

# MULTI-TARGETED AGENTS MADE BY “MOTHER NATURE” IN THE PREVENTION AND TREATMENT OF CANCER

**Ajaikumar B Kunnumakkara**<sup>1,2</sup>

<sup>1</sup>DBT-AIST International Laboratory for Advanced Biomedicine (DAILAB), India

<sup>2</sup>Indian Institute of Technology (IIT) Guwahati, India

**D**espite the advances in the diagnosis, prevention and treatment of cancer, it still remains as one of the most dreadful diseases in the world. Therefore, there is an urgent need for developing more efficacious drugs for the treatment of this disease. Most of the drugs developed today are mono-targeted, however, research over the past two decades established that cancer is a multi-gene disorder and there are so many molecular alterations taking place in a cancer cell. Therefore, multi-targeted agents are highly useful in the treatment of this disease. In the recent years it has been proved that multi-targeted natural products are safe, efficacious and affordable for the prevention and treatment of this disease. A number of natural products have been shown to modulate different signaling pathways in cancer cells and inhibit cancer cell proliferation, survival, invasion, angiogenesis and metastases in several preclinical and clinical studies. In addition, many of the natural products have been shown to inhibit chemo-resistance and radiation resistance in cancer cells and make them more sensitive to chemotherapy and radiotherapy respectively. Moreover, some of these compounds are known to protect normal cells from the deleterious effects of chemotherapy and radiation. Therefore, the present talk will summarize the recent developments of natural products in the prevention and treatment of cancers.

kunnumakkara@iitg.ac.in