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### **Induction of apoptosis by 4-(3-(tert-butylamino) imidazo [1, 2-*a*] pyridine-2-yl) benzoic acid in breast cancer cells via up-regulation of PTEN**

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We have previously reported that 4-(3-(tert-butylamino) imidazo [1, 2-*a*] pyridine-2-yl) benzoic acid, a bicyclic N-fused amino imidazoles derivative (BNFA-D), possesses anti-cancer potentiality against breast and kidney cancer cells with minimal toxicities to corresponding normal cells. Here, we explored the mechanism of action of BNFA-D in breast cancer cells using multiple cell-based assays such as MTT, DAPI, FACS, Western blot and immunoprecipitation. BNFA-D caused apoptosis by up-regulating PTEN leading to inhibition of Wnt/TCF signaling cascade and arresting S phase in breast cancer cells. Expression levels of  $\beta$ -catenin, cyclin D1, C-MYC, and phospho-AKT (Ser (473)) decreased with simultaneous increase in the levels of GSK3 $\beta$ , CK1, and PTEN in BNFA-D-treated MCF-7 cells. Interestingly, silencing of PTEN in breast cancer cells reversed the phenomenon of Wnt/TCF signaling cascade inhibition after BNFA-D treatment.

#### **Biography**

Sumit Siddharth is a PhD student at KIIT University.

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