



DIPARTIMENTO DI FARMACIA E BIOTECNOLOGIE

## **AVVISO DI SEMINARIO**

Il giorno lunedì **20 febbraio 2023**  
alle ore **14:00**

*presso*

Aula A, piano terra, via Irnerio 48 (ex Farmacologia)  
Bologna

### **Dott.ssa Esi Domi**

*Scuola di Scienze del Farmaco e dei Prodotti della Salute, Università di  
Camerino*

(ospite Prof.ssa Patrizia Romualdi)

terrà un seminario dal titolo:

## **EVIDENCE FOR A ROLE OF CENTRAL AMYGDALA IN COMPULSIVE ALCOHOL USE**

Colleghi e studenti sono cordialmente invitati

*Commissione Ricerca e Attività Correlate - FaBiT*

---

## BIOGRAPHICAL SKETCH



The aim of my research is to identify neural circuits and molecular level mechanisms of compulsive alcohol taking, a key feature in the diagnosis of Alcohol Use Disorders.

Addiction develops in a vulnerable minority of substance users, suggesting that research to discover novel treatments should consider individual differences in vulnerability for clinically relevant behaviors. My recent research focused on the study of the neural basis of individual differences in the vulnerability to develop compulsive alcohol use and pathological alcohol choice, two key hallmarks of addictive disorders. I found that neuroadaptations affecting GABA and PKC-mediated signaling within the central amygdala contribute to the development of

alcohol addiction.

A solid training in behavioral pharmacology, achieved during the PhD in the laboratory of Professor Roberto Ciccocioppo (University of Camerino, Italy) allowed to establish several collaborations with the objective to identify and to validate new therapeutical targets to treat alcohol use disorders. I explored the role opioid receptor in excessive drinking induced by stress and nicotine. Moreover, I explored the role of the nuclear receptor PPARs in alcohol use and anxiety disorders elicited by stress or nicotine withdrawal. Both pharmacological and genetic interventions suggested a protective role of the neuronal PPAR $\gamma$  activation in reducing excessive alcohol drinking, alcohol-induced neurodegeneration, nicotine withdrawal symptoms and stress response. These findings open new vistas on the role of PPAR $\gamma$  in drug addiction and the regulation of mood disorders, suggesting that PPAR $\gamma$  activation may be beneficial in the treatment of alcohol and nicotine use disorders and psychiatric conditions associated with stress, in particular, anxiety disorders.

During my Postdoc, I established a new line of research in the laboratory of professor Markus Heilig (University of Linköping, Sweden) focusing on individual variability in developing alcohol use disorders. I experienced interdisciplinary approaches applying cutting edge molecular techniques, making a step forward in the discovery of molecules that might represent key targets for treating alcohol addiction. Recent findings of my research showed that PKC- $\delta$ -positive GABA-ergic neurons in the central amygdala were strongly activated in conjunction with compulsive drinking.

Findings from my research activity resulted in 11 first and 12 co-authored publications in highly prestigious journals including Science, Science Advances, Biological Psychiatry, Journal Neuroscience. Recently, I obtained a research position at the department of Pharmacology and Experimental Medicine in Camerino that will allow me to further explore the role of individual variability and sex differences in developing excessive alcohol use with the aim to increase the predictive power for a translational research and advance the discovery of novel effective pharmacotherapies in alcohol use disorders.