

**Physangulidine A, a withanolide from *P. angulata* as anticancer agent****LIM CHUNG LIANG**

*Physalis angulata* L. (Solanaceae) is a plant used widely as popular medicines. Extracts from this plant have been used in the treatment of malaria, asthma, hepatitis, dermatitis, liver problems, and rheumatism, as well as for their diuretic, antimycobacterial, antipyretic, and immunomodulatory properties. This plant was reported to exhibit potential anticancer properties, with *P. angulata* extracts found to exert strong antiproliferative effects and induce cell death by apoptosis in human oral squamous carcinoma and breast cancer cell lines. Withanolides are naturally occurring steroids with significant medicinal properties in suppressing cancer cell proliferation accompanied by apoptosis through inhibition of NF- $\kappa$ B. From this study, Physangulidine A which is a novel withanolide isolated from *P. angulata* was found to perturb the cell cycle and induce cell death by apoptosis in prostate cancer cells.

**紹介論文**

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**Physangulidine A, a Withanolide from *Physalis angulata*, Perturbs the Cell Cycle and Induces Cell Death by Apoptosis in Prostate Cancer Cells**

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**要旨**

Currently, many cancer chemotherapeutic agents in clinical use are derived from natural products. Thus, *P. angulata* promises to be a rich source for the discovery of potential bioactive agents. Physalin, withangulatin, and physangulin, which were isolated from *P. angulata* have been reported to show antitumor, immunosuppressive, and anti-inflammatory activities. Physangulidine A (**1**), a novel withanolide isolated from *P. angulata* was found to be significantly reducing the survival in clonogenic assays for two hormone-independent prostate cancer cell lines (DU145 and PC-3). Flow cytometry and confocal microscopy studies in DU145 human prostate cancer cells indicated that **1** induces cell cycle arrest in the G2/M phase and causes defective mitosis. **1** was also determined to produce programmed cell death by apoptosis, as evidenced by biochemical markers and distinct changes in cell morphology. These results imply that **1** might be a potential candidate for anticancer agent.

**参考論文**

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**Physangulidines A, B and C: Three New Antiproliferative Withanolides from *Physalis angulata* L.**

Zhuang Jin, Mark S. Mashuta, Neal J. Stolowich, Abraham J. Vaisberg, Nicole S. Stivers, Paula J. Bates, Walter H. Lewis, and Gerald B. Hammond