conferenceseries.com

2nd International Conference on Cancer Biology and Therapeutics

November 18-19, 2024 | Paris, France

Synthesis of novel amino-ethyl-rhodamine derivatives and their anti-cancer activity against MCF-7 human breast cancer cell Line

Padma Charan Behera

Jharkhand Rai University, India

Statement of Problem: Breast cancer is the most prevalent diagnosed cancer among women and the main cause of morbidity and mortality. As for breast cancer, MCF-7 cells are an important candidate sincet hey are widely utilised in research for oestrogen receptor (ER)-positive breast cancer cellassays, and various sub-clones have been identified to reflect different classes of ER-positive tumours with varied levels of nuclear receptor expression. Rhodamines and its derivatives have shown a great interest over the past two decades due to their excellent structural and spectroscopic properties. Rhodamine derivatives have been widely investigated for their mitochondrial targeting and chemotherapeutic properties. Rhodamine derivatives, in particular, have been widely investigated for their therapeutic properties.

Methodology: In three different formats. They are the lethal concentration (LC50), the growth inhibition factor (GI50), and overall growth inhibition (TGI). The LC50 value is the drug concentration that causes 50% cell death. The GI50 value is the drug concentration that inhibits cell growth by 50%. The TGI value is the drug concentration that causes complete cell growth inhibition.

Finding: The standard protocol for anticancer activity testing uses Adriamycin (ADR) as a reference standard. The aim of this study was to evaluate our synthesized compounds – BA-1, BA-3, BA-8, BA-7, BA-11, BB-57, BB-59, BB-105 and B-12 with the positive control ADR drug for their antiproliferative properties in vitro against MCF-7 cell lines of human cancer. The test substances' cytotoxic effects were assessed using MCF-7 human cancer cell lines. Table 1 summarises the LC50, TGI, and GI50 values obtained for each drug. Test wells were compared to control wells on a plate by plate basis to determine percent increase.

Biography

Padma Charan Behera, from the Department of Pharmaceutical Sciences, Jharkhand Rai University, Ranchi, India, focuses on synthesizing novel amino-ethyl-rhodamine derivatives and exploring their anti-cancer potential. His research primarily targets the MCF-7 human breast cancer cell line, aiming to develop effective therapeutic agents. With expertise in medicinal chemistry and cancer pharmacology, he contributes to advancing drug discovery and innovation in oncology. His work demonstrates a commitment to addressing critical healthcare challenges through science and innovation, further establishing Jharkhand Rai University as a hub for cutting-edge pharmaceutical research.