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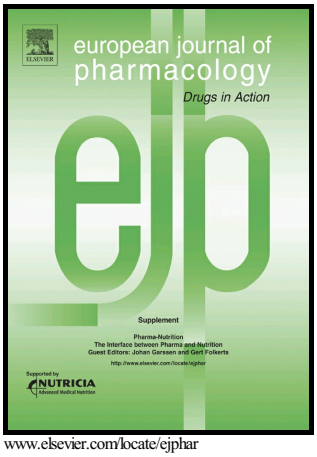

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Indirubin-3'-oxime suppresses human cholangiocarcinoma through cell-cycle arrest and apoptosis

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Abstract

Cholangiocarcinoma (CCA) is one of the most serious of all cancers and a major public health problem. CCA is an extremely invasive cancer, and the survival rate for CCA patients is only 24 months after diagnosis. Although surgery and chemotherapy can extend the survival rate to 5 years, <20-40% of CCA patients will survive this long; therefore, it is crucial to discover an effective chemotherapeutic agent for CCA. Indirubin-3'-oxime (I3O), a derivative of indirubin, has been shown to suppress cell proliferation and induce cell-cycle arrest and cell apoptosis in various human cancers. In this study, four human CCA cell lines—NOZ, HuCCT1, OCUG-1, and OZ—were used to evaluate the anticancer properties of I3O. Cell viability, cell-cycle arrest, and apoptosis were assessed using Western blotting, immunofluorescence, and flow cytometry analysis. The data show that I3O treatment can inhibit cell proliferation and induce cell-cycle arrest, and caspase-dependent apoptosis in CCA cells. These findings suggest that I3O could suppress tumor growth by regulating the cell cycle and inducing apoptosis, and is a potential therapeutic agent for treating human CCA.