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Development of novel anti-oral cancer agents using 8-hydroxyquinoline derivatives

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8-hydroxyquinoline derivatives have highly sensitive fluorescent chemosensors for metal ions, which are associated with a wide range of physiological activities, including anti-tumor, anti-microbial, anti-HIV-1 and anti-oxidant activities. A novel 8-hydroxyquinoline derivative, Feq3, was synthesized. Oral cancer is generally detected in the late stages when the cancer has advanced and therefore, has a poor prognosis and survival rate. Therefore, effective chemotherapy agents are required to address this public health issue. This work is the first to identify the inhibition of cell growth by Feq3 and to examine its effects on cell cycle distribution and apoptosis in oral cancer cells. Squamous Cell Carcinoma (SCC) of oral cavity is of malignant tumors. Treatment of SCC25 cells with Feq3 increased expression of TNF-Related Apoptosis Inducing Ligand Receptors (TRAIL-Rs) and enhanced the susceptibility of cells to TRAILs and involved signal cascades caspase-3 effectors of apoptosis. This study of molecular mechanisms of the anti-oral cancer effects of Feq3 in SCC25 cells suggests that Feq3 can be applied as a chemopreventive agent for human oral cancer.

Biography

Leong-Perng Chan is an Associate Doctor at Department of Otolaryngology (Head and Neck Surgery), Kaohsiung Medical University Hospital, Kaohsiung Medical University. His research focuses on Otorhinolaryngology: Head and neck surgery; Squamous cell carcinoma of the head and neck and Oncology filed.

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