

## Abstract :

Cancer is a very serious illness and is the second biggest reason why people die around the world. Surgery, chemotherapy, and/or radiation therapy are usually the main treatments doctors use for most advanced tumors. Unfortunately, when cancer doesn't respond to chemo and radiation because the cancer becomes resistant or because the treatment doesn't work well enough, this makes it much harder for patients to do well. There is a pressing need to find and make agents that can make cancer cells react better to chemo-radiation therapy while causing the least harm to normal cells. While many recent studies have found out how some key molecules work and which targets they can hit in CRT failure, using small molecule drugs to help chemo/radiation work better often comes with a lot of side effects and increases the risk of disease complications. Natural products have been used for a long time to try to stop cancer from starting in many different kinds of tumors. Combining many of these compounds together with the usual cancer treatments or with radiation therapy has helped kill more cancer cells and has led to better results and longer survival for patients. Based on the available data, it looks like natural products can help treat cancer, especially when used together with chemotherapy, and they also have a good track record of reducing the chances of certain cancers coming back. This review article looks at new studies about natural products that are being used to make chemotherapy and radiation therapy more effective in treating many types of solid tumors. This is the first review that looks at CT and RT sensitizers side by side to see how they work against cancer.

All around the world, cancer is a major factor in people dying, so there is a constant push to find effective drugs for treatment. Researchers have found that natural compounds can be effective against different cancer cell lines and thus are being considered for use as anticancer drugs. Because more than half of today's anticancer drugs come from plants and microbes, their research is based on their composition, ecology, phytochemical qualities, and what is known about their use in traditional medicine. It has also been found that flavonoids, anthocyanins, and other phytochemicals in plants have abilities to fight against cancer. These compounds have been found to manage changes in gene expression, prevent cancer cells from spreading, slow cell division, disturb cell-to-cell signaling, and lead to apoptosis in cancer cells. Some natural substances have also been found to play a role in preventing cancer development. Because natural compounds might become effective cancer drugs, scientists are very interested in studying them for drug development. Vincristine, vinblastine,

and Taxol have shown that products from nature can lead to better and new anticancer drugs that are needed due to the increase in cancer deaths.