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The mechanisms of pancreatic cancer: Does GATA6 play an important role?

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Giants in two different fields – Steve Jobs, the iconic high-tech visionary who founded Apple, and Ralph Steinman, the immunologist who received the 2011 Nobel Prize in Physiology or Medicine- recently died of different types of pancreatic tumors. The pancreas is a specialized composite organ that contains both endocrine glands and exocrine glands. Its morphogenesis reflects not only complex cell differentiation processes involving multiple signaling pathways but also a large number of developmental stages involving cell amplification; thus, the pancreas provides a good model for the in vivo study of cellular proliferation and differentiation. Moreover, diabetes, pancreatic cancer, and other diseases that cause serious harm to human health are closely related to developmental defects and dysfunction of the pancreas. Thus, the study of the mechanisms of pancreatic development generates findings of obvious theoretical and applied value. In particular, the accurate understanding of the molecular events during pancreatic development has important applicability for controlling the onset and progression of pancreatic cancer.

In the abstract of the research paper "GATA6 haploinsufficiency causes pancreatic agenesis in humans", which was published in *Nature Genetics* on December 11, 2011, it was suggested that an understanding of the regulatory mechanisms of pancreatic development may contribute to the treatment of diabetes. In this study, a British research team led by Allen examined 27 patients with pancreatic hypoplasia and found mutations in the GATA6 gene of 15 of these patients, an incidence rate of 55.56% . This finding is particularly surprising because in a mouse model, the silencing of the GATA6 gene does not appear to produce significant effects on pancreatic development. Thus, the rare genetic disease pancreatic hypoplasia provided the startling revelation that the GATA6 gene is vital for pancreatic development.

Biography

Rajiv Kumar Jha, completed PhD at the age of 30 from Xi'an Jiaotong University, School of Medicine, China. He did 3 years Post Doc research again at xi'an jiaotong University. He was awarded as Young International Scientist at National Natural Science Foundation of China. Presently he is working as a researcher and given a post of Vice president at Xian Medical College, Hu Xian. Xi'an, China. He is also editorial board member of World Journal of Methodology, Published more than 20 papers.

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