Development of Quinoline-type Compounds as Novel Anti-Cancer Agents

Dr. Johnny C.O. TANG
Department of Applied Biology and Chemical Technology

Quinoline-type Anti-Cancer Drugs with Lesser Side Effects.
New Path for Future Development of Novel Anti-Cancer Agents.

Traditional Chinese Medicines (TCMs) have emerged as an invaluable source for drug discovery in the past decade. Some drugs isolated or derived from TCMs have been proven successful in combating diseases where western medicines fail. More and more TCMs and related active compounds have been reported having potential biological activities, which provide a base for the development of effective pharmaceutical leads. Among them quinoline compounds have shown promising anticancer activities. We have designed and prepared a series of novel quinoline-based compounds, and investigated their cytotoxicities against human cancer cells, and the identification of lead compounds for the drug development in future. Among the synthesized compounds, 8-hydroxy-2-quinolinecarbaldehyde and chiral 1,2,3,4-tetrahydroquinoline compounds displayed remarkable in vitro cytotoxicities against a series of human cancer cell lines of different tissue origins. The nude mice tumor xenograft models also demonstrated that these quinoline derivatives could dramatically reduce the tumor size of the subcutaneous Hep3B hepatocellular carcinoma with the i.p. injection dose of 10mg/kg/day and showed no damage of vital organs at histological level at all. Thus these effective quinoline-type anticancer drugs with lesser side effect paved the new path for the future development of novel anti-cancer agents.

In vivo anti-cancer effect of compound u (83b)

Representative Publications


Contact Us
Ms. Nelly Lam, Executive Officer
T: (852) 3400 2819
E: nelly.lam@polyu.edu.hk

LH-R004/20140603