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Molecular interaction between K-Ras and H-REV107

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Ras proteins are small GTPases, which serve as master regulators of a myriad of signaling cascades involved in highly diverse cellula r processes. Activating mutations in Ras are found in about one-third of cancers. H-REV107, a K-Ras binding protein, plays an important role in determining K-Ras function. H-REV107 is a member of the HREV107 family of class II tumor suppressor genes and it is a growth inhibitory Ras target gene that suppresses cellular growth, differentiation, and apoptosis. Expression of H-REV107 was strongly reduced in about 50% of human carcinoma cell lines. However, the specific molecular mechanism by which H-REV107 inhibits Ras is still unknown. In this study, we suggested that H-REV107 strongly formed a complex with GDP-bound K-Ras. Modeled three-dimensional complex structures were then used to find the point mutation sites. Some mutations of K-Ras disrupted the complex formation with H-REV107. Hence, this study suggests that H-REV107 regulates K-Ras through a novel molecular mechanism.

Biography

Chang Woo Han is the student of Pusan University, Korea and he completed his Master's from the Department of Molecular Biology. His areas of research interest are tumor biology and cancer therapy.

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