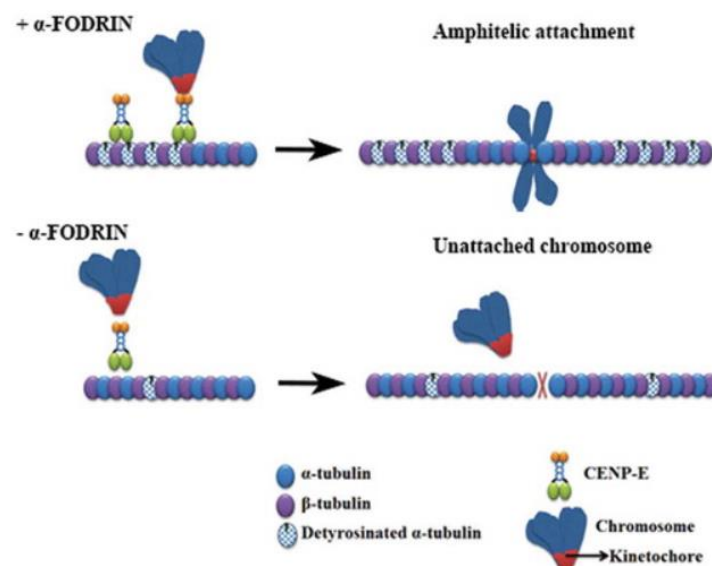


Scientists at RGCB are studying compounds that can alter mitosis

The study was conducted by Dr. Suparna Sengupta and her team at Department of Biotechnology's autonomous institute the Rajiv Gandhi Centre for Biotechnology (RGCB), Thiruvananthapuram, is looking for collaborators for clinical trial of 2, 4-diaminotiazoles compounds. Currently, the research team is studying on the role protein fodrin in cancer. Team has reported for the first time that fodrin is responsible for chromosome alignment and organization of functional microtubules during mitosis and is involved in the regulation of microtubule nucleation.



Through a series of papers such as British Journal of Pharmacology, Mol Cancer Therapeutics, Carcinogenesis and Molecular Cancer, they showed that 2, 4-diaminotiazoles are highly effective in killing cancer cells targeting microtubule dynamics and tubulin in its colchicine binding site. The compounds could also escape multidrug resistance in human xenograft models as is shown by highly used anticancer agents paclitaxel and vinblastine. Further, these compounds could inhibit angiogenesis and were effective in a p53 independent way even in Ras/Raf mutated colon cancer models.

At RGCB's Cytoskeleton Research Laboratory, scientists are involved in studying proteins and external agents that alter mitosis. Since cell division and apoptosis are inherently related to cancer, antimetabolic drugs that causes apoptosis are widely used in the treatment of cancer. However, their use is limited by drug resistance phenotype, high cost of treatment and several

other drug specific limitations. Therefore, researchers in Cytoskeleton Research laboratory have developed a class of compounds that show high preclinical efficacy in tested models of colon and breast cancer.

Dr. Sengupta's team has received a US patent for preparation of 2,4-diaminothiazoles. She has also received the National Woman Young Bioscientist award from DBT in year 2005 for this work.

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