

[1P]Social Behavior

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***Videos are available throughout the meeting period.**

[1P-178]Oxytocin receptor knockout prairie voles display deficits in helping behavior.

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There are many studies on a variety of social behavior mediated by oxytocin. Of the studies, several suggest that oxytocin is deeply involved in empathy. Empathy toward other individuals is thought to be necessary to give rise to helping behavior. However, there has been little research on the relationship between oxytocin and helping behavior. We investigated helping behavior in oxytocin receptor knockout prairie voles. Prairie voles are known as socially monogamous rodents with high sociality. To examine helping behavior, we used a paradigm in which voles helped a conspecific soaked in water by opening a door. The prairie voles were housed in pairs. All the pairs were siblings. One of the pairs was assigned to be a soaker vole and the other was assigned to be a helper vole. There were two groups; the oxytocin receptor knockout and wildtype groups. The oxytocin receptor knockout voles were paired with wildtype siblings and were assigned to be the helper. Their wildtype cagemates were assigned to be the soaker. The experimental apparatus was divided into two areas; a pool area and a ground area. These areas were separated by a transparent acrylic plate on which a circular door was attached. The soaker vole was placed in the pool area and the helper vole was placed in the ground area. The door could be opened only from the ground area. We measured door-opening latencies. After the door-opening, the pair of the voles were allowed to interact. At that time, the huddling time was measured. As a result, the oxytocin receptor knockout voles showed significantly longer latencies for opening the door than the wildtype voles. In addition, the oxytocin receptor knockout voles showed shorter huddling time than the wildtype voles. These suggest that oxytocin is important for empathic behavior.