

### 1. Institution

Institute of Animal Reproduction and Food Research of Polish Academy of Sciences, Division of Reproductive Endocrinology and Pathophysiology, Department of Pathology of Reproduction, ul. Tuwima 10, 10-747 Olsztyn, Poland

### 2. Principal investigator and contact person

Barbara Jana ([baja@pan.olsztyn.pl](mailto:baja@pan.olsztyn.pl))

### 3. Key personnel

Name	Research Tasks	e-mail
Anna Kozłowska assistant	production of arachidonic acid derivatives in uterus of pregnant animals; inflammatory mediators in inflamed uterus, and; innervation of polycystic ovaries	andzik@pan.olsztyn.pl
Marlena Koszykowska Ph. D. student	steroids and chemical coding of neurons supplying ovaries and uterus	koszykowska@pan.olsztyn.pl

### 4. Research profile

Research activity of the laboratory is oriented towards recognition of immuno-endocrine changes accompanying the origin and course of pathological states in reproductive organs of females of farm-animals. The subject of the studies is determine in inflamed porcine uterus synthesis and metabolism of arachidonic acid derivatives as well as participation of these substances in contractile activity of uterus. The effect of inflammatory mediators on production of arachidonic acid derivatives in fetal membranes and uterus of pregnant pigs is also examined. Further area of studies concern the influence of nerve fibers supplying ovaries on the course of cystic degeneration in this gland in the connection with endocrine changes as well as a role of growth factors in the development of this disease. Besides, an object of our interest is also recognition of the effect of elevated steroid levels, occurred in the course of pathological states of endocrine glands on chemical coding of neurons providing ovaries and on the steroidogenic activity of gonads.

### 5. Key technologies and tools

Genomics, transcriptomics, proteomics, endometrial cells and tissue culture

### 6. Selected publications (max. 5)

Jana B, Dzieńis A, Rogozińska A, Piskula M, Jedlińska-Krakowska M, Wojtkiewicz J, Majewski M. 2005. Dexamethasone-induced changes in sympathetic innervation of porcine ovaries and in their steroidogenic activity. *Journal of Reproduction and Development* 51, 715-725.

Jana B, Dzieńis A, Wojtkiewicz J, Kaczmarek M, Majewski M. 2007. Surgical denervation of ovaries in the gilts during the middle luteal phase of the estrous cycle changes morphology and steroidogenic activity of gonads. *Acta Veterinaria Hungarica* 55, 107-122.

Jana B, Kucharski J, Dzieńis A, Deptuła K. 2007. Changes in prostaglandin production and ovarian function in gilts during endometritis induced by *Escherichia coli* infection. *Animal Reproduction Science* 97, 137-150.

Koszykowska M, Wojtkiewicz J, Majewski M, Jana B. 2008. Effect of steroid hormones on the peripheral nervous system. *Journal of Animal and Feed Sciences* 17, 3-18.

Jana B, Kozłowska A, Andronowska A, Jedlińska-Krakowska M. 2008. The effect of tumor necrosis factor- $\alpha$  (TNF- $\alpha$ ), interleukin (IL)-1 $\beta$  and IL-6 on chorioamnion secretion of prostaglandins (PG) $F_{2\alpha}$  and  $E_2$  in pigs. *Reproductive Biology* 8, 57-68.