

Bororetinoids as potential therapeutics for treatment of glioblastoma

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Glioblastoma multiforme (GBM), also simply called glioblastoma, is the most aggressive primary brain tumor in adults with two-year survival rate of 28% following surgical resection, chemotherapy, and radiotherapy. Recurrence of glioblastoma is nearly certain after initial treatment and there is currently no therapy proven to prolong the survival of the patients after tumor recurrence. Thus, there is a desperate need for new and improved therapies to combat growth and regrowth of GBM. Retinoic acid (RA) signaling pathways regulate GBM stem cell biology, RA is used as chemotherapeutic agent, and also RA based therapeutic agents penetrate blood-brain-barrier (BBB). RAs are a class of natural and synthetic vitamin A analogues that play a central role in the control of cell growth and differentiation of normal and malignant cell types. Thus, retinoid therapy has the potential to impact a wide array of disorders. Given the long history of research and major strides in understanding retinoid biology, it is somewhat surprising and certainly frustrating that better probes and drugs are not available due to toxicity and lack of specificity of the compounds to receptors. To address this issue, we have developed new chemistry to generate small libraries of boron-containing retinoids and test their activity via reporter cell, whole animal, and embryonic stem cell based assays and tested their anti-cancer mechanisms in different human glioblastoma cells lines. The overall goal of our program is to develop retinoid based multifunctional therapeutic agents in other words "single drug multitarget", which will be useful not only to inhibit tumor cells, but also will protect normal central nervous system (CNS) cells.

Biography

Bhaskar C. Das has completed his Ph.D. at the age of 28 years from Indian Institute of Technology (IIT), Kanpur (India) and postdoctoral studies from UTK, Harvard Medical School and MIT. He is the Associate Professor of Internal Medicine of the University of Kansas Medical Center, a premier biomedical organization. He has published more than 50 papers in reputed journals and holds 12 patents. He is serving as an editorial board member of repute and member of many national and international scientific organizations and scientific reviewer of many funding agencies.

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