中文題目: 促使胃癌幹細胞化學藥物敏感化: Betulinic acid and isoliquiritigeniny

英文題目: Chemosensitize human gastric cancer stem cells with natural compounds betulinic acid and isoliquiritigenin targeting CD24 and LGR5

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**Introduction:** Chemotherapy is the main stray treatment for gastric cancer, but the currently available therapeutic drugs show limited efficacy. Recent studies suggested that gastric cancer stem cells may play an important role in drug resistance of chemotherapy. Therefore, new agents that selectively target gastric cancer stem cells in gastric tumor are urgently needed. Regarding to this concept, natural products may gain considerable important in this area for both cancer cell and cancer stem cell targeting. Betulinic acid (BA), a pentacyclic triterpenoid, and isoliquiritigenin (ISL), a chalconetype dietary compound derived from licorice, have been reported to process anti-tumor properties. However, the potential role of BA and ISL in the improvement of chemotherapy sensitivity of gastric cancer has not been evaluated.

**Material and Methods:** We cultured human gastric cancer MKN45 cells. The inhibitions of stemness-related protein expression markers in MKN45 by BA and ISL were identified by flow cytometry and western blotting.

**Results:** Our data display that 5-fluorouracil alone increased cancer stem cell surface marker CD24 and LGR5 expressions in MKN45 cells. Moreover, BA and ISL promoted human gastric cancer MKN45 cell apoptosis, and enhanced chemo sensitivity with combination of 5-fluorouracil by elimination of endoplasmic reticulum chaperone protein, glucose-regulated protein 78, and down-regulation of cancer stem cell surface marker, adenosine triphosphate-binding cassette subfamily G2, LGR5, CD24 and CD44.

**Conclusions:** BA and ISL may be promising agents in anti-gastric tumor therapy.