

Chemical Modulators of Protein-Protein interactions and Cell signalling for Cancer Chemotherapy

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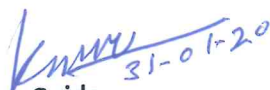
Venue: CB310

Time: 3.00 p.m

Cancer is one of the most formidable diseases in the world. It may be regarded as a group of diseases affecting different organs and parts of the body and is characterized by an abnormal and uncontrolled growth of cells.¹ Radiation therapy, chemotherapy, immunotherapy *etc.* are the common approaches to treat this disease amongst which chemotherapy is an important option. The last couple of decades have witnessed an unparalleled success in the development of therapeutically useful functional protein targeting agents.² Microtubules and kinases are the two major functional protein targets in cancer chemotherapy and they are involved in the onset or progression of various cancers. Mutations in the kinase catalytic domain disrupt the normal signalling cascade which results in the uncontrolled cell proliferation.³ Even though microtubules are not disease causing proteins, they are involved in the multiplication of normal cells as well as cancer cells.⁴ The vital roles of microtubule in mitosis and cell division make it an attractive target for antitumor therapy.⁵ Inhibition of these functional proteins induces cell apoptosis. After discussing some of the recent developments in this area, the strategies we are following to design new chemical systems will be presented.

References:

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3. Hu, Y.; Potts, M. B.; Colosimo, D.; Herrera-Herrera M. L.; Legako, A. G.; Yousufuddin, M.; White, M. A.; MacMillan, J. B. *J. Am. Chem. Soc.* **2013**, *135*, 13387-13392.
4. Downing, K.H.; Nogales, E.; *Curr. Opin. Struct. Biol.* **1998**, *8*, 785–791.
5. Jackson, J.R.; Patrick, D.R.; Dar, M.M. *Nat. Rev. Cancer*, **2007**, *7*, 107–117.


Guide

Seminar Coordinator


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