A potential drug for liver carcinoma

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Looking for efficient anti-tumor drugs is a hot research area. Chrysin (5,7-dihydroxy flavone), a natural widely-distributed flavonoid, has been reported to have many different biological activities such as anti-oxidant, anti-virus, antidiabetogenic activity and clear anxiolytic effect. However, Chrysin is limited in its clinical application because of its modest absorption in the intestine and rapid in vivo glycosylation. To improve the biological activity of chrysin, a number of its derivatives have been prepared for biological testing. 5-allyl-7-gen-difluoromethylenechrysin (ADFMChR) is one of them.

A research team led by Dr. Jian-Guo Cao from China investigate the anti-tumor effect of ADFMChR in vitro. Their study will be published on May 14, 2009 in the *World Journal of Gastroenterology*.

In their study, HepG2 cells and L-02 cells were cultured and the inhibitory effect of ADFMChR on their proliferation was measured by MTT assay. The apoptosis of HepG2 cells was determined by flow cytometry using propidium iodide fluorescence staining. The influence of ADFMChR on the proxisome proliferator-activated receptor γ (PPARγ), NF-κB, Bcl-2 and Bax protein expression of HepG2 cells were analyzed by Western blotting.

They found that ADFMChR significantly inhibited the proliferation of HepG2 cells in a dose-dependent manner, with little effect on growth of L-02 cells. Western blotting analysis revealed that after 24 h of treatment with 3.0, 10.0, 30.0 μmol/L ADFMChR, PPARγ and Bax protein expression increased but Bcl-2 and NF-κB expression decreased

in HepG2 cells; however, pre-incubation with 10.0 μmol/L GW9662, a blocker of PPARγ, could efficiently antagonize and weaken the regulatory effect of 3.0, 30.0 μmol/L ADFMChR on PPARγ and NF-κB protein expression in HepG2 cells.

This finding may provide a molecular basis for the clinically observed cancer-preventive effects of ADFMChR and new clues for research about pharmaceutical prevention and cure of human liver carcinoma.

More information: Tan XW, Xia H, Xu JH, Cao JG. Induction of apoptosis in human liver carcinoma HepG2 cell line by 5-allyl-7-gendifluoromethylenechrysin. *World J Gastroenterol* 2009; 15(18): 2234-2239 www.wjgnet.com/1007-9327/15/2234.asp

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