



University of Tehran



## Seminar 2

# The Importance of CPLANE and Its Components in Cancer and Ciliopathies

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### Abstract

The CPLANE (Ciliogenesis and Planar Polarity Effector) is a protein structure which is responsible for IFT, ciliogenesis, and signaling regulation. The studies show that the structure of CPLANE, which is located near the basal body of cilia, is involved in fine tuning various signaling pathways, including Hedgehog (Hh) signaling pathway. The Hh signaling pathway occurring in primary cilia plays various vital roles in embryonic development, adult tissue homeostasis, and also its dysregulation may underlie various types of cancer. Moreover, CPLANE and its components and also their junctions will be highlighted. Mutation in any of the three comprising genes (FUZ, INTU, and WDPCP) and associated proteins will lead to ciliopathies and prenatal lethality. In this presentation, the structure, function, and importance of these three proteins will be described; furthermore, we will examine and explain the specific function of these three proteins.

**Keywords:** CPLANE, Ciliopathy, Ciliogenesis, IFT, Hedgehog Signaling Pathway.