

The Role Of Diallyl Trisulfide As A Suppressor In Activated-Platelets Induced Human Breast Cancer MDA-MB-435s Cells Hematogenous Metastasis

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Abstract : Accumulating evidence has been shown that diallyl trisulfide (DATS) from garlic may reduce the risk of developing several types of cancer. In view of the dynamic crosstalk interplayed by tumor cells and platelets in hematogenous metastasis, we demonstrate the effectiveness of DATS on the metastatic behaviors of MDA-MB-435s human breast cancer cell line co-cubated with activated platelets. Indeed, our data identified that DATS significantly blocked platelets fouction induced by PAF, followed by the decreased production of TXB2. DATS was found to dose-dependently suppressed MDA-MB-435s cell migration and invasion in presence of activated platelets by PAF in vitro. Furthermore, the expression, secretion and enzymatic activity of matrix metalloproteinase (MMP)-2/9, as well as the luciferase activity of upstream regulator NF-κB in MDA-MB-435s, were obviously diminished by DATS. In parallel, DATS blocked upstream NF-κB activation signaling complexes composed of extracellular signal-related kinase (ERK) as assessed by measuring the levels of the phosphorylated forms.

Keywords : DATS, ERK, metastasis, MMPs, NF-κB, platelet

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