



## *Bing-Hua Jiang*

*The University of Iowa, USA*

### **MicroRNAs and epigenetic change in cancer development and therapeutic resistance**

MicroRNAs (miRNAs) are small non-coding RNA molecules that play a crucial role in gene regulation and cellular differentiation. They are involved in various biological processes, including cell growth, proliferation, and apoptosis. In cancer, miRNAs can act as oncogenes or tumor suppressors, depending on their target genes. Epigenetic changes, such as DNA methylation and histone modifications, can alter the expression of miRNAs, leading to dysregulation of their target genes. This dysregulation can contribute to cancer development and therapeutic resistance. Understanding the mechanisms of miRNA and epigenetic changes in cancer is essential for developing novel therapeutic strategies.

#### **Biography**

Bing-Hua Jiang obtained his PhD degree from Mississippi State University in 1994, then started the first post-doc training in The Johns Hopkins University School of Medicine (JHU). He originally cloned hypoxia-inducible factor 1 $\alpha$  (HIF-1 $\alpha$ ) in JHU. He identified different functional domains of HIF-1 $\alpha$  for regulating HIF-1 transcriptional activation activity and many direct targets of HIF-1 including VEGF and heme oxygenase-1. He then moved to the Scripps Research Institute to have further post-doc training in 1997, where he studied the mechanism of PI3K in regulating different functions in different cells and animal. He initially demonstrated that PI3K and AKT play important roles in tumor angiogenesis by inducing VEGF and HIF-1 $\alpha$  expression. Since he established his own lab in 2000, our lab has demonstrated that oxidative stress and microRNA dysregulations are important in cancer development, drug resistance, tumor growth, and angiogenesis through epigenetic changes. He has published more than 157 research papers in peer-reviewed journals and his papers have more than 30,000 citations, H-index: 71.

[bing-hua-jiang@uiowa.edu](mailto:bing-hua-jiang@uiowa.edu)

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