1. Institution

Chair of Animal Biochemistry and Biotechnology, Faculty of Animal Bioengineering, University of Warmia and Mazury in Olsztyn, 5 Oczapowski Street, 10-718 Olsztyn, Poland

2. Principal investigator and contact person

Jerzy Strzeżek (strzezek@uwm.edu.pl)

3. Key personnel

Name	Research Tasks	e-mail
Anna Dziekońska	bioenergetics of spermatozoa at different technologies of semen preservation	a.dziekonska@uwm.edu.pl
Leyland Fraser	cryobiochemistry of semen, application of sperm apoptotic markers (Comet assay) and fluorescent techniques in cell viability assessment	fraser@uwm.edu.pl
Władysław Kordan	functional proteomics, metabolism and functions of platelet-activating factor (PAF) in animal reproduction	wladyslaw.kordan@uwm.edu.pl
Marek Lecewicz	proteomics and cryobiochemistry of semen	mlecew@uwm.edu.pl
Rafał Strzeżek	biochemistry and cryobiochemistry of dog semen, role of prostatic fluid in dog reproductive processes	rafi@uwm.edu.pl
Paweł Wysocki	functional proteomics, role of protein tyrosine phosphorylation/dephosphorylation in reproductive processes and markers for detection of different cellular apoptotic stages (AnnexinV-FITC/PI)	pawel.wysocki@uwm.edu.pl
Magdalena Koziorowska-Gilun	enzymatic and non-enzymatic antioxidant systems in the male reproductive tract; composition and functions	magda.koziorowska@uwm.edu.pl

4. Research profile

The main research interests of my laboratory are focused on proteomics strategies, including the identification and characterization of key secretory proteins in the reproductive system. We have been pursuing functional proteomics and its application in animal research studies (boar and dog). The emphasis of research studies has been on the molecular and cellular mechanisms underlying protein tyrosine phosphorylation. Other studies in the laboratory are focused on the fundamental concepts of bioenergetics in spermatozoa, characterization of antioxidant profile systems in animal reproductive tract and development of sperm genomic integrity assays. Functions of seminal plasma proteins and antioxidant systems are investigated to develop alternative strategies to improve sperm cryosurvival.

5. Key technologies and tools

Functional proteomics, protein-protein interactions, genome analysis, gene expression, protein phosphorylation, bioenergetics, antioxidant systems and cryobiochemistry.

6. Selected publications (max. 5)

Strzeżek J., Wysocki P., Kordan K., Kuklińska K., Mogielnicka M., Soliwoda D., Fraser L. 2005. Proteomics of boar seminal plasma – current studies and possibility of their application in biotechnology of animal reproduction. Reproductive Biology, 5 (3), 271-290.

Fraser L., Strzeżek J. 2005. Effects of freezing-thawing on DNA integrity of boar spermatozoa assessed by the neutral comet assay. Reprod. Dom. Anim., 40, 530-536.

Wysocki P., Strzezek J. 2006. Isolation and biochemical charactertics of molecular form of epididymal acid phosphatase of boar seminal plasma. Theriogenology, 66 (9), 2152-2158.

Fraser L., Dziekońska A., Strzeżek R., Strzeżek J. 2007. Dialysis of boar semen prior to freezing-thawing: its effects on post-thaw sperm characteristics. Theriogenology, 67 (5), 994-100.

Kowalówka M., Wysocki P., Fraser L., Strzeżek J. 2008. Extracellular superoxide dismutase of boar seminal plasma. Reprod. Dom. Anim., doi: 10.1111/j.1439-0531.2007.00943.x.