Biology of Reproduction Highlights .......................................................... 345
Reproductive Deficits in Male Freshwater Turtle Chrysemys picta from Cape Cod, Massachusetts ........ 346
Noppadon Kitana, Seung Jae Won, and Ian P. Callard
Using multiple biologic endpoints, reproductive deficits were found in adult male freshwater turtles trapped from a potentially impacted pond near a Superfund site on Cape Cod, Massachusetts.

Semen-Coagulating Protein, SVS2, in Mouse Seminal Plasma Controls Sperm Fertility .................... 353
Natsuko Kawano and Manabu Yoshida
During mouse copulation, SVS2 enters the uterus with sperm and functions as a decapacitation factor.

Culture of Zygotes Increases p53 Expression in B6 Mouse Embryos, which Reduces Embryo Viability .... 362
A. Li, V. Chandrakanthan, O. Chami, and C. O’Neill
Mouse strains show differences in their susceptibility to preimplantation culture in vitro, and TRP53 is up-regulated, and this is a cause of the loss of embryo viability consequent to embryo culture in a susceptible strain.

Effects of Metformin on Bovine Granulosa Cells Steroidogenesis: Possible Involvement of Adenosine 5’ Monophosphate-Activated Protein Kinase (AMPK) ................................................................. 368
Lucie Tosca, Christine Chabrolle, Svetlana Uzbekova, and Joëlle Dupont
In bovine granulosa cells, metformin decreases steroidogenesis and MAPK3/MAPK1 phosphorylation through AMPK activation.

Cell-Type Localization of Platelet-Derived Growth Factors and Receptors in the Postnatal Rat Ovary and Follicle ............................................................... 379
Leanne S. Sleer and Christopher C. Taylor
Platelet-derived growth factors and receptors are present in the rat ovarian follicle and contribute towards growth of preantral follicles.

Platelet-Derived Growth Factors and Receptors in the Rat Corpus Luteum: Localization and Identification of an Effect on Luteogenesis ................................................................. 391
Leanne S. Sleer and Christopher C. Taylor
Platelet-derived growth factors and receptors are present in cells of the rat ovarian corpus luteum and contribute towards luteogenesis.

Production of F1 Interspecies Hybrid Offspring with Cryopreserved Sperm from a Live-Bearing Fish, the Swordtail Xiphophorus helleri ................................................................. 401
Huiping Yang, Leona Hazlewood, Sheila J. Heater, Paula A. Guerrero, Ronald B. Walter, and Terrence R. Tiersch
Successful fertilization and offspring were produced by cryopreserved sperm in a live-bearing fish Xiphophorus helleri.

The 193-Base Pair Gsg2 (Haspin) Promoter Region Regulates Germ Cell-Specific Expression Bidirectionally and Synchronously ................................................................. 407
Keizo Tokuhito, Yasushi Miyagawa, Shuichi Yamada, Mika Hirose, Hiroshi Ohta, Yoshitake Nishimune, and Hiromitsu Tanaka
A novel 193-bp Gsg2 haspin DNA sequence introduces specific, bidirectional, and synchronous expression in haploid germ cells and may be regulated by binding with germ cell-specific nuclear complexes.

Receptor-Determined Susceptibility of Preimplantation Embryos to Pseudorabies Virus and Porcine Reproductive and Respiratory Syndrome Virus ................................................................. 415
Preimplantation embryos starting from the five-cell stage are susceptible to a PRV infection but are refractory to a PRRV infection.

Induction of Epididymal Boar Sperm Capacitation by pB1 and BSP-A1/-A2 Proteins, Members of the BSP Protein Family ................................................................. 424
Marie-France Lusignan, Annick Bergeron, Marie-Hélène Crête, Claude Lazure, and Puttaswamy Manjunath
The porcine pB1 protein and the bovine BSP-A1/-A2 protein potentiate the capacitation of epididymal boar sperm, indicating the importance of BSP protein homologs in mammalian sperm capacitation.
Differential Regulation of Colony Stimulating Factor 1 and Macrophage Migration Inhibitory Factor Expression by Inflammatory Cytokines in Term Human Decidua: Implications for Macrophage Trafficking at the Fetal-Maternal Interface

Felice Arcuri, Lynn Buchwalder, Paolo Toti, Marcella Cintorino, Piero Tosi, Charles J. Lockwood, Basya Rybalov, and Frederick Schatz

Differential regulation by TNF and IL1B of CSF1 expression in human decidual cells reveals a novel mechanism by which inflammatory cytokines can affect macrophage trafficking at the fetal-maternal interface and influence pregnancy.

Porcine SPDYA2 (RINGO A2) Stimulates CDC2 Activity and Accelerates Meiotic Maturation of Porcine Oocytes

Sachi Kume, Tsutomu Endo, Yukio Nishimura, Kiyoshi Kano, and Kunihiko Naito

Porcine SPDYA2 was cloned and mRNA injection and overexpression accelerated oocyte meiotic maturation.

Coordinated Regulation of Human Trophoblast Invasiveness by Macrophages and Interleukin 10

Stephen J. Renaud, Shannyn K. Macdonald-Goodfellow, and Charles H. Graham

Interleukin-10, a cytokine whose levels are decreased in the sera of women afflicted with preeclampsia, interferes with the ability of activated macrophages to inhibit trophoblast invasiveness.

Chronic Ethanol Perturbs Testicular Folate Metabolism and Dietary Folate Deficiency Reduces Sex Hormone Levels in the Yucatan Micropig


Chronic ethanol consumption impairs spermatogenesis, and dietary folate deficiency reduces sex hormones, with divergent effects on testicular folate metabolism; testicular methionine synthase may influence the hormonal regulation of spermatogenesis.

Low-Density Lipoprotein Receptor-Related Protein 8 (LRP8) Is Upregulated in Granulosa Cells of Bovine Dominant Follicle: Molecular Characterization and Spatio-Temporal Expression Studies

Tania Fayad, Réjean Lefebvre, Johannes Nimpf, David W. Silversides, and Jacques G. Lussier

The mRNAs encoding LRP8, RELN, and MAPK8IP1 are differentially expressed during final follicular growth and ovulation, and suggest the presence of a paracrine mechanism involving RELN/LRP8/MAPK8IP1 interaction in the regulation of follicular development.

Meiotic Induction by Heat Stress in Mouse Oocytes: Involvement of AMP-Activated Protein Kinase and MAPK Family Members

Cean LaRosa and Stephen M. Downs

Heat stress stimulates maturation in meiotically arrested mouse oocytes through activation of AMP-activated protein kinase.

Differential Expression of Glucose Transporters in Rabbit Placenta: Effect of Hypercholesterolemia in Dams

Othia Kevorkova, Maude Ethier-Chiasson, and Julie Lafond

Maternal hypercholesterolemia influences SLC2 translocation in placenta.

CYP2E1-Catalyzed Oxidation Contributes to the Sperm Toxicity of 1-Bromopropane in Mice


Metabolism of 1-bromopropane is mediated in part by CYP2E1, and activation via this enzyme may contribute to the male reproductive toxicity of this chemical.

Temporal Associations among Pulses of 13,14-Dihydro-15-keto-PGF_2alpha, Luteal Blood Flow, and Luteolysis in Cattle

O.J. Ginther, L.A. Silva, R.R. Araujo, and M.A. Beg

Luteal blood flow increased and decreased during individual PGFM pulses associated with spontaneous luteolysis.

The Influence of Nuclear Content on Developmental Competence of Gaur × Cattle Hybrid In Vitro Fertilized and Somatic Cell Nuclear Transfer Embryos

Gabriela F. Mastromonaco, Laura A. Favetta, Lawrence C. Smith, France Filion, and W. Allan King

Xenomitochondrial homoplasmy contributes to the poor developmental outcome observed in interspecies SCNT embryos between closely related Bos species.

Steroid Control of Gonadotropin-Releasing Hormone Secretion: Associated Changes in Pro-Opiomelanocortin and Proopioenkephalin Messenger RNA Expression in the Ovine Hypothalamus

James A. Taylor, Marie-Laure Goubillon, Kevin D. Broad, and Jane E. Robinson

Physiological concentrations of estrogen and progesterone that either stimulate or inhibit GnRH secretion, respectively, are associated with changes in gene expression for POMC and PENK in specific nuclei in the ovine hypothalamus.

Leptin Promotes Meiotic Progression and Developmental Capacity of Bovine Oocytes Via Cumulus Cell-Independent and -Dependent Mechanisms

Fabiola F. Paula-Lopes, Marc Boelhauve, Felix A. Habermann, Fred Sinowatz, and Eckhard Wolf

Leptin treatment during bovine maturation improved the ability of the oocyte to sustain embryonic development by enhanced oocyte maturation directly by acting on the oocyte and indirectly by preventing cumulus cell apoptosis.
Contents by Category

Embryo
362 Culture of Zygotes Increases p53 Expression in B6 Mouse Embryos, which Reduces Embryo Viability. A. Li, V. Chandrakanthan, O. Chami, and C. O’Neill


514 The Influence of Nuclear Content on Developmental Competence of Gaur × Cattle Hybrid In Vitro Fertilized and Somatic Cell Nuclear Transfer Embryos. Gabriela F. Mastromonaco, Laura A. Favetta, Lawrence C. Smith, France Filion, and W. Allan King

Environment
346 Reproductive Deficits in Male Freshwater Turtle Chrysemys picta from Cape Cod, Massachusetts. Noppadon Kitana, Seung Jae Won, and Ian P. Callard

Gamete Biology
353 Semen-Coagulating Protein, SVS2, in Mouse Seminal Plasma Controls Sperm Fertility. Natsuko Kawano and Manabu Yoshida

440 Porcine SPDYA2 (RINGO A2) Stimulates CDC2 Activity and Accelerates Meiotic Maturation of Porcine Oocytes. Sachi Kume, Tsutomu Endo, Yukio Nishimura, Kiyoshi Kano, and Kunihiko Naito

476 Meiotic Induction by Heat Stress in Mouse Oocytes: Involvement of AMP-Activated Protein Kinase and MAPK Family Members. Cean LaRosa, and Stephen M. Downs

Male Reproductive Tract

455 Chronic Ethanol Perturbs Testicular Folate Metabolism and Dietary Folate Deficiency Reduces Sex Hormone Levels in the Yucatan Micropig. Lynn M. Wallock-Montelius, Jesus A. Villanueva, Robert E. Chapin, A.J. Conley, Hung P. Nguyen, Bruce N. Ames, and Charles H. Halsted

Neuroendocrinology
524 Steroid Control of Gonadotropin-Releasing Hormone Secretion: Associated Changes in Pro-Opiomelanocortin and Preproenkephalin Messenger RNA Expression in the Ovine Hypothalamus. James A. Taylor, Marie-Laure Goubillon, Kevin D. Broad, and Jane E. Robinson

Ovary
368 Effects of Metformin on Bovine Granulosa Cells Steroidogenesis: Possible Involvement of Adenosine 5’ Monophosphate-Activated Protein Kinase (AMPK). Lucie Tosca, Christine Chabrolle, Svetlana Uzbekova, and Joëlle Duport

379 Cell-Type Localization of Platelet-Derived Growth Factors and Receptors in the Postnatal Rat Ovary and Follicle. Leanne S. Slee and Christopher C. Taylor

391 Platelet-Derived Growth Factors and Receptors in the Rat Corpus Luteum: Localization and Identification of an Effect on Luteogenesis. Leanne S. Slee and Christopher C. Taylor

466 Low-Density Lipoprotein Receptor-Related Protein 8 (LRP8) Is Upregulated in Granulosa Cells of Bovine Dominant Follicle: Molecular Characterization and Spatio-Temporal Expression Studies. Tania Fayad, Réjean Lefebvre, Johannes Nimpf, David W. Silversides, and Jacques G. Lussier


Pregnancy
433 Differential Regulation of Colony Stimulating Factor 1 and Macrophage Migration Inhibitory Factor Expression by Inflammatory Cytokines in Term Human Decidua: Implications for Macrophage Trafficking at the Fetal-Maternal Interface. Felice Arcuri, Lynn Buchwalder, Paolo Toti, Marcella Cintorino, Piero Tosi, Charles J. Lockwood, Basya Rybalov, and Frederick Schatz

448 Coordinated Regulation of Human Trophoblast Invasiveness by Macrophages and Interleukin 10. Stephen J. Renaud, Shannyn K. MacDonald-Goodfellow, and Charles H. Graham


Reproductive Technology
401 Production of F1 Interspecies Hybrid Offspring with Cryopreserved Sperm from a Live-Bearing Fish, the Swordtail Xiphophorus helleri. Huiping Yang, Leona Hazlewood, Sheila J. Heater, Paula A. Guerrero, Ronald B. Walter, and Terrence R. Tiersch

532 Leptin Promotes Meiotic Progression and Developmental Capacity of Bovine Oocytes Via Cumulus Cell-Independent and -Dependent Mechanisms. Fabiola F. Paula-Lopes, Felix A. Habermann, Fred Sinowatz, and Eckhard Wolf

Testis
407 The 193-Base Pair Gsp2 (Haspin) Promoter Region Regulates Germ Cell-Specific Expression Bidirectionally and Synchronously. Keizo Tokuhiro, Yasushi Miyagawa, Shuichi Yamada, Mika Hirose, Hiroshi Ohta, Yoshitake Nishimune, and Hiromitsu Tanaka

Toxicology