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Nujiangexathone A, a novel compound from *Garcinia nujiangensis*, suppresses cervical cancer growth by targeting hnRNPK

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Cervical cancer is among the most frequently diagnosed cancers in females worldwide. Nujiangexathone A (NJXA), a novel compound from *Garcinia nujiangensis*, has been shown to have anti-cancer potential. In this study, the anti-tumor effects and the underlying mechanisms of NJXA action were investigated. Our results suggested that NJXA reduced the viability of HeLa and SiHa cells in a concentration- and time-dependent manner and induced G0/G1 cell cycle arrest in cells by down-regulating cyclins B1, E1, and A and cyclin-dependent kinases 2, 4 and 6, while selectively restoring p27. Two-dimensional gel electrophoresis and mass spectrometry revealed that heterogeneous nuclear ribonucleoprotein K (hnRNPK) was among the most affected proteins upon NJXA treatment. hnRNPK is closely linked to the cell cycle and is highly expressed in several tumors. Our study showed that NJXA reduced the expression of hnRNPK and induced cell cycle arrest through the c-Myc-cyclin/Cdk-Rb-E2F1 pathway. Moreover, in vivo results showed that the i.p. injection of NJXA significantly inhibited tumor growth on day 16 in a nude mouse xenograft model, and NJXA induced no apparent toxicity. Our study suggests that NJXA carries out anti-tumor functions by strongly suppressing the hnRNPK expression that is specifically associated with cell cycle arrest. In conclusion, NJXA is a potential anti-cancer drug candidate, especially for treating cancers with abnormally high hnRNPK expression.

Biography

Zhang Li has completed her PhD in 2013 from The Hong Kong University of Science and Technology. She is a Postdoctor in School of Pharmacy in Shanghai University of TCM. She has published more than 20 papers in reputed journals.

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