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Annexin A2 regulates transcriptional activity of NF-κB by interaction with NF-κB p50 subunit

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Annexin A2 (ANXA2) is a negatively charged phospholipid binding protein that functions in a calcium-dependent manner. It is known that ANXA2 is related in cancer formation and development. ANXA2 is over-expressed in many specific types of cancer cells. However, the mechanism how ANXA2 can affect cancer formation and development has been poorly understood. NF-κB is a transcription factor that acts as a key regulator of innate and adaptive immune responses, inflammation, cell survival and apoptosis.NF-κB is constitutively and aberrantly activated in many types of cancer, and abnormal NF-κB activity thus represents a hallmark of cancer. In previous reports, we demonstrated that ANXA4 interacts with the p50 NF-κB subunit and regulates the NF-κB transcriptional activity in calcium-dependent manner. Recently it has been reported that ANXA1 and ANXA6 is also involved in NF-κB regulation through interaction with NF-κB. Here, we present that ANXA2 interacts with the p50 subunit of NF-κB and increases the transcriptional activity of NF-κB. In addition, NF-κB transcriptional activity was increased by ANXA2 over-expression in dose dependent manner. We suggest that ANXA2 can directly regulate the transcriptional activity of NF-κB through interacting with p50 and is involved in cancer formation and development. These results will increase our knowledge of the role of ANXA2 in cancer, and can be used as a biomarker and therapeutic target for cancer treatment.

Biography

Hyeyun Jung is a PhD student of Research Center for Integrated Cellulomics, Korea Research Institute of Bioscience and Biotechnology (KRIBB). She is author or co-author of 14 full research papers published in journals with impact factor.

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