



The therapeutic efficacy for targeting the PI3K signaling pathway for fighting breast, prostate and multiple myeloma cancer cells

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Abstract:

The PI3K signaling pathway is involved in the regulation of cancer cell growth, motility, survival and metabolism. This pathway is frequently active in many different types of cancer as breast, prostate and multiple myeloma. Targetable genetic aberrations in this pathway give the researchers many opportunities for the development of targeted therapies for different types of cancer. The high frequency of mutations in this pathway in multiple types of cancer has led to the development of small-molecule inhibitors of PI3K, several of which are currently in clinical trials. However, several feedback mechanisms either within the PI3K pathway or in compensatory pathways can render tumor cells resistant to therapy. Here, we give insight into the importance of the PI3K pathway as a target for cancer therapy and discuss the potential clinical efficacy of PI3K inhibitors. We mainly focused on the roles of PI3K signaling pathway in three cancer cell types including breast cancer, prostate cancer and multiple myeloma cancer.

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