6-pentadecyl Salicylic Acid Improves the Antineoplastic Effect and Decreases Myelosupression Caused by **Chemotherapeutic Drugs**



INTRODUCTION

Chemotherapy relies on the use of drugs to destroy cancer cells. Some chemotherapeutics, such as 5-Fluorouracil (5-FU) and Carboplatin (CbPt), cause myelosuppression, a severe adverse effect. Anacardic acids (AA) are a mixture of organic compounds found in different plants. The 6pentadecyl salicylic acid (6SA) is the most abundant AA in Amphipterygium adstringens, which is an endemic plant used in traditional Mexican medicine to treat gastrointestinal disorders. This compound shows antitumor and immunomodulatory effects in xenograft tumor models. However, there are no reports of the antineoplastic and side effects of 6SA combined with a classical antineoplastic agent in an immunocompetent animal model.

OBJECTIVE

To investigate the antineoplastic potential of the combined treatment of 6SA with 5-FU or CbPt in an immunocompetent animal model of stage IV breast cancer (autologous 4T1 cells).





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Figure 1. 6SA inhibits tumor growth. Tumor volume (A and B) and tumor weight were registered. Mean ± SEM (A and B), Mean ± SD (C), n=6. a5-FU, bCbPt, c6SA, #6SA/5-FU, and h6SA/CbPt p<0.05 Two-Way ANOVA post-hoc Bonferroni vs. control, *p<0.05 One-Way ANOVA post-hoc Bonferroni vs. control, ^avs. 5-FU and ^bvs. CbPt. ^α p<0.05 Two-Way ANOVA post-hoc Bonferroni CbPt vs. 6SA/CbPt.



Co-treatments 6SA + CbPt

6SA + 5-FU

formation in 4T1 cells observed in lung tissue of animals were registered. Mean ± SD, n=6. *p<0.05 One-Way ANOVA posthoc Bonferroni vs. control, ^avs. 5-FU, ^bvs. CbPt, and ^cvs 6SA.

CONCLUSIONS

6SA has important antitumor and antimetastatic effects.

- 6SA improves the antineoplastic efficiency of chemotherapeutic agents and protects the organism against the toxicity that these generate.
- Anacardic acids, specifically 6SA, is an important candidate to be used as a therapeutic agent for breast cancer.

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RESULTS



marrow (B) apoptosis were determined. Mean ± SD, n=6. *p<0.05 One-Way ANOVA post-hoc Bonferroni vs. control, vs. ^a5-FU, ^bCbPt, and ^c6SA.

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