

Technology Licensing Opportunity

Non-Confidential Summary



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NEW METHOD OF ESTROUS SYNCHRONIZATION ROI# 09-008

Opportunity:

Researchers at the University Saskatchewan have developed a novel method for controlling ovarian function and synchronizing ovulation in mammals. This method employs a class of compounds known as Aromatase Inhibitors, which have well-established safety profiles and are not associated with negative side effects.

Background:

The ability to electively control follicle development and ovulation is very important in all species for the purposes of insemination and the application of assisted reproductive technologies such as IVF and embryo transfer. This results in improved genetics and shorter time for estrous detection. Estrogen, progesterone and prostaglandins have been used in mammals to synchronize ovarian follicular wave development for fixed-time insemination or for ovarian superstimulation protocols for embryo transfer. However, the presence of estrogen in meat and other food products of animal origin is associated with an increased incidence of cancer and cardiovascular disease in humans.

The invention addresses following issues:

- Estrus detection is extremely inefficient and extremely labor intensive – hence, a tool that obviates estrus detection is very valuable to livestock producers
- Protocols involving steroid hormones (estradiol and progesterone) are effective, but are now being banned because of health concerns (real or imagined).
- The most common of the remaining pharmaceutical is GnRH and its analogues, which have significant limitations (not effective alone).

Invention features:

- **Safety:** Aromatase inhibitors have a well-established safety profile in humans and are not associated with unfavorable biological effects
- **Efficacy:** Aromatase inhibitors administration results in increased follicle size as well as provides higher level of progesterone which will improve the chances of successful pregnancy

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Researcher profiles:



Dr. Gregg Adams, DVM, PhD, DACT
Professor, Veterinary Biomedical Sciences

Research interests: comparative ovarian follicular development, synchronization and superstimulation, oocyte collection, in vitro embryo production and transfer



Dr. Roger Pierson, PhD, FEAS, FCAHS
Professor, Dept. of Obstetrics & Gynecology
Director, Reproductive Biology Research Unit

Research interests: ovarian follicular development, early embryo development, detection of embryonic anomalies

Patent Status:

International patent application no. PCT/CA2011/000578, filed May 19, 2011.

Publications:

J. Yapura, R.J. Mapletoft, J. Singh, R.A. Pierson, J. Naile, J.P. Geisy, H. Chang, E. Higley, M. Hecker and G.P. Adams. Effects of a Non-steroidal Aromatase Inhibitor on Ovarian Function in Cattle. *Reproductive Biology & Endocrinology. Reproduction, Fertility & Development* 24, 631-40. 2012

J. Yapura, R.J. Mapletoft, R.A. Pierson, J. Singh, J. Naile, J.P. Geisy and G.P. Adams. A Bovine Model for Examining the Effects of Aromatase Inhibitor on Ovarian Function in Women. *Fertility & Sterility* 96(2):434-441. 2011.

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