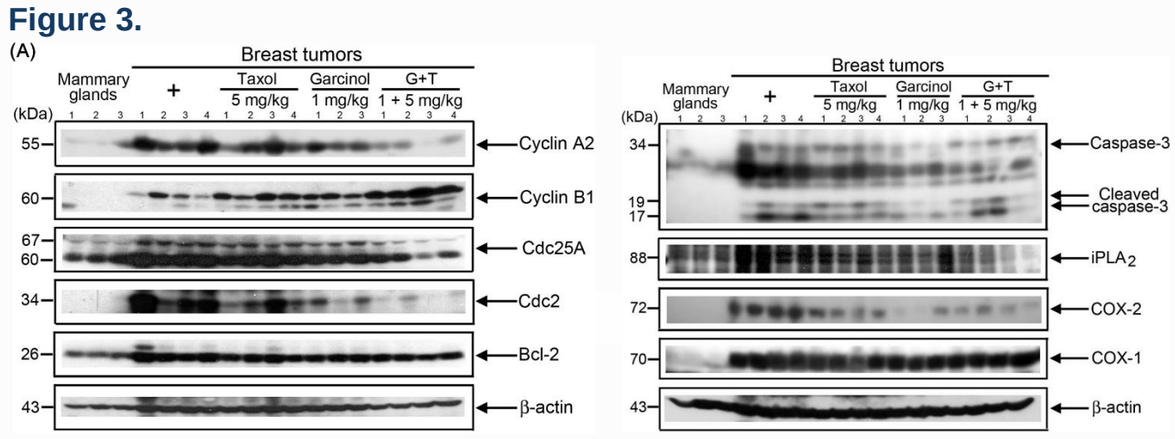


Figure 2.

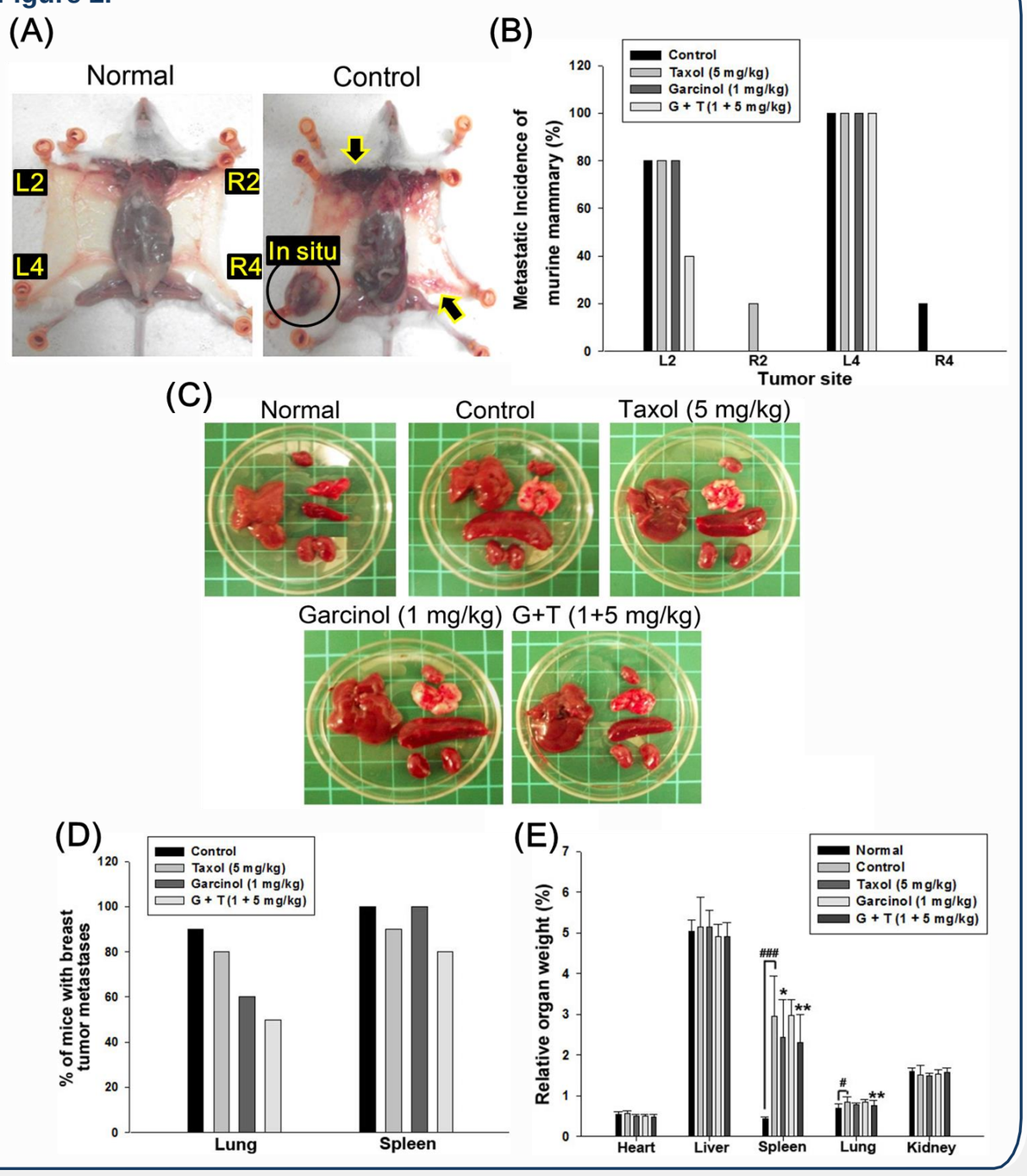


Figure 4.

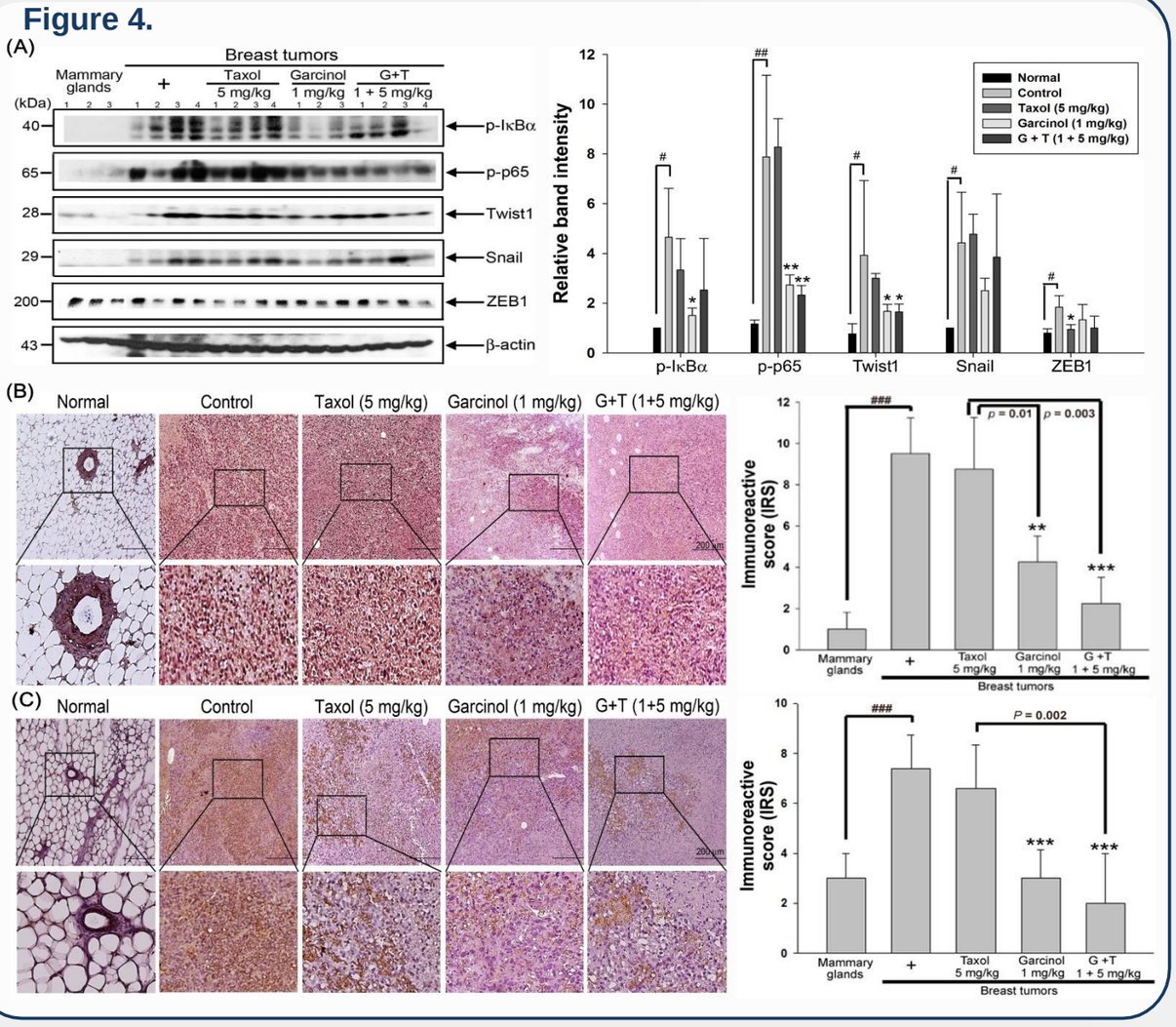
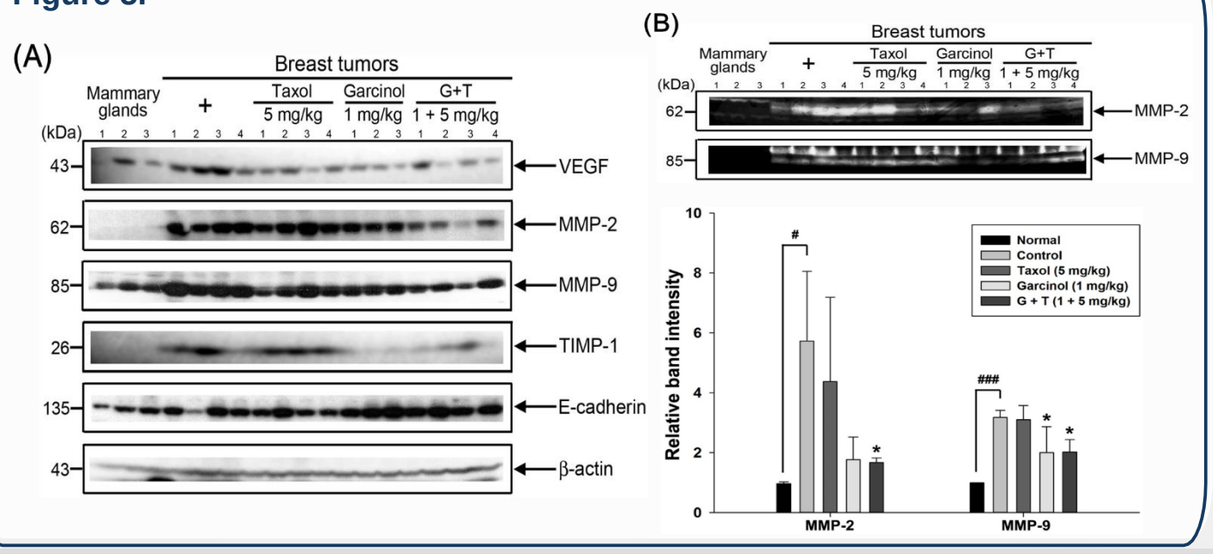
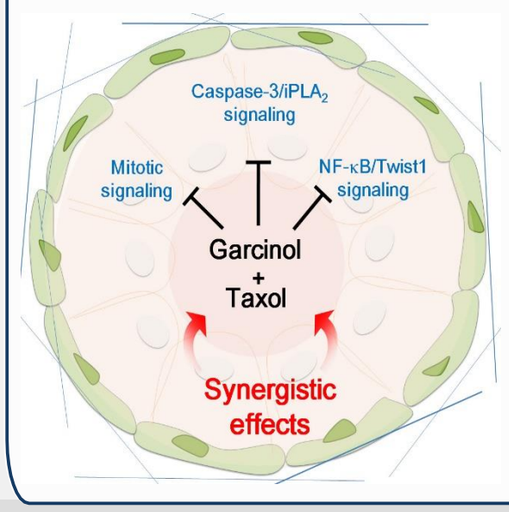


Figure 5.



Conclusion



- A combination of garcinol and Taxol might be an attractive therapeutic strategy to treat breast cancer progression and metastasis, especially in patients with TNBC.
- Garcinol is an iPLA$_2$ and Twist1 inhibitor, suggesting that it may be used in combination with other agents to overcome adverse effects and improve chemotherapeutic efficacy.