**INTRODUCTION**

Monogamy is a sexual and affective social bond characterized by the formation of a relationship of exclusivity for a partial period of time or for life. Social affective relationships can have considerable influence in our psychological, physiological and behavioral functions, and for this reason, many efforts have been made to study the neurobiological mechanisms that may regulate them. Recent experiments have reported that vasopressin and oxytocin, two neuropeptides better known for their peripheral roles in parturition, lactation (oxytocin), vasconstriction and water retention (vasopressin), seem to exert a strong influence on the formation of this type of bond.

**MONOGAMY IN VOLES**

Prairie voles (Microtus ochrogaster), Montane voles (Microtus montanus) and Meadow voles (Microtus pennsylvanicus) are three different species of rodent mammals that inhabit North America, particularly the United States and Canada. Despite belonging to the same genus, there are important differences in their social behavior, specially in pair bond formation. Prairie vole is monogamous while Montane and Meadow voles are promiscuous. This difference allows them to be considered an excellent animal model to study the neurobiological mechanisms of monogamous behavior.

**VASOPRESSIN IN MONOGAMY**

In monogamous voles, there’s a microsatellite sequence of 428 bp DNA in the 5’ flanking region of Avpr1a, longer than in promiscuous voles. Gene transfer experiments have shown that if the gene Avpr1a (including microsatellite DNA sequence) of monogamous voles is injected to promiscuous voles, the pattern of receptor distribution obtained later became similar to those found in monogamous voles, and the genetically modified voles behave in a more monogamous way.

**OXYTOTIC IN MONOGAMY**

In humans, there are 3 repetitive sequences at the beginning of the Avpr1a that are polymorphic (fig.3). Several studies about monogamy have studied them to detect their effects on pair bond formation regulation. In monogamous species (e.g. humans, monkeys, cats, dogs, etc.), the oxytocin receptor gene is more expressed in the brain than in promiscuous species (e.g. rats, mice, etc.).

**Human model**

In humans, there are 3 repetitive sequences at the beginning of the Avpr1a that are polymorphic (fig.3). Several studies about monogamy have studied them to detect their effects on pair bond formation regulation. In monogamous species (e.g. humans, monkeys, cats, dogs, etc.), the oxytocin receptor gene is more expressed in the brain than in promiscuous species (e.g. rats, mice, etc.).

**CONCLUSION**

Neuropeptides vasopressin and oxytocin participate positively in regulating the monogamous behaviour in humans (vasopressin in males and oxytocin in females), improving the quality of partner relationships.

**REFERENCES**