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## Exploring the synergistic effect and mechanism of *Spatholobus Suberectus* Dunn extract and doxorubicin in breast MCF-7/ADR cells

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Breast cancer is one of the most prevalent cancers in women and the second most common cause of cancer mortality. Chemotherapy is the major strategy for treating the breast cancer. The doxorubicin can improve the survive rate of breast cancer patients significantly. However, the toxicity and drug resistance are the main problem of using the doxorubicin. Grape seed extract (GSE) can reverse the multiple drug resistance by down regulated the NF-kB and YB-1 activity which mediated by MAPK/ERK in A2780/T. We obtained the most active *Spatholobus Suberectus* Dunn extract (SSP) by optimizing extraction time, the volume of percolation, and the concentration of ethanol. The inhibitory effect of SSP and GSE on breast cancer resistant

strains (MCF-7/Adr) is similar, but SSP shows a better synergistic effect than GSE when combining doxorubicin. It suggests that there is another pathway working in the MCF-7/Adr regulate by SSP. Thus, we are exploring the active substance of SSP and the potential mechanism of synergistic effect by cell proliferation, adherent, apoptosis, cell cycle and the amount of protein which related in Estrogen receptor. The aim of the project is to illustrate the mechanism of synergistic effect of SSP and doxorubicin. It helps us understand the *Spatholobus Suberectus* Dunn, traditional Chinese medicine, in a comprehensive way.

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