Novel chalcone analogues inhibit *H. pylori*-induced cell pathogenesis and human oral squamous carcinoma cell proloferation

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Abstract

Oral cancer is one of the most prevalence cancers, which is the 6th leading cancer in Taiwan. Like many cancers, potent effects of surgical treatment are not as expected. Therefore, it is urgent to develop an effective treatment for curing the oral cancer patients. A series of chalcone analogues was found to have inhibitory effects on nitric oxide production in LPS/IFN-r-treated macrophages. In the present study, several chalcone analogues (chalcone-1, 7, 13), which shown have potent inhibitory effect on *H. pylori*-induced inflammation in human gastric epithelial cells. Moreover, those chalcone analogues were also found to inhibit *H. pylori* adherence and invasion of human gastric epithelial cells. In addition to inhibit *H. pylori*-induced pathogenesis of cells, one of the chalcone analogue, chalcone-15, which was further investigate its biological activities. Our data showed that chalcone-15 is able to inhibit several oral squamous carcinoma cell lines, but has no effect on normal cells (gingival fibroblast cells). The molecular mechanism of chalcone-15 in the inhibition of oral cancer cells was arrested cell cycle at G2/M phase. The results from this study indicated that development of chalcone analogues might have multiple functions on inhibition of *H. pylori* growth as well as oral cancer cell proliferation.

Keywords: chalcone analogues, *H. pylori*, oral squamous carcinoma cells