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World of Reproductive Biology

Charlotte Schubert

Reversing the Effects of Maternal Obesity

Biol Reprod January 2016 94 (1) 1, 1-1; published ahead of printOctober 7, 2015, doi:10.1095/biolreprod.115.136119

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Don't Play with Histones

Biol Reprod January 2016 94 (1) 2, 1-1; published ahead of printOctober 14, 2015, doi:10.1095/biolreprod.115.136275

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Smoking Out Fetal Growth Restriction

Biol Reprod January 2016 94 (1) 3, 1-1; published ahead of printOctober 21, 2015, doi:10.1095/biolreprod.115.136465

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piRNAs Power Sperm Development in the Adult

Biol Reprod January 2016 94 (1) 4, 1-1; published ahead of printOctober 28, 2015, doi:10.1095/biolreprod.115.136689

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Minireview

-
- Jonathan T. Busada and Christopher B. Geyer

The Role of Retinoic Acid (RA) in Spermatogonial Differentiation

Biol Reprod January 2016 94 (1) 10, 1-10; published ahead of printNovember 11, 2015, doi:10.1095/biolreprod.115.135145

[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#) [Author Biosketches](#)**Summary:** This minireview summarizes recent progress in the studies of spermatogonial differentiation.

-
- Jian-Qi Wang and Wen-Guang Cao

Key Signaling Events for Committing Mouse Pluripotent Stem Cells to the Germline Fate

Biol Reprod January 2016 94 (1) 24, 1-9; published ahead of printDecember 16, 2015, doi:10.1095/biolreprod.115.135095

[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#) [Author Biosketches](#)**Summary:** We review mechanisms of competent regulators on primordial germ cell induction and discuss current achievements and difficulties in inducing sex-specific germline development.[Clear](#) [Get All Checked Abstracts](#)

Research Articles

Female Reproductive Tract

-
- Soon Hon Cheong, Ocilon G. Sá Filho, Victor A. Absalón-Medina,Susanne H. Pelton, W. Ronald Butler, and Robert O. Gilbert

Metabolic and Endocrine Differences Between Dairy Cows That Do or Do Not Ovulate First Postpartum Dominant Follicles

Biol Reprod January 2016 94 (1) 18, 1-11; published ahead of printDecember 2, 2015, doi:10.1095/biolreprod.114.127076

[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#)**Summary:** Failure to ovulate the first postpartum dominant follicle results in more severe negative energy balance, greater insulin resistance, fewer luteinizing hormone pulses, and lower follicular fluid androstenedione and estradiol concentrations in cows.

-
- Stephen G. Moore, Jennie E. Pryce, Ben J. Hayes,Amanda J. Chamberlain, Kathryn E. Kemper, Donagh P. Berry,Matt McCabe, Paul Cormican, Pat Lonergan, Trudee Fair,and Stephen T. Butler

Differentially Expressed Genes in Endometrium and Corpus Luteum of Holstein Cows Selected for High and Low Fertility Are Enriched for Sequence Variants Associated with Fertility

Biol Reprod January 2016 94 (1) 19, 1-11; published ahead of printNovember 25, 2015, doi:10.1095/biolreprod.115.132951

[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#) [Supplemental Data](#)**Summary:** Genes differentially expressed in the endometrium and corpus luteum between cows with either high or low fertility have identified genome regions likely to have an important role in reproduction.[Clear](#) [Get All Checked Abstracts](#)

Gamete Biology

-
- Chika Yamashiro, Takayuki Hirota, Kazuki Kurimoto, Tomonori Nakamura, Yukihiro Yabuta, So I. Nagaoka, Hiroshi Ohta, Takuya Yamamoto,and Mitinori Saitou

Persistent Requirement and Alteration of the Key Targets of PRDM1 During Primordial Germ Cell Development in Mice

Biol Reprod January 2016 94 (1) 7, 1-14; published ahead of printNovember 19, 2015, doi:10.1095/biolreprod.115.133256

[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#) [Supplemental Data](#)**Summary:** PRDM1, a critical transcriptional repressor for PGC specification, regulates distinct targets and is essential both in migrating and gonadal PGCs.

-
- Daniel W. Serber, John S. Runge, Debashish U. Menon,and Terry Magnuson

The Mouse INO80 Chromatin-Remodeling Complex Is an Essential Meiotic Factor for Spermatogenesis

Biol Reprod January 2016 94 (1) 8, 1-9; published ahead of printNovember 25, 2015, doi:10.1095/biolreprod.115.135533

[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#) [Supplemental Data](#)**Summary:** The INO80 chromatin-remodeling complex core subunit is expressed during spermatogenesis and regulates basic meiotic functions including synapsis and recombination.

-
- Angus D. Macaulay, Isabelle Gilbert, Sara Scantland, Eric Fournier,Fazl Ashkar, Alexandre Bastien, Habib A. Shojaei Saadi,Dominic Gagné, Marc-André Sirard, Édouard W. Khandjian,François J. Richard, Poul Hyttel, and Claude Rob

Cumulus Cell Transcripts Transit to the Bovine Oocyte in Preparation for Maturation

Biol Reprod January 2016 94 (1) 16, 1-11; published ahead of printNovember 19, 2015, doi:10.1095/biolreprod.114.127571

[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#) [Supplemental Data](#)**Summary:** Potential of the oocyte to complete maturation is dependent on cumulus cell transfer of large RNA to the gamete.

-
- Melanie L. Sutton-McDowall, Linda L.Y. Wu, Malcolm Purdey,Andrew D. Abell, Ewa M. Goldys, Keith L. MacMillan,Jeremy G. Thompson, and Rebecca L. Robker

Nonesterified Fatty Acid-Induced Endoplasmic Reticulum Stress in Cattle Cumulus Oocyte Complexes Alters Cell Metabolism and Developmental Competence

Biol Reprod January 2016 94 (1) 23, 1-9; published ahead of

printDecember 9, 2015, doi:10.1095/biolreprod.115.131862

Abstract Full Text Full Text (PDF) Supplemental Data

Summary: Nonesterified fatty acid supplementation during maturation of cattle cumulus oocyte complexes perturbs metabolism and embryo development, with the endoplasmic reticulum stress pathway identified as one of the causative pathways.

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Male Reproductive Tract

- Corey Toocheck, Terri Clister, John Shupe, Chelsea Crum, Preethi Ravindranathan, Tae-Kyung Lee, Jung-Mo Ahn, Ganesh V. Raj, Meena Sukhwani, Kyle E. Orwig, and William H. Walker

Mouse Spermatogenesis Requires Classical and Nonclassical Testosterone Signaling

Biol Reprod January 2016 94 (1) 11, 1-14; published ahead of printNovember 25, 2015, doi:10.1095/biolreprod.115.132068

Abstract Full Text Full Text (PDF)

Summary: Testosterone acts via both the classical and nonclassical pathways in Sertoli cells to support spermatogenesis in mice.

- Bongki Kim and Sylvie Breton

The MAPK/ERK-Signaling Pathway Regulates the Expression and Distribution of Tight Junction Proteins in the Mouse Proximal Epididymis

Biol Reprod January 2016 94 (1) 22, 1-12; published ahead of printDecember 9, 2015, doi:10.1095/biolreprod.115.134965

Abstract Full Text Full Text (PDF) Supplemental Data

Summary: Epididymal expression of a subset of tight junction proteins depends on ERK1/2 phosphorylation, indicating the participation of the MAPK signaling pathway in the control of the blood-epididymis barrier in the mouse.

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Ovary

- Yoni Cohen, Hagit Dafni, Reut Avni, Liat Fellus, Filip Bochner, Ron Rotkopf, Tal Raz, Laura E. Benjamin, Kenneth Walsh, and Michal Neeman

Genetic and Pharmacological Modulation of Akt1 for Improving Ovarian Graft Revascularization in a Mouse Model

Biol Reprod January 2016 94 (1) 14, 1-11; published ahead of printOctober 21, 2015, doi:10.1095/biolreprod.115.131987

Abstract Full Text Full Text (PDF) Supplemental Data

OPEN ACCESS ARTICLE

Summary: Posttransplantation ischemia of ovarian grafts could be reduced through genetic or pharmacological activation of Akt1, resulting in enhanced development of functional graft vasculature.

- Dawn R. Sessions-Bresnahan, Kevin L. Schauer, Adam L. Heuberger, and Elaine M. Carnevale

Effect of Obesity on the Preovulatory Follicle and Lipid Fingerprint of Equine Oocytes

Biol Reprod January 2016 94 (1) 15, 1-12; published ahead of printDecember 2, 2015, doi:10.1095/biolreprod.115.130187

Abstract Full Text Full Text (PDF) Supplemental Data

Summary: Excess adiposity is sufficient to alter preovulatory follicular fluid chemical composition, oocyte lipid content and lipid metabolic gene expression, endoplasmic reticulum stress, and mitochondrial function in granulosa and cumulus cells.

- Svetlana Farberov and Rina Meidan

Thrombospondin-1 Affects Bovine Luteal Function via Transforming Growth Factor-Beta1-Dependent and Independent Actions

Biol Reprod January 2016 94 (1) 25, 1-9; published ahead of printDecember 9, 2015, doi:10.1095/biolreprod.115.135822

Abstract Full Text Full Text (PDF)

Summary: Thrombospondin-1 activates latent TGF β 1 thereby inducing SERPINE1 expression in corpus luteum in vivo and in luteal endothelial cells; these three genes promote vascular instability, apoptosis, and matrix remodeling during luteolysis.

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Pregnancy

- Amar S. More, Jay S. Mishra, Kathirvel Gopalakrishnan, Chellakkan S. Blesson, Gary D. Hankins, and Kunju Sathishkumar

Prenatal Testosterone Exposure Leads to Gonadal Hormone-Dependent Hyperinsulinemia and Gonadal Hormone-Independent Glucose Intolerance in Adult Male Rat Offspring

Biol Reprod January 2016 94 (1) 5, 1-11; published ahead of printNovember 19, 2015, doi:10.1095/biolreprod.115.133157

Abstract Full Text Full Text (PDF)

Summary: Prenatal testosterone exposure leads to glucose intolerance and hyperinsulinemia that are associated with hyperandrogenism in adult males while peripubertal gonadectomy reverses hyperinsulinemia but not glucose intolerance in these animals.

- Masanaga Muto, Yoshitaka Fujihara, Tomohiro Tobita, Daiji Kiyozumi, and Masahito Ikawa

Lentiviral Vector-Mediated Complementation Restored Fetal Viability but Not Placental Hyperplasia in *Plac1*-Deficient Mice

Biol Reprod January 2016 94 (1) 6, 1-9; published ahead of printNovember 19, 2015, doi:10.1095/biolreprod.115.133454

Abstract Full Text Full Text (PDF) Supplemental Data

Summary: Lentiviral vector-mediated complementation restores placental function in *Plac1* mutant mice, but placental hyperplasia remains, implicating the importance of fetoplacental *Plac1* gene expression.

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Reproductive Technology

- Mito Kanatsu-Shinohara, Hiroko Morimoto, and Takashi Shinohara

Enrichment of Mouse Spermatogonial Stem Cells by the Stem Cell Dye CDy1

Biol Reprod January 2016 94 (1) 13, 1-10; published ahead of printNovember 25, 2015, doi:10.1095/biolreprod.115.135707

Abstract Full Text Full Text (PDF) Supplemental Data

Summary: CDy1 was found to stain mouse spermatogonial stem cells.

- Ayumi Hasegawa, Keiji Mochida, Hiroki Inoue, Yoshihiro Noda, Tamao Endo, Gen Watanabe, and Atsuo Ogura

High-Yield Superovulation in Adult Mice by Anti-Inhibin Serum Treatment Combined with Estrous Cycle Synchronization

Biol Reprod January 2016 94 (1) 21, 1-8; published ahead of printDecember 2, 2015, doi:10.1095/biolreprod.115.134023

Abstract Full Text Full Text (PDF) Supplemental Data

OPEN ACCESS ARTICLE

Summary: Estrous cycle synchronization followed by anti-inhibin

serum and hCG treatment serves as a broadly applicable, highly efficient superovulation regimen for adult mice of different strains and ages.

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Testis

- Travis Kent, Samuel L. Arnold, Rachael Fasnacht, Ross Rowsey, Debra Mitchell, Cathryn A. Hogarth, Nina Isoherranen, and Michael D. Griswold
ALDH Enzyme Expression Is Independent of the Spermatogenic Cycle, and Their Inhibition Causes Misregulation of Murine Spermatogenic Processes
Biol Reprod January 2016 94 (1) 12, 1-13; published ahead of print December 2, 2015, doi:10.1095/biolreprod.115.131458
[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#) [Supplemental Data](#)
Summary: ALDH enzymes are vital for both BTB maintenance and meiosis but not likely responsible for the regulation of RA cyclicity.
- Leanne Stalker, Stewart J. Russell, Carmon Co, Robert A. Foster, and Jonathan LaMarre
PIWIL1 Is Expressed in the Canine Testis, Increases with Sexual Maturity, and Binds Small RNAs
Biol Reprod January 2016 94 (1) 17, 1-10; published ahead of print December 9, 2015, doi:10.1095/biolreprod.115.131854
[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#) [Supplemental Data](#)
Summary: PIWIL1 expression in canine testes tracks with sexual maturity and is capable of binding small RNA suggesting that the PIWI system is active in a canine model.

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Toxicology

- Pavine L.C. Lefèvre, Robert G. Berger, Sheila R. Ernest, Dean W. Gaertner, Dorothea F.K. Rawn, Michael G. Wade, Bernard Robaire, and Barbara F. Hales
Exposure of Female Rats to an Environmentally Relevant Mixture of Brominated Flame Retardants Targets the Ovary, Affecting Folliculogenesis and Steroidogenesis
Biol Reprod January 2016 94 (1) 9, 1-11; published ahead of print November 25, 2015, doi:10.1095/biolreprod.115.134452
[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#) [Supplemental Data](#)
Summary: Exposure of female rats to an environmentally relevant mixture of brominated flame retardants before mating and during pregnancy alters folliculogenesis, ovarian gene expression, and circulating steroid concentrations.

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Additions and Corrections

ADDITIONS AND CORRECTIONS

Biol Reprod January 2016 94 (1) 20, 1-1; published ahead of print December 16, 2015, doi:10.1095/biolreprod.115.137885
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