

A Novel Derivative of Natural Product Inhibits Cancer Cell Growth

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The natural products or their derivatives have been the source of drugs for humans. Our team has isolated a novel type of natural anti-cancer compound W-02 from an endemic plant, and demonstrated its antitumor activity. Here we demonstrated that W-02X, the derivative of W-02, exerted higher cytotoxicity than W-02 did on a variety of cancer cells using MTT assays, indicating W-02X is more potent than W-02. In addition, W-02X arrested cell cycle at G2/M phase. The expressions of phospho-CDK2, total CDK2, and cyclin B1 were inhibited by W-02X. Moreover, W-02X reduced the clonogenicity and transformation activity of cancer cells. Preliminary results also showed that W-02X repressed the tumor growth in vivo. These results indicate that W-02X has inhibitory activity on cancer cell growth both in vitro and in vivo and could be a potentially new lead compound for cancer therapy (supported by NSC101-2325-B-039-002 and NSC101-2321-B-039-002).