Charlotte Schubert

**Minireview. Xenobiotic Effects on Ovarian Preantral Follicles**

Connie J. Mark-Kappeler, Patricia B. Hoyer, and Patrick J. Devine

The rate of ovarian follicle loss is accelerated by multiple toxic exposures, including drugs and environmental toxicants, leading to earlier ovarian failure, loss of fertility, and other detrimental health effects.

**Quantitative Investigations on the Effects of Exposure Durations to the Combined Cryoprotective Agents on Mouse Oocyte Vitrification Procedures**

Liang Wang, Jun Liu, Guang-Bin Zhou, Yun-Peng Hou, Jun-Jie Li, and Shi-En Zhu

The duration of exposure to combined cryoprotective agents has significant effects on the survival rates of vitrified oocytes.

**Bezafibrate Restores the Inhibition of FSH-Induced Follicular Development and Steroidogenesis by Tumor Necrosis Factor-Alpha Through Peroxisome Proliferator-Activated Receptor-Gamma Pathway in an In Vitro Mouse Preantral Follicle Culture**

Shuichiro Hara, Toshifumi Takahashi, Mitsuyoshi Amita, Hideo Igarashi, Seiji Tsutsumi, and Hirohisa Kurachi

Bezafibrate rescues the inhibition of FSH-induced follicle survival, antral formation, and 17β-estradiol production by TNF-alpha in an in vitro mouse preantral follicle culture system.

**Misexpression of Wingless-Related MMTV Integration Site 5A in Mouse Mammary Gland Inhibits the Milk Ejection Response and Regulates Connexin43 Phosphorylation**

Sarah E. Baxley, Wen Jiang, and Rosa Serra

Ectopic expression of WNT5A in the mammary gland impairs milk ejection and oxytocin response and alters Cx43 phosphorylation.

**Prostaglandin E2 Receptors Are Differentially Expressed in Subpopulations of Granulosa Cells from Primate Periovulatory Follicles**

Siabhon M. Harris, Lindsey C. Aschenbach, Stephanie M. Skinner, Brandy L. Dozier, and Diane M. Duffy

Each of four PGE2 receptors is differentially expressed in subpopulations of granulosa cells, suggesting each subpopulation may generate a unique response to PGE2 during ovulation.

**Identification of CEACAM6 as an Intermediate Filament-Associated Protein Expressed in Sertoli Cells of Rat Testis**

Hitoshi Kurio, Hiroshi Hatsuoda, Emi Murayama, Takame Kaneko, and Hiroshi Iida

Carcinoembryonic antigen-related cell adhesion molecule 6 gene (CEACAM6) is involved in regulation of vimentin architecture.

**Expression of Tubb3, a Beta-Tubulin Isotype, Is Regulated by Androgens in Mouse and Rat Sertoli Cells.**

Karel De Gendt, Evi Denolet, Ariane Willems, Veerle W. Daniels, Liesbeth Clincemalie, Sarah Denayer, Miles F. Wilkinson, Frank Claessens, Johannes V. Swinnen, and Guido Verhoeven

Tubb3, a beta-tubulin isotype, is regulated by androgens in Sertoli cells, indicating the Sertoli cell cytoskeleton is a target of androgen action on spermatogenesis.

**Fibroblast Growth Factor 2 Promotes Primitive Endoderm Development in Bovine Blastocyst Outgrowths**

Qi En Yang, Sarah D. Fields, Kun Zhang, Manabu Ozawa, Sally E. Johnson, and Alan D. Ealy

Fibroblast growth factor 2 supplementation of bovine blastocysts induced primitive endoderm outgrowth formation by regulating lineage segregation and promoting proliferation.

**Uterine Gland Formation in Mice Is a Continuous Process, Requiring the Ovary after Puberty, But Not after Parturition.**


Uterine gland development is a continuous process that occurs postnatally, postpubertally, and postpartum, and that requires the ovary after puberty, but not after parturition.

**Upstream Stimulatory Factor Induces Nr5a1 and Shbg Gene Expression During the Onset of Rat Sertoli Cell Differentiation**

Michelle A. Wood, Priya Mukherjee, Corey A. Toocheck, and William H. Walker

The increased expression of upstream stimulatory factors 1 and 2 (USF1 and USF2) occurs when differentiation of rat Sertoli cells is sufficient to up-regulate Nr5a1 and Shbg gene expression.
Spatiotemporal Expression of Bone Morphogenetic Protein Family Ligands and Receptors in the Zebrafish Ovary: A Potential Paracrine-Signaling Mechanism for Oocyte-Follicle Cell Communication ................................. 977
Cheuk Wun Li and Wei Ge
Bmp family members are involved in zebrafish follicle development, and have a particular role as oocyte-derived factors.

Voltage-Gated Potassium Currents Are Targets of Diurnal Changes in Estradiol Feedback Regulation and Kisspeptin Action on Gonadotropin-Releasing Hormone Neurons in Mice .......................................................... 987
Justyna Pielecka-Fortuna, R. Anthony DeFazio, and Suzanne M. Moenter
Estradiol, kisspeptin, and time of day interact to modulate potassium conductances in GnRH neurons, revealing novel aspects of the neurobiology of negative vs. positive feedback.

Adherens Junction Proteins in the Hamster Uterus: Their Contributions to the Success of Implantation .... 996
Liming Luan, Tianbing Ding, Amanda Stinnett, Jeff Reese, and Bibhash C. Paria
Uterine adherens junctional proteins ensure growth and protection of the embryo during early pregnancy by creating a favorable uterine environment.

Maternal Heme Oxygenase 1 Regulates Placental Vasculature Development via Angiogenic Factors in Mice ........................................................................ 1005
Hui Zhao, Junuya Azuma, Flora Kalish, Ronald J. Wong, and David K. Stevenson
Maternal HMOX1 is essential for the formation of the fetomaternal interface, remodeling of the uterine spiral arteries, and differentiation and maturation of uNK cells; its effects are primarily mediated through the regulation of a group of pro- and anti-angiogenesis factors in the decidua/MLAp region.

Loss of Heterochromatin Protein 1 Gamma Reduces the Number of Primordial Germ Cells via Impaired Cell Cycle Progression in Mice ................................................................. 1013
Kanae Abe, Chie Naruse, Tomoaki Kato, Takumi Nishiiuchi, Mitiotin Saitou, and Masahide Asano
The reduced number of primordial germ cells in heterochromatin protein 1 γ-deficient embryos is caused by impaired G1/S transition in cell cycle progression of primordial germ cells.

Beta- and Gamma-Cytoplasmic Actins Are Required for Meiosis in Mouse Oocytes .................................................. 1025
Céline Brockmann, Joachim Huarte, Vera Dugina, Ludvine Challet, Emmanuelle Rey, Béatrice Conne, Adam Swetloff, Serge Nef, Christine Chaponnier, and Jean-Dominique Vassalli
Differential distribution and function of beta- and gamma-cytoplasmic actin isoforms are present in the maturing oocyte and in pre-implantation embryos.

The Placental Response to Excess Maternally Glucocorticoid Exposition Differs Between the Male and Female Conceptus in Spiny Mice ................................................................. 1040
Bree A. O’Connell, Karen M. Moritz, Claire T. Roberts, David W. Walker, and Hayley Dickinson
A short exposure to maternally administered dexamethasone at midpregnancy has both immediate and long-term effects on placental structure and gene transcription, and these factors are dependent on fetal sex.

Histone Deacetylase Inhibition Improves Activation of Ribosomal RNA Genes and Embryonic Nucleolar Reprogramming in Cloned Mouse Embryos ......................................................... 1048
Hong-Thuy Bui, Hyeon-Jeong Seo, Mi-Rung Park, Jong-Yi Park, Nguyen Van Thuan, Teruhiko Wakayama, and Jin-Hoi Kim
Scriptaid, a histone deacetylase inhibitor, promoted normal embryonic gene activation to overcome the delayed activation of nucleolar function in somatic cell nuclear transfer embryos.

Neurons of the Lateral Preoptic Area/Rostral Anterior Hypothalamic Area Are Required for Photoperiodic Inhibition of Estrous Cyclicity in Sheep .......................................................... 1057
Stanley M. Hileman, Christina J. McManus, Robert L. Goodman, and Heiko T. Jansen
Neurons in the IPOA/rAHA mediate photosuppression of estrous cycles in sheep and are anatomically connected to other hypothalamic areas implicated in photoperiodic control of reproduction.

Reduced Glutathione Enhances Fertility of Frozen/Thawed C57BL/6 Mouse Sperm after Exposure to Methyl-Beta-Cyclodextrin ........................................................................ 1066
Toru Takeo and Naomi Nakagata
Adding reduced glutathione to in vitro fertilization medium modifies the oocyte zona pellucida and enhances the fertilization rate with frozen/thawed C57BL/6 mouse sperm.

Positive Feedback Loop Between Prostaglandin E2 and EGF-Like Factors Is Essential for Sustainable Activation of MAPK3/1 in Cumulus Cells During In Vitro Maturation of Porcine Cumulus Oocyte Complexes .................................................. 1073
Yasuhiwa Yamashita, Minako Okamoto, Ikko Kawashima, Tetsuji Okazaki, Ryo Nishimura, Yosuke Gunji, Mitsugu Hishinuma, and Masayuki Shimada
PGE2 maintains MAPK3/1 phosphorylation via a prolonged expression of EGF-like factors in cumulus cells, causing induction of cumulus expansion and oocyte maturation of porcine cumulus oocyte complexes in vitro.
Synergistic Regulation of Human Oxytocin Receptor Promoter by CCAAT/Enhancer-Binding Protein and RELA

Shirin Khanjani, Vasso Terzidou, Yun S. Lee, Steve Thornton, Mark R. Johnson, and Phillip R. Bennett

RELA and CEBPB synergistically regulate the oxytocin receptor (OXTR) promoter through a 20-bp sequence of the OXTR promoter, full length of the RELA protein, and bZIP region of CEBPB.
Embryo
946 Fibroblast Growth Factor 2 Promotes Primitive Endoderm Development in Bovine Blastocyst Outgrowths. Qi En Yang, Sarah D. Fields, Kun Zhang, Manabu Ozawa, Sally E. Johnson, and Alan D. Ealy

Female Reproductive Tract
907 Misexpression of Wingless-Related MMTV Integration Site 5A in Mouse Mammary Gland Inhibits the Milk Ejection Response and Regulates Connexin43 Phosphorylation. Sarah E. Baxley, Wen Jiang, and Rosa Serra

Gamete Biology
1013 Loss of Heterochromatin Protein 1 Gamma Reduces the Number of Primordial Germ Cells via Impaired Cell Cycle Progression in Mice. Kanae Abe, Chie Naruse, Tomoaki Kato, Takumi Niihuchi, Mitinori Saitou, and Masahide Asano
1025 Beta- and Gamma-Cytoskeletal Actins Are Required for Meiosis in Mouse Oocytes. Céline Brockmann, Joachim Huarte, Vera Dugina, Ludvine Challet, Emmanuelle Rey, Bénarice Conne, Adam Swetloff, Serge Nef, Christine Chaponnier, and Jean-Dominique Vassalli

Male Reproductive Tract
965 Upstream Stimulatory Factor Induces Nsr1a and Shbg Gene Expression During the Onset of Rat Sertoli Cell Differentiation. Michelle A. Wood, Priya Mukherjee, Corey A. Toocheck, and William H. Walker

Mechanisms of Hormone Action
1083 Synergistic Regulation of Human Oxytocin Receptor Promoter by CCAAT/Enhancer-Binding Protein and RELA. Shirin Khanjani, Vasso Terzidou, Yun S. Lee, Steve Thornton, Mark R. Johnson, and Phillip R. Bennett

Minireview
871 Xenobiotic Effects on Ovarian Preantral Follicles. Connie J. Mark-Kappeler, Patricia B. Hoyer, and Patrick J. Devine

Neuroendocrinology
1057 Neurons of the Lateral Preoptic Area/Rostral Anterior Hypothalamic Area Are Required for Photoperiodic Inhibition of Estrous Cyclicity in Sheep. Stanley M. Hileman, Christina J. McManus, Robert L. Goodman, and Heiko T. Jansen

Ovary
985 Bezafibrate Restores the Inhibition of FSH-Induced Follicular Development and Steroidogenesis by Tumor Necrosis Factor-Alpha Through Peroxisome Proliferator-Activated Receptor-Gamma Pathway in an In Vitro Mouse Preantral Follicle Culture. Shuichiro Hara, Toshifumi Takahashi, Mitsuyoshi Amita, Hideki Igarashi, Seiji Tsutsumi, and Hirohisa Kurachi

916 Prostaglandin E2 Receptors Are Differentially Expressed in Subpopulations of Granulosa Cells from Primate Preovulatory Follicles. Siabhon M. Harris, Lindsey C. Aschenbach, Stephanie M. Skinner, Brandy L. Dozier, and Diane M. Duffy

977 Spatiotemporal Expression of Bone Morphogenetic Protein Family Ligands and Receptors in the Zebrafish Ovary: A Potential Paracrine-Signaling Mechanism for Oocyte-Follicle Cell Communication. Cheuk Wun Li and Wei Ge

1073 Positive Feedback Loop Between Prostaglandin E2 and EGF-Like Factors Is Essential for Sustainable Activation of MAPK3/1 in Cumulus Cells During In Vitro Maturation of Porcine Cumulus Oocyte Complexes. Yasuhisa Yamashita, Minako Okamoto, Ikko Kawashima, Tetsuji Okazaki, Ryo Nishimura, Yosuke Gunji, Mitsugu Hishinuma, and Masayuki Shimada

Pregnancy
996 Adherens Junction Proteins in the Hamster Uterus: Their Contributions to the Success of Implantation. Liming Luan, Tianbing Ding, Amanda Stinnett, Jeff Reese, and Bibhash C. Paria

1005 Maternal Heme Oxygenase 1 Regulates Placental Vasculature Development via Angiogenic Factors in Mice. Hui Zhao, Junya Azuma, Fiora Kalish, Ronald J. Wong, and David K. Stevenson


Reproductive Technology
884 Quantitative Investigations on the Effects of Exposure Durations to the Combined Cryoprotective Agents on Mouse Oocyte Vitrification Procedures. Liang Wang, Jun Liu, Guang-Bin Zhou, Yun-Peng Hou, Jun-Jie Li, and Shi-En Zhu

1048 Histone Deacetylase Inhibition Improves Activation of Ribosomal RNA Genes and Embryonic Nuclear Reprogramming in Cloaked Mouse Embryos. Hong-Thuy Bui, Hyeon-Jeong Seo, Mi-Rung Park, Jong-Yi Park, Nguyen Van Thuan, Teruhiko Wakayama, and Jin-Hoi Kim

1066 Reduced Glutathione Enhances Fertility of Frozen/Thawed C57BL/6 Mouse Sperm after Exposure to Methyl-Beta-Cyclodextrin. Toru Takeo and Naomi Nakagata

Tests
924 Identification of CEACAM6 as an Intermediate Filament-Associated Protein Expressed in Sertoli Cells of Rat Testis. Hitoshi Kurio, Hiroshi Hatsuda, Emi Murayama, Takane Kaneko, and Hiroshi Iida

934 Expression of Tubb3, a Beta-Tubulin Isoform, Is Regulated by Androgens in Mouse and Rat Sertoli Cells. Karel De Gendt, Evi Deenoot, Ariane Willems, Veerle W. Daniels, Liesbeth Clinckemalie, Sarah Denayer, Miles P. Wilkinson, Frank Claessens, Johannes V. Swinnen, and Guido Verhoeven