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END and ENL inhibit the proliferation, migration and invasiveness of ovarian cancer

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Ovarian carcinoma is the third most common malignancy and the fifth most fatal cancer among the gynecological cancers. Those of the epithelial origin account for 80%-90% of all types of ovarian cancer and are the deadliest, giving rise to 5-year survival rates of the patients lower than 30%. At present, chemotherapy is still among the most important treatment strategies along with surgery and radiotherapy, but drug resistance, poor prognosis and tumor recurrence remain to be the overwhelming challenges. Over the past years, natural substances, such as the mammalian lignans Enterodiol (END) and Enterolactone (ENL), have gained attention for their excellent activities against a broad range of cancers and low side effects. However, whether END or ENL can inhibit ovarian cancers is not clear. In this study, we found that the proliferation, migration and invasion characteristics of epithelial ovarian cancer derived ES-2 cells were severely limited by ENL and END in an incremental dose and time pattern. In the parallel tumor-bearing mouse model, ENL exhibited more effective tumor-suppressing capability and fewer side effects than END. These findings may help develop novel strategies for the treatment of ovarian cancers using ENL and END.

Biography

Zheng Zeng is a PhD student at Harbin Medical University, with major in Microbiology and Biochemical Pharmacy. Her research focuses on gynecological cancers and natural anticancer products. In 2016, she was funded by the Chinese government to study at Okayama University, Japan, for a year as an Exchange Student in Immunopathology under the guidance of Professor Akihiro Matsukawa, where she obtained plenty of clinical diagnosis experience. Currently, she is working on human intestinal bacteria for their biotransformation of phytoestrogen polymers in daily diet to the potent anticancer mammalian lignans END and ENL with ovarian cancer as the target and the underlying mechanisms involving cell cycle arrest, apoptosis and/or autophagy as her primary goals of research.

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