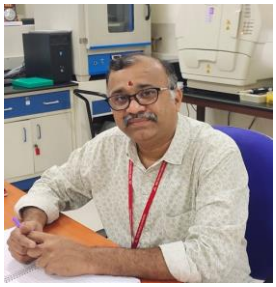
The Success story of PAK1-RUNX3



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Abstract

Oncogenic signaling kinases play vital role in transducing cell surface signals and control myriad of functions. Kinases function by phosphorylating substrates and modulate their activity. PAKs are intra-cellular kinases are activated by RTKs and in turn phosphorylate vital substrates and thereby modulating cellular functions including cytoskeleton remodeling, proliferation, migration. PAK1 has more than 40 different intra cellular substrates and functions as an oncogene. In this work, we show that RUNX3, a paradoxical transcription factor to be a substrate of PAK1 and its phosphorylation results in triggering oncogenic function and further designed peptides to interrupt this interaction in an attempt to abrogate oncogenic signaling.

Key words: PAK1, RUNX3, Tumorigenesis