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Reduction of cytochrome P450 1A2 in hepatocellular carcinoma

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Clinically, hepatocellular carcinoma (HCC) occurs much more frequently to males than females, but, the underlying mechanisms remain largely unknown. Cytochrome P450 1A2 (CYP1A2) is involved in the metabolism of 17 β -estradiol (E2) that is known to have a protective role in the development of hepatocellular carcinoma (HCC). In this study, experiments were carried out in cultured HCC cells and animal models to explore the significance of CYP1A2 in HCC. It was found that the level of CYP1A2 was significantly reduced in HCC. The overexpression of CYP1A2 could inhibit the growth of HCC in cultured HCC cells as well as the HCC tumor model in mice. Mechanically, the hypermethylation of the CYP1A2 promoter contributed to its reduction and the application of HDAC inhibitors recovered the loss of CYP1A2. In conclusion, the expression of CYP1A2 was significantly reduced in HCC and this reduction can be corrected by the inhibition of HDAC.

Biography

George G Chen is a Professor in the Department of Surgery, Director of Surgical Research Laboratories, The Chinese University of Hong Kong, China. He has extensive experience in cancer research, particularly in the area of hepato-carcinogenesis. He has authored or co-authored more than 190 papers and has written number of books or book chapters.

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