

Effects of a Bioactive Subfraction of *Strobilanthes Crispus* on the Tumour Growth, Body Weight and Haematological Parameters in 4T1-Induced Breast Cancer Model

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Abstract : *Strobilanthes crispus* (*S. crispus*), is a Malaysian herb locally known as 'Pecah kaca' or 'Jin batu' which have demonstrated potent anticancer effects in both in vitro and in vivo models. In particular, *S. crispus* subfraction (SCS) significantly reduced tumor growth in N-methyl-N-Nitrosourea-induced breast cancer rat model. However, there is paucity of information on the effects of SCS in breast cancer metastasis. Thus, in this study, the antimetastatic effects of SCS (100 mg/kg) was investigated following 30 days of treatment in 4T1-induced mammary tumor (n = 5) model. The response to treatment was assessed based on the outcome of the tumour growth, body weight and hematological parameters. The results demonstrated that tumor bearing mice treated with SCS (TM-S) had significant ($p < 0.05$) reduction in the mean tumor number and tumor volume as well as tumor weight compared to the tumor bearing mice (TM), i.e. tumor untreated group. Also, there was no secondary tumor formation or tumor-associated lesions in the major organs of TM-S compared to the TM group. Similarly, comparable body weights were observed among the TM-S, normal (uninduced) mice treated with SCS and normal (untreated/control) mice (NM) groups compared to the TM group ($p < 0.05$). Furthermore, SCS administration does not cause significant changes in the hematological parameters as compared to the NM group, which indicates no sign of anemia and toxicity related effects. In conclusion, SCS significantly inhibited the overall tumor growth and metastasis in 4T1-induced breast cancer mouse model suggesting its promising potentials as therapeutic agent for breast cancer treatment.

Keywords : 4T1-cells, breast cancer, metastasis, *Strobilanthes crispus*

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