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**Presentation title:** Unearthing Nature's Treasure: Role of Taxol from Fungus Associated with Medicinal Plants for cancer treatment.

**Corresponding Author name:** Dr. Abhilasha

**Affiliation:** Associate Professor

**Ph. No: 7905072684**

**Email ID’s:** [abhilasha.gautam@kit.ac.in](mailto:abhilasha.gautam@kit.ac.in) 

**WhatsApp No:** 7905072684

**Other Authors if any:** Aayushi, Vanshika Srivastava

**Presentation type:** (Oral presentation)

**Unearthing Nature's Treasure: Role of Taxol from Fungus Associated with Medicinal Plants for cancer treatment.**

**Abstract:**

Taxol, also known by its generic name paclitaxel, is a chemotherapy medication used in the treatment of various types of cancer including ovarian cancer, Breast cancer, Non-small cell lung cancer, pancreatic cancer and Kaposi's sarcoma. Its mechanism of action involves interference with the normal function of microtubules in cells which are crucial structures in cell division. Taxol binds to beta-tubulin subunits of microtubules, promoting the assembly and stabilization of microtubules. Cells with abnormal microtubule dynamics undergo programmed cell death (apoptosis) as a result of the disruption caused by Taxol. axol primarily targets rapidly dividing cells, which is why it is effective against various types of cancers characterized by high mitotic activity. Taxol is primarily derived from the bark of the Pacific yew tree (Taxus brevifolia). Due to concerns about the environmental impact of harvesting yew trees and the limited availability of these trees, one avenue of exploration involves the isolation of paclitaxel-producing endophytic fungi associated with medicinal plants. Endophytic fungi reside within plant tissues without causing apparent harm to the host plant. It is often used in combination with other chemotherapy agents to maximize its therapeutic effects. The dosage and treatment schedule of Taxol depend on the specific type of cancer being treated and the overall treatment plan. It may be given as a single agent or in combination with other chemotherapy drugs. Common side effects of Taxol include hair loss, nausea, vomiting, low blood cell counts (neutropenia, anemia, and thrombocytopenia), fatigue, and peripheral neuropathy. It is often used in combination with other chemotherapy agents to maximize its therapeutic effects. Major area of research to explore alternative sources for paclitaxel production to address sustainability concerns as the current approach involves complex processes.

**Biography (150-200 words):**

Dr. Abhilasha received her M.Sc. in Biotechnology from the Kumaun University Nainital, India, in 2012. She later joined Prof. Shyam Sundar's research group at the Department of Medicine, Institute of Medical Sciences, Banaras Hindu University (IMS-BHU), and project titled “Tropical Medicine Research Centers-National Institutes of Health (NIH-TMRC P36/10) Visceral Leishmaniasis in Bihar State, India. She was completed her PhD from the same university under the supervision of Prof. (Dr.) Madhyukar Rai thesis entitled “Molecular Studies on PLHIV in Eastern Indian Population”. She worked as a lecturer at Chhatrapati Shahu Ji Maharaj University in Kanpur for a year at the Institute of Biosciences & Biotechnology. She presently has an Associate Professorship at the Kanpur Institute of Technology (KIT), located in Kanpur, India.