



INDIAN INSTITUTE OF TECHNOLOGY GUWAHATI  
SHORT ABSTRACT OF THESIS

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Programme of Study : Ph.D.

Thesis Title: Identification, screening and exploring potentials of PKC directed molecules in anti-cancer drug development.

Name of Thesis Supervisor(s) : 'Dr. Vishal Trivedi' and 'Professor Rakhi Chaturvedi'

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**SHORT ABSTRACT**

Protein Kinase C (PKC) is an important serine-threonine kinase regulating crucial signalling pathways in mammalian cell biology. During the PhD work, the role of Protein Kinase C (PKC) in driving tumorigenicity and the potential of PKC in the development of anticancer drugs have been explored. To fulfill these objectives, we have designed novel chemical molecules, selected the heterocyclic compounds from different chemical libraries, Drug databank and phytochemical reservoir. Our results indicate that these molecules are working as agonists for PKC and driving the sustained prolonged down-stream phosphorylation signal in the cancer cells and it ultimately results in induction of apoptosis through the mitochondrial pathway. Summarizing, our data concludes that re-purposing of clinically approved drugs is an alternative to design de-novo anti-cancer drug and novel anti-cancer molecules are better effective if designed as derivatives of renowned anti-cancer phytochemicals.