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Education

2003 - 2007 Ph. D., Basic Medical Science, National Cheng Kung University Medical College, Tainan, Taiwan.
2001 - 2003 M.S., Medical Laboratory Science and Biotechonology, National Cheng Kung University Medical College, Tainan, Taiwan.

Research

Chemoprevention, carcinogenesis, DNA damage and repair.

My research focuses on searching chemopreventive / therapeutic agents to prevent cancer or to inhibit pre-cancer development. The histone deacetylase inhibitors (HDACi) have recently emerged as a new class of anticancer drugs. HDAC inhibitors showed antitumor activity by inducing cell cycle arrest and apoptosis, as well as anti-angiogenesis in cancer cells. Suberoylanilide hydroxamic acid (SAHA), a histone deacetylase inhibitor, has been approved by the FDA for therapy of some solid tumors and T cell lymphomas. SAHA has been reported to inhibit cancer cell proliferation by down-regulating cyclin A promoter activity and VEGF exp1ression. We then tested if SAHA can prevent cancer development in our experimental model.

Experimental model: Pre-S2 mutant large surface antigen of Hepatitis B virus.

The pre-S2 mutant HBV large surface antigen (2-LHBS) has been recognized as a viral oncoprotein. Previous studies have shown that the presence of the 2-LHBS is highly associated with HBV-related HCC. Expression of the 2-LHBS in hepatocytes provides growth advantages by inducing cycle A and VEGF overexpression. We have also shown that the 2-LHBS induces nuclear translocation of c-Jun activation domain-binding protein-1 (Jab1) cause p27 degradation, leading to cell cycle progression. In mouse model, we have currently found that the 2-LHBS transgenic mouse displayed pre-cancerous phenotypes at early age and develop liver cancer at older age.

The other ongoing project is to know the molecular mechanisms of the pre-S2 mutant LHBS in hepatocellular carcinogenesis. We have previously performed a yeast-two hybrid analysis to screen for the pre-S2 mutant LHBS interacting proteins. There are several candidate genes that involved in maintenance of genomic integrity have been selected to work on.