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Epigenetic contribution to the aberrant activation of oncogenic signalings in human cancers

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In addition to genetic changes, epigenetic changes such as DNA methylation and deregulated mictoRNA expression contribute to the aberrant activation of signaling pathways important to cancer development. For example, methylation mediated silencing of Klotho and RASAL led to the activation of wild type Ras in human cancers. Through microarray analysis, we identified miR-204 as a microRNA downregulated in human cancer. Restoration of miR-204 expression inhibited cell growth as well as Ras/MAPK signaling. The cortical actin cytoskeleton regulator ezrin was recently found to be critical in the activation of Ras/MAPK signaling. It was confirmed as the direct target of miR-204. Downregulation of miR-204 led to the overexpression of ezrin and subsequent activation of Ras/MAPK signaling in human cancers. Finally we will briefly introduce the activation of wnt signaling EZH2, the enzyme subunit of polycomb repressive complex 2 that silences many tumor suppressor genes in human cancer cells.

Biography

Hongchuan Jin after finishing residency and follow training in Medical oncology in China, obtained his Ph.D. in Karlsruhe University, Germany in 2004. His postdocal training was started in University of Jena, Germany and completed in The Chinese University of Hong Kong, China. He was appointed as research assistant professor in The Chinese University of Hong Kong and started his independent academic research focused on cancer epigenetics. Currently, he is a professor in Sir Runrun Shaw hospital, Zhejiang University. Over the years, he has published more than 40 papers in reputed journals.

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