

The importance of sex hormones in formation, development and regulation of sexually dimorphic behavior does not need to be stressed. However, their actual organizational and activational effects and interactions in sexual differentiation and determination are not fully understood yet. The aim of our study was to explore the effects of hormonal manipulation in eyelid-geckos (family Eublepharidae) and enlighten the role of steroid hormones in formation of sexual differences.

In the first part of our work we tried to reverse sex of Yucatán banded gecko (*Coleonyx elegans*) by hormonal manipulation in the early embryogenesis. This species has genotypic sex determination with chromosome set X_1X_2Y . In reverted individuals we aimed to examine the effects of steroid hormones on sexually dimorphic traits and in case of full sexual reversion and fertility of progeny, we would search for the sex-determining gene.

In the second part, we studied masculinization effects of testosterone in females of leopard gecko (*Eublepharis macularius*). In contrast with the *Coleonyx elegans* mentioned above, this species has temperature dependent sex determination, even though these two species are closely related. Experimental females were implanted with testosterone implants and therefore their testosterone levels were increased in long-term. We confirmed that this hormonal manipulation induces formation of male gonads and precloacal pores in females. We studied then the masculinization of female behavior in interactions with both males and females. Testosterone implanted females developed typically male sexual morphological traits and behavior. However, the copulation never occurred. Interestingly, the testosterone increased attractiveness, but the manipulated females were not receptive.

Our results imply, that steroid hormones have key role in formation and development of sexually dimorphic traits, however, the final phenotype is the result of various interactions of the whole hormonal complex and many other factors.