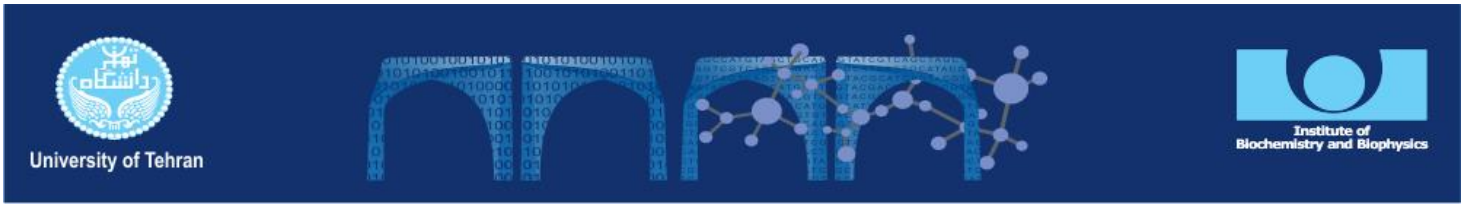

Seminar 1

Biochemistry of Neurotransmitters related to Addiction

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Abstract

This presentation provides an exploration of the relationship between neurotransmitters and addiction. It begins by defining addiction and discussing different types of addictions. The presentation then delves into the cycle of addiction, highlighting the stages and processes involved. The role of neurotransmitters, particularly dopamine, in addiction is extensively examined. The presentation elucidates how dopamine functions as the primary neurotransmitter implicated in reward processing and addiction. It explores the reward system and the intricate interplay between dopamine and other neural pathways.

Furthermore, the molecular mechanisms of neuroadaptation in addiction are explored, shedding light on the neurochemical changes that occur with repeated drug use. The specific targets of cocaine and heroin in the brain are discussed, unveiling their effects on neurotransmitter systems. Various methods used in addiction research, such as EEG and fMRI, are introduced to provide insights into the study of brain activity and neural correlates of addiction. This presentation also covers therapeutic strategies such as tDCS and TMS and Flan that focus on neurotransmitters to reduce addictive behaviors. The future research directions in addiction research are outlined, highlighting emerging areas of investigation and potential avenues for therapeutic advancements. Additionally, challenges and limitations in the field are acknowledged, emphasizing the complexity of addiction and the need for comprehensive approaches.

In conclusion, this presentation offers a comprehensive overview of neurotransmitters and addiction, providing a foundation for understanding the neurobiological basis of addictive behaviors. It underscores the significance of neurotransmitters, particularly dopamine, in addiction and highlights the potential for future research and treatment advancements in this critical field.

Keywords: Dopamine, tDCS, TMS, Addiction, reward system