

Alternative splicing of estrogen receptor alpha in hepatocellular carcinoma

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The incidence of HCC is much higher in males than in females and the underlying mechanism is thought to be associated with female hormones. However, the role of ERα and ERα36 signaling in hepatocellular carcinoma (HCC) remain largely unknown. In this study, we examined ERα and ERα36 in three cohorts, which included: (i) primary HCC patients (N = 76, cohort P), (ii) secondary HCC from metastatic colorectal cancer (mCRC) (N = 32, cohort S), and (iii) HCC from The Cancer Genome Atlas (TCGA) (N = 121). Our data showed that WtERα was downregulated and that ERα36 was upregulated in tumor tissues in both cohort P and TCGA data set. ERα36 was downregulated in tumor tissues in cohort S. In cohort P, wtERα was differentially expressed in gender (P < 0.000), age (P = 0.004), tumor number (P = 0.043), tumor size (P = 0.002), intrahepatic recurrence (P = 0.054). ERα36 was unequally expressed in different non-tumor liver status (P = 0.040). WtERα was negatively associated with overall survival (OS) and disease free survival (DFS) in cohort P. Compared with non-tumor tissues, the expression of ERα36 was increased in primary HCC but decreased in secondary HCC, showing opposite expression patterns of ERα36 between primary HCC and secondary HCC. Collectively, Primary HCC is associated with the decreased WtERα but increased ERα36. The expression pattern of ERα36 is different between primary HCC and secondary HCC, as the former with the increased ERα36 but the latter with the decreased ERα36. Therefore, the expression of ERα36 may be used to differentiate the primary HCC and the secondary one. (Acknowledgement: Jian Zhang, Jianwei Ren, Charing CN Chong and Paul BS Lai contributed to this study. The study was supported by Direct grant Ref No 4054222 from the Chinese University of Hong Kong).

Biography:

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