



University of Tehran



Seminar 2

The Role of IFT27 and the Essence of Its Partner Proteins for Male Fertility

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Abstract

The intraflagellar transport (IFT) system is essential for the assembly and maintenance of cilia and flagella, which play critical roles in various cellular processes, including male fertility. IFT27 is a conserved protein that is involved in the IFT process and has been shown to be important for male fertility. IFT27 is a component of the BBSome, a complex that mediates trafficking of membrane proteins in cilia, and also interacts with other proteins involved in the IFT process. In addition to its role in the IFT system, recent studies have revealed a link between IFT27 and the Hedgehog signaling pathway. Hedgehog signaling is crucial for male reproductive system development and function, and defects in this pathway have been associated with infertility. IFT27 has been shown to interact with and regulate the activity of key components of the Hedgehog pathway, such as Smoothened and Gli transcription factors. This presentation will provide an overview of the IFT system, with a focus on the role of IFT27 and its partner proteins in male fertility. It will also highlight the link between IFT27 and the Hedgehog signaling pathway and discuss the implications of this connection for spermiogenesis.

Keywords: Hedgehog signaling pathway, Intraflagellar transport, IFT27, Male fertility, Spermiogenesis.