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## NUTRITION

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## Isoliquiritigenin chemosensitizes to Doxorubicin and inhibits the cells growth of human uterine sarcoma cells

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Doxorubicin (Dox) is widely used for the treatment of several cancers. However, multi-drug resistance (MDR) is a major clinical problem and an important cause of treatment failure. How to increase chemosensitivity and reduce the dose of chemotherapeutic agents, in order to prevent drug side effects and the development of new chemotherapeutic agents are important. Uterine sarcoma is a rare gynecologic cancer. The patients sometimes are asymptomatic. It has the high degree of malignancy, poor prognosis and high mortality rate. It can often be misdiagnosed as uterine fibroids. Isoliquiritigenin (ISL) is the flavonoid with chalcone structure isolated from licorice root. ISL has been shown to possess significant anticancer activities in many cancer types. In this study, we investigated the antitumor effects of ISL on human uterine sarcoma cancer cell MES-SA and the multi-drug resistant human uterine sarcoma cancer cell MES-SA and the growth of cancer cells and increased the proportion of subG1 phase. Flow cytometry analysis indicated that ISL induced apoptosis and necrosis. In addition, ISL enhanced the autophagy associated protein expression of LC3B and apoptosis associated protein expression of cleaved-PARP. ISL also inhibited Bcl-2 and phospho-mTOR protein expression. Moreover, ISL inhibited the migration of the cancer cells. Taken together, ISL can inhibit human uterine sarcoma cancer cells through apoptosis as well as autophagy and increase the chemosensitivity to doxorubicin in multi-drug resistant human uterine sarcoma cancer cells MES-SA/Dx5 and MES-SA/DxR-1.

## Biography

Li-Chun Lin is currently a graduate student from Taipei Medical University of Nutrition and Health Sciences, Taiwan. She studies the effects of Chinese herbs and phytochemicals on cancer disease.

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