Inhibitory Effects of Omega-3 Fatty Acids-Based Fish Oil on Cholangiocarcinoma

Chu, Tsan-Mei

Luo, Anin

Intrahepatic cholangiocarcinoma (ICC) is a type of primary liver tumor that is difficult to diagnose, and surgical resection is the only viable therapeutic option for patients. Studies show that long-chain unsaturated omega-3 fatty acids can lower inflammation and cancer cell proliferation. However, the effects of omega-3 fatty acids on cholangiocarcinoma are currently unknown. We utilized human bile duct cancer cells HuCCT1 to explore how omega-3 based fish oil from sources such as dietary supplements affects ICC. The results show that fish oil suppresses inflammation-, cell cycle-, and metastasis-related gene expression. We also established a line of triple-transgenic zebrafish, expressing Hepatitis B Virus X protein (HBx), Hepatitis C Virus Core protein (HCP) and delta-6-desaturase (D6D) genes. HBx+HCP induces ICC and D6D increases the level of omega-3 in the body to suppress tumor progression.

Awards Won:

Third Award of $1,000