

## 1. Institution

Institute of Animal Reproduction and Food Research of Polish Academy of Sciences, Division of Reproductive Endocrinology and Pathophysiology, Laboratory of Reproductive Immunology, Tuwima 10 St., 10-747 Olsztyn, POLAND.

## 2. Principal investigator and contact person

Dariusz Jan Skarzynski ([skadar@pan.olsztyn.pl](mailto:skadar@pan.olsztyn.pl); <http://www.pan.olsztyn.pl/web/?q=node/40> )

## 3. Key personnel

Name	Research Tasks	e-mail
<b>Senior scientists</b>		
Izabela Woclawek-Potocka, assistant professor	Embryo- uterine communication during pregnancy in cow;	wiza@pan.olsztyn.pl
Anna Korzekwa, assistant professor	Physiology and pathology of the bovine ovary;	aniak@pan.olsztyn.pl
Marta Siemieniuch, assistant professor	Physiology and pathology of the male and female reproduction in the felids	martas@pan.olsztyn.pl
<b>Technicians</b>		
Katarzyna Jankowska, research specialist	Microscopy, immunocytochemistry, tissue and cell culture	kasia@pan.olsztyn.pl
Mamadou Moussa Bah, research specialist	Ovarian, uterine vein cannulation, aorta abdominalis cannulation, embryo transfer;	bamad@pan.olsztyn.pl
Karolina Lukasik, laboratory research assistant	Genomics, transcriptomics, proteomics, tissue and cell culture in mares	karluk@pan.olsztyn.pl
<b>PhD-students</b>		
Magdalena Majewska, PhD-student	Glucocorticoids and prostaglandins in the early pregnancy;	majewska@pan.olsztyn.pl

## 4. Research profile

The studies are focused on the mechanisms regulating physiological changes during estrous cycle as well as embryo-uterine interactions during maternal recognition of pregnancy and peri- implantation period in cows, mares and cats. The research area in the laboratory is centered around elucidating the causes of the high incidence of early embryonic mortality in domestic animals, especially in ruminants, mares and female cats. The Department performs also to some extent, applied studies on the possibility of application of nutritional, hormonal, pharmacological manipulations and biotechnique methods for the improvement of reproductive performances and for the diagnostics, prevention and therapy of periparturient disorders in cows, mares and female cats.

## 5. Key technologies and tools

*In vitro techniques:* genomics, transcriptomics, proteomics, endometrial, ovarian, endothelial cell and tissue culture,

*In vivo techniques:* surgery techniques: uterine and ovarian vein cannulation, aorta abdominalis cannulation, collection of the corpora lutea through laparotomy or vagotomy in cows, biopsies of the reproductive tissues, reproductive biotechniques.

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

- Okuda K, Kasahara Y, Murakami S, Takahashi H, Woclawek-Potocka I. & Skarzynski DJ. (2004) Regulation of cyclooxygenase-2 gene expression by tumor necrosis factor- $\alpha$  and interferon- $\tau$  in bovine endometrial stromal cells. *Biol Reprod* 70(1): 191-197.
- Woclawek-Potocka I, Bah MM, Korzekwa A, Piskula M, Wiczowski W, Depta A & Skarzynski DJ. (2005) Soy-bean derived phytoestrogens regulate prostaglandin secretion in endometrium during cattle estrous cycle and early pregnancy. *Exp Biol Med* 230(3): 189-199.
- Roberto da Costa RP, Ferreira-Dias G, Mateus L, Korzekwa A, Andronowska A, Platek R, Skarzynski DJ. (2007) Endometrial nitric oxide production and nitric oxide synthases in the equine endometrium: relationship with microvascular density during the estrous cycle. *Domest Anim Endocrinol* 32: 287-302
- Skarzynski DJ, Woclawek-Potocka I, Korzekwa A, Bah MM, Piotrowska KK, Barszczewska B & Okuda K (2007) Infusion of exogenous tumor necrosis factor dose dependently alters the length of the luteal phase in cattle: differential responses to treatment with Indomethacin and a Nitric Oxide Synthase inhibitor (L-NAME). *Biol Reprod* 76(4): 619-627.
- Siemieniuch MJ, Bogacki M, Skarżyński DJ, Woclawek-Potocka I, (2008) Differences between species in maternal recognition of pregnancy in mammals. *Medycyna Weterynaryjna*: 64: 546-560.