

NEURAL BASES OF FLEXIBLE BEHAVIOURS DURING SOCIAL INTERACTION: ROLE OF THE PREFRONTAL CORTEX AND NEURONAL NICOTINIC RECEPTORS IN MICE MODELS

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We have developed a behavioral method to study flexible behaviors and decision-making processes during social behaviors in mice. In this framework, we can manipulate the motivational level of animals for social *versus* novelty exploration rewards in order to focus on the interface between efficient decisions when different motivations compete. In addition, we have recently studied some of the behavioral correlates of the social behaviors, in particular, we will show here data concerning ultrasonic acoustic communication -USVs- in social *versus* non social context. We will discuss the fact that USVs reflect the emotional and motivational state of mice.

We performed several studies for the past ten years showing that mice make flexible choices that allow them to satisfy both social and exploratory motivations. We will illustrate here our data showing that the prefrontal cortex is needed for such choices, like it is the case in humans. We will also show that functional neuronal nicotinic receptors, specifically within the prefrontal cortex, are necessary for emergence of adapted choices. Novel and unpublished data showing the interaction between noradrenergic and nicotinic systems in the prefrontal for these behaviors will also be provided.