

December 1, 2014; 91 (6)

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World of Reproductive Biology

Charlotte Schubert

SSR 2014: Australian Research Reins in Assisted Reproduction

Biol Reprod December 2014 91 (6) 130, 1-2; published ahead of print September 3, 2014, doi:10.1095/biolreprod.114.124933

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Planting the Paternal Genome

Biol Reprod December 2014 91 (6) 131, 1-1; published ahead of print September 10, 2014, doi:10.1095/biolreprod.114.125062

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Oocyte Wake-Up Call

Biol Reprod December 2014 91 (6) 132, 1-1; published ahead of print September 17, 2014, doi:10.1095/biolreprod.114.125294

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Giving Protamines the Boot

Biol Reprod December 2014 91 (6) 133, 1-1; published ahead of print September 24, 2014, doi:10.1095/biolreprod.114.125435

[Full Text](#) [Full Text \(PDF\)](#)

Minireview

-
- Masanori Ono, Serdar E. Bulun, and Tetsuo Maruyama

Tissue-Specific Stem Cells in the Myometrium and Tumor-Initiating Cells in Leiomyoma

Biol Reprod December 2014 91 (6) 149, 1-7; published ahead of print November 5, 2014, doi:10.1095/biolreprod.114.123794

[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#) [Author Biosketches](#)

Summary: Current studies of myometrial and leiomyoma stem/progenitor cells are reviewed and provide a new paradigm for understanding myometrial physiology and pathology in that these cells might contribute to uterine remodeling during pregnancy and the formation of leiomyomas.

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Research Articles

Behavior

-
- Vineet Kumar, Anand Vasudevan, Linda Jing Ting Soh, Choo Le Min, Ajai Vyas, Maha Zewail-Foote, and Fay A. Guarraci

Sexual Attractiveness in Male Rats Is Associated with Greater Concentration of Major Urinary Proteins

Biol Reprod December 2014 91 (6) 150, 1-7; published ahead of print October 30, 2014, doi:10.1095/biolreprod.114.117903

[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#)

Summary: The first report of a physiological feature of the male that contributes to mate preferences in female rats.

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Embryo

-
- Linlin Sui, Lei An, Kun Tan, Zhuqing Wang, Shumin Wang, Kai Miao, Likun Ren, Li Tao, Shuzhi He, Yong Yu, Jinzhou Nie, Qian Liu, Lei Xing, Zhonghong Wu,

Dynamic Proteomic Profiles of In Vivo- and In Vitro-Produced Mouse Postimplantation Extraembryonic Tissues and Placentas

Biol Reprod December 2014 91 (6) 155, 1-16; published ahead of print October 15, 2014, doi:10.1095/biolreprod.114.124248

[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#) [Supplemental Data](#)

Summary: Comparative proteomic analysis shows in vitro-produced extraembryonic tissues and placentas are characterized by aberrant genetic information processing, altered energy metabolism, and disorganized cytoskeletons and intracellular transport.

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Female Reproductive Tract

-
- Siri Luck Ponsuksilli, Dawit Tesfaye, Karl Schellander, Michael Hoelker, Frieder Hadlich, Manfred Schwerin, and Klaus Wimmers

Differential Expression of miRNAs and Their Target mRNAs in Endometria Prior to Maternal Recognition of Pregnancy Associates with Endometrial Receptivity for In Vivo- and In Vitro-

Produced Bovine Embryos

Biol Reprod December 2014 91 (6) 135, 1-12; published ahead of print September 24, 2014, doi:10.1095/biolreprod.114.121392

[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#) [Supplemental Data](#)

Summary: The abundance of miRNAs and their target mRNAs in endometria at the early luteal phase of the pretransfer cycle is indicative for the receptivity of cows for in vivo- and in vitro-produced bovine embryos and promotes the important role of regulatory miRNA-mRNA networks related to chromatin organization, miRNA-mediated epigenetic histone changes, and hormone response.

- Zhaohui Liao and Peter G. Smith

Persistent Genital Hyperinnervation Following Progesterone Administration to Adolescent Female Rats

Biol Reprod December 2014 91 (6) 144, 1-9; published ahead of print October 30, 2014, doi:10.1095/biolreprod.114.121103

[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#)

Summary: High dose progesterone administration during adolescence, which strongly predisposes women to genital hyperinnervation and pelvic pain (vulvar vestibulodynia), produces persistently increased vaginal sensory and sympathetic innervation in a rat model.

- Aykut Gram, Barbara Fox, Urs Büchler, Alois Boos, Bernd Hoffmann, and Mariusz P. Kowalewski

Canine Placental Prostaglandin E2 Synthase: Expression, Localization, and Biological Functions in Providing Substrates for Prepartum PGF2alpha Synthesis

Biol Reprod December 2014 91 (6) 154, 1-14; published ahead of print October 8, 2014, doi:10.1095/biolreprod.114.122929

[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#)

[OPEN ACCESS ARTICLE](#)

Summary: The enzymatic activity of microsomal fractions from the prepartum dog uterus and placenta suggest the locally produced PGE2 as a substrate for prepartum PGF2alpha synthesis in the dog.

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Gamete Biology

- Annabelle Congras, Martine Yerle-Bouissou, Alain Pinton, Florence Vignoles, Laurence Liaubet, Stéphane Ferchaud, and Hervé Acloque

Sperm DNA Methylation Analysis in Swine Reveals Conserved and Species-Specific Methylation Patterns and Highlights an Altered Methylation at the *GNAS* Locus in Infertile Boars

Biol Reprod December 2014 91 (6) 137, 1-14; published ahead of print October 15, 2014, doi:10.1095/biolreprod.114.119610

[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#) [Supplemental Data](#)

Summary: Sperm DNA methylation reflects the paternal status of imprinted genes in swine and is increased at the *GNAS* locus of infertile boars.

- Sergio A. Machado, Govindasamy Kadirvel, Bradford W. Daigneault, Claudia Korneli, Paul Miller, Nicolai Bovin, and David J. Miller

Lewis^X-Containing Glycans on the Porcine Oviductal Epithelium Contribute to Formation of the Sperm Reservoir

Biol Reprod December 2014 91 (6) 140, 1-9; published ahead of print October 22, 2014, doi:10.1095/biolreprod.114.119503

[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#) [Supplemental Data](#)

Summary: Oviductal Lewis X glycan moiety binds porcine sperm specifically and is necessary for normal sperm binding to isthmic epithelial cells.

- Kazuteru Hasegawa and Yumiko Saga

FGF8-FGFR1 Signaling Acts as a Niche Factor for Maintaining Undifferentiated Spermatogonia in the Mouse

Biol Reprod December 2014 91 (6) 145, 1-8; published ahead of print October 30, 2014, doi:10.1095/biolreprod.114.121012

[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#) [Supplemental Data](#)

Summary: Fibroblast growth factor signaling maintains undifferentiated spermatogonia in vivo by activating ERK1/2 signaling.

- Shavahn C. Loux, Beatriz Macías-García, Lauro González-Fernández, Heloisa DeSiqueira Canesin, Dickson D. Varner, and Katrin Hinrichs

Regulation of Axonemal Motility in Demembrated Equine Sperm

Biol Reprod December 2014 91 (6) 152, 1-16; published ahead of print October 22, 2014, doi:10.1095/biolreprod.114.122804

[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#) [Supplemental Data](#)

Summary: Demembrated equine sperm fail to hyperactivate in response to increasing calcium; they are arrested, with a straight flagellum, by excess calcium at relatively low concentrations and are fully motile at free calcium concentrations as low as 27 pM.

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Immunology

- Alison E. Wallace, Sonu S. Goulwara, Guy S. Whitley, and Judith E. Cartwright

Oxygen Modulates Human Decidual Natural Killer Cell Surface Receptor Expression and Interactions with Trophoblasts

Biol Reprod December 2014 91 (6) 134, 1-6; published ahead of print September 17, 2014, doi:10.1095/biolreprod.114.121566

[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#) [Supplemental Data](#)

Summary: Fluctuating oxygen concentrations similar to those experienced in the decidua alter decidual natural killer cell interactions with trophoblast and receptor expression.

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Male Reproductive Tract

- Julie Dufresne and Daniel G. Cyr

Regulation of the Pannexin-1 Promoter in the Rat Epididymis

Biol Reprod December 2014 91 (6) 143, 1-13; published ahead of print November 5, 2014, doi:10.1095/biolreprod.114.122168

[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#)

Summary: DNA methylation, ETV4, and CREB transcription factors regulate the transcription of the *Pannexin1* gene in the rat epididymis.

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Neuroendocrinology

- Chrysanthi Fergani, Jean E. Routly, David N. Jones, Lucy C. Pickavance, Robert F. Smith, and Hilary Dobson

Activation of Cells Containing Estrogen Receptor Alpha or Somatostatin in the Medial Preoptic Area, Arcuate Nucleus, and Ventromedial Nucleus of Intact Ewes During the Follicular Phase, and Alteration after Lipopolysaccharide

Biol Reprod December 2014 91 (6) 141, 1-12; published ahead of print October 15, 2014, doi:10.1095/biolreprod.114.122408

[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#)

Summary: There is a distinct temporal pattern of ER alpha and somatostatin neuronal cell activation in the hypothalamus during the follicular phase; this pattern is disrupted by LPS.

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Ovary

- Khampoun Sayasith, Jean Sirois, and Jacques G. Lussier

Expression and Regulation of Regulator of G-Protein Signaling Protein-2 (RGS2) in Equine and Bovine Follicles prior to Ovulation: Molecular Characterization of RGS2 Transactivation in Bovine Granulosa Cells

Biol Reprod December 2014 91 (6) 139, 1-12; published ahead of print October 22, 2014, doi:10.1095/biolreprod.114.121186

[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#)

Summary: Human chorionic gonadotropin induces RGS2 up-regulation in equine and bovine preovulatory follicles; forskolin-inducible RGS2 expression in bovine granulosa cells is dependent on *trans*-activating CREB1 and ETS1 proteins, and multiple signaling pathways, including PKA, ERK1/2, EGFR, PGR, and PTGS2.

- Jia Peng, Karen Wigglesworth, Adithya Rangarajan, John J. Eppig, Thomas B. Thompson, and Martin M. Matzuk

Amino Acid 72 of Mouse and Human GDF9 Mature Domain Is Responsible for Altered Homodimer Bioactivities but Has Subtle Effects on GDF9:BMP15 Heterodimer Activities

Biol Reprod December 2014 91 (6) 142, 1-7; published ahead of print September 24, 2014, doi:10.1095/biolreprod.114.123158

[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#)

Summary: Arginine in the pre-helix loop of mature GDF9 is solely responsible for altered homodimer bioactivities, but the arginine residue only has subtle effects on GDF9:BMP15 heterodimer activity.

- Jiyong Liu, Xing Du, Jilong Zhou, Zengxiang Pan, Honglin Liu, and Qifa Li

MicroRNA-26b Functions as a Proapoptotic Factor in Porcine Follicular Granulosa Cells by Targeting Sma- and Mad-Related Protein 4

Biol Reprod December 2014 91 (6) 146, 1-12; published ahead of print November 13, 2014, doi:10.1095/biolreprod.114.122788

[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#) [Supplemental Data](#)

Summary: SMAD4 may be involved in ovary development and selection, which increased the proliferation of porcine GCs.

- Maëva Elzaïat, Luc Jouneau, Dominique Thépot, Christophe Klopp, Aurélie Allais-Bonnet, Cédric Cabau, Marjolaine André, Stéphane Chaffaux, Edmond-Paul C

High-Throughput Sequencing Analyses of XX Genital Ridges Lacking *FOXL2* Reveal *DMRT1* Up-Regulation Before *SOX9* Expression During the Sex-Reversal Process in

Goats

Biol Reprod December 2014 91 (6) 153, 1-14; published ahead of print November 13, 2014, doi:10.1095/biolreprod.114.122796

[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#) [Supplemental Data](#)

Summary: *FOXL2* ablation in early developing goat ovaries leads to the deregulation of 163 downstream genes, and notably *DMRT1*, a critical testis-determining factor.

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Pregnancy

- Cécile Vernochet, François Redelsperger, Francis Harper, Sylvie Souquere, François Catzeflis, Gérard Pierron, Eviatar Nevo, Thierry Heidmann, and Anne Dup

The Captured Retroviral Envelope *syncytin-A* and *syncytin-B* Genes Are Conserved in the Spalacidae Together with Hemotrichorial Placentation

Biol Reprod December 2014 91 (6) 148, 1-16; published ahead of print October 22, 2014, doi:10.1095/biolreprod.114.124818

[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#) [Supplemental Data](#)

Summary: The presence of *syncytin-A* and *-B* genes and of a hemotrichorial type of placentation extend to a divergent branch of Muroidea, the Spalacidae, arguing for a role of *syncytin* gene capture in the emergence of this unique placental structure in Muroidea.

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Testis

- Xianbo Zhang, Hai Wang, Minghui Li, Yuning Cheng, Dongneng Jiang, Lina Sun, Wenjing Tao, Linyan Zhou, Zhijian Wang, and Deshou Wang

Isolation of *Doublesex-* and *Mab-3*-Related Transcription Factor 6 and Its Involvement in Spermatogenesis in Tilapia

Biol Reprod December 2014 91 (6) 136, 1-10; published ahead of print October 15, 2014, doi:10.1095/biolreprod.114.121418

[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#) [Supplemental Data](#)

Summary: The *dmt6* gene, which probably originated from the basal bony fish and experienced gene transposition after the divergence of teleosts from other bony fish, is a regulator of spermatogenesis in Nile tilapia and possibly in other vertebrates.

- Vanessa Reame, Eloísa Zanin Pytlowanciv, Daniele Lisboa Ribeiro, Thiago Feres Pissolato, Sebastião Roberto Taboga, Rejane Maira Góes, and Maria Etelvina

Obesogenic Environment by Excess of Dietary Fats in Different Phases of Development Reduces Spermatic Efficiency of Wistar Rats at Adulthood: Correlations with Metabolic Status

Biol Reprod December 2014 91 (6) 151, 1-10; published ahead of print October 22, 2014, doi:10.1095/biolreprod.114.121962

[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#)

Summary: Obesogenic environment induced by a diet containing a fivefold excess of fat markedly reduced the sperm production in the rat either before or after sexual maturation, and this reduction was associated with testosterone decrease and hyperleptinemia.

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Additions and Corrections**ADDITIONS AND CORRECTIONS**

Biol Reprod December 2014 91 (6) 138, 1-1; published ahead of print October 22, 2014, doi:10.1095/biolreprod.114.126169

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ADDITIONS AND CORRECTIONS

Biol Reprod December 2014 91 (6) 147, 1-3; published ahead of print November 13, 2014, doi:10.1095/biolreprod.114.126706

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