

**Report on “Hypoxia and Cancer: Recent Developments” by Faculty of Pharmacy.**

Communication Cell IUL <communications@iul.ac.in>  
Bcc: phfc@iul.ac.in

Sun, Oct 6, 2024 at 8:26 AM

**Report on “Hypoxia and Cancer: Recent Developments”**

The Faculty of Pharmacy, Integral University, Lucknow, observed a **guest lecture cum research interaction** as part of its ongoing lecture series on “*Awareness of Trends in Technology in Pharmaceutical Sciences*”. The interactive session, held on Saturday, September 14, 2024, at 11:00 AM in Hall-4 of the Central Auditorium Building, Integral University.

The event started with a welcome address by Professor Juber Akhtar, Head of the Department of Pharmacy. The guest speaker, **Professor Gaurav Kaithwas, Dean of the Department of Pharmaceutical Sciences at Babasaheb Bhimrao Ambedkar University, Lucknow**, delivered an engaging and informative lecture on the relationship between hypoxia and cancer.

Professor Kaithwas enlightened the role of hypoxia in cancer, covering the basics of cancer, its types, and their corresponding treatment options. He explained that hypoxic cancer cells rely on **glycolysis to oxidize glucose** due to limited oxygen, leading to excessive lactate production. This lactate is utilized by other cancer cells for fatty acid synthesis, promoting tumor growth. The lecture focused primarily on the metabolic adaptations of hypoxic cancer cells and their impact on tumor progression and therapy resistance.

Professor Kaithwas emphasized that lactate, secreted by hypoxic cancer cells, plays a crucial role in initiating angiogenesis. He explained that severely hypoxic cancer cells enhance the synthesis and secretion of **Vascular Endothelial Growth Factor (VEGF)**, which acts on epithelial cells in nearby blood vessels to promote the formation of new blood vessels. This process supports tumor growth by ensuring a steady supply of oxygen and nutrients. He highlighted the **molecular pathways through which lactate influences cancer cells**.

Professor Kaithwas offered insights for target-based cancer research, emphasizing the need to target specific pathways. He highlighted recent developments in therapeutic approaches targeting tumor environments and encouraged a multidisciplinary research approach, integrating biochemistry, molecular biology, and pharmacology, for more effective cancer therapies.

The session was highly informative, offering valuable insights into hypoxia and cancer, also it was in compliance with CO5 of Pharmacotherapeutics, PO2 and SDG 3. It was attended by more than fifty participants including faculty members, M.Pharm. and Pharm.D. students, and Ph. D. research scholars. The lecture concluded with an engaging Q&A session and a discussion on recent advancements in cancer research, which suggests that the session was based on active learning approach.



Professor Juber Akhtar delivered the vote of thanks, expressing sincere gratitude to Professor Gaurav Kaithwas, and to Professor Wahajul Haq, Dean of Doctoral Research at Integral University. He also thanked the faculty and students for their participation.

Prof. (Dr.) Juber Akhtar,  
Head,  
Department of Pharmacy.

Prof. (Dr.) Syed. Misbahul Hasan,  
Dean,  
Faculty of Pharmacy.