Prolactin is one of several hormones produced by the anterior pituitary cells and plays an important role in a variety of physiological processes including reproduction and lactation. Prolactin may modulate processes occurring in the ovarian follicles, corpora lutea and uterus. Prolactin secretion pattern in gilts during the estrous cycle is very differentiated: in the luteal phase its concentration is low, several peaks appear in the late luteal/early follicular phase and substantial increase in its secretion is observed during the late follicular phase. Regulation of prolactin secretion is a complex process, in which, besides hypothalamic factors, i.e. dopamine and TRH (thyrotropin-releasing hormone), the ovarian steroid hormones and substances produced by pituitary also participate. Previous studies carried out with small laboratory animals have indicated that among those locally acting factors we can distinguish neurokinins – peptides, discovered in the 70's of the twentieth century. Therefore, scientific aim of the study is to determine the role of neurokinin A and B in shaping the prolactin secretion pattern in gilts during the estrous cycle.

Within the proposed project we will carry out two experiments. The first experiment will enable to determine the pituitary expression of genes coding for neurokinin precursors and receptors in pigs during the estrous cycle. In the second experiment, using the *in vitro* culture of anterior pituitary cells in the presence of neurokinin A and B, we will examine whether and to what extent this factors can affect the expression of prolactin gene and genes related to prolactin release (dopamine and TRH receptors) as well as prolactin secretion by pituitary cells *in vitro*.

Results of the studies will provide relevant information on the role of neurokinins in the local regulation of prolactin secretion in cyclic gilts. The study will contribute to better understanding of the mechanism responsible for the modulation of prolactin secretion. Therefore, received data should be useful in solving endocrine disorders occurring in reproduction of domestic animals as well as humans.