

## Synthesis and anticancer activity of some 1, 3, 4-oxadiazole derivatives against Ehrlich ascites carcinoma bearing mice model

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A series of 2, 5-disubstituted 1, 3, 4-oxadiazole derivatives (4A-4G) have been synthesized starting from aromatic benzaldehyde. All the synthesized compounds contain toxophoric -N=C-O- linkage in oxadiazole ring. This 1, 3, 4-oxadiazole heterocyclics are very good bioisosteres of amide and ester. The structures of the final compounds were characterized by using IR, <sup>1</sup>HNMR and mass spectroscopy.

The anticancer study was investigated against Ehrlich ascites carcinoma bearing albino mice. The synthesized (4A-4G) compounds were administered intraperitoneally at dose of 20-25 mg/kg; body weight per day for 7 days after 24 hour of tumor inoculation in mice. 5-Fluorouracil (20mg/kg; body weight) was used as the standard drug. Synthesized compounds (4A-4G) treated group remarkably decrease the body weight, tumor volume, packed cell volume, viable cell count and increase the tumor weight (%) inhibition, tumor cells (%) inhibition, the life span, and nonviable cell count of EAC tumor bearing mice when compared with the control group. Synthesized compounds (4A-4G) also showed significant results on different hematological parameters of cancer. All the synthesized compounds (4A-4G) revealed significant anticancer activity in EAC bearing mice. The present investigation supported those derivatives of oxadiazole as potent anticancer molecules for future study.

### Biography

Tanushree Singha has completed her post graduation i.e., M. Pharma at the age of 26 years from Jadavpur University. Presently she is a research fellow in Department of Pharmaceutical Technology, Jadavpur University, Kolkata, India. She has published 3 papers in reputed journals and 2 papers are also communicated in reputed journal.

## Role of food factor in complementary cancer treatment

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Many herbs and natural products are essentially antioxidant and anti-inflammatory substances, and thus their roles in chemoprevention are extensively studied. Antioxidant food factors have attracted attention as an adjuvant or protector against the adverse effects associated with cancer treating modalities such as chemo- and radiotherapies because these modalities associate with oxidative stress. In some antioxidant food factors, the antioxidant function is not only the sole property but it also is active as a pharmacological molecule having certain cellular target. When the cellular target is related to the growth or apoptosis of cancer cell, such antioxidant molecules will be promised adjuvant or sensitizer in cancer treating modalities, especially chemo- and radiotherapies.

Sch B, a lignan isolated from *FructusSchisandrae*, is an example of such molecule. It is a major herb having been used in oriental medicine prescriptions, and also used as drinks for remedy. Our studies revealed Sch B not only prevents neurotoxicity and genotoxicity occurring frequently in cis-platin treatment of cancer, but also has a specific cellular target such as the critical kinase in DNA damage checkpoint. Abrogation of the checkpoint causes mitotic catastrophe in the cells with damaged DNA and thus increases the sensitivity of cancer cells to chemicals and radiation.

In the lecture, I will discuss a promised use of antioxidant food factors in complementary cancer treatment.

### Biography

Tetsuya Konishi has directed functional and analytical food science department in NUPALS for last 15 years with long career on the research in biophysics and bioenergetics. His research interest was mainly focused on the application of food functions in prevention and amelioration of aging and oxidative stress related diseases. He published more than 160 original and review papers in peer reviewed journal. He has served on the editorial board member and reviewers of several international journals such as Molecular Nutrition and Food Research, Gene and Nutrition, Chemotherapy, etc. He is a founding organizer of International Niigata Symposium on Diet and Health (INSDH) that is held every two years in Niigata, Japan. Currently, he chairs Niigata Bio and Food Sciences Research Development Organization.