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December 1, 2015; 93 (6)

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## World of Reproductive Biology

Charlotte Schubert

### Keeping the Cycles in Sync

Biol Reprod December 2015 93 (6) 125, 1-1; published ahead of printSeptember 2, 2015, doi:10.1095/biolreprod.115.135210

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### Adaptive Immunity Regulates Mammary Gland Development

Biol Reprod December 2015 93 (6) 126, 1-1; published ahead of printSeptember 9, 2015, doi:10.1095/biolreprod.115.135392

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### Brain Circuit Compels Maternal Behavior Through Oxytocin

Biol Reprod December 2015 93 (6) 127, 1-1; published ahead of printSeptember 16, 2015, doi:10.1095/biolreprod.115.135525

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### Superfamily Supports Pregnancy

Biol Reprod December 2015 93 (6) 128, 1-1; published ahead of printSeptember 23, 2015, doi:10.1095/biolreprod.115.135756

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### Protocol for Placental Precursors

Biol Reprod December 2015 93 (6) 129, 1-1; published ahead of printSeptember 30, 2015, doi:10.1095/biolreprod.115.135913

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## Minireview

Eric E. Nilsson and Michael K. Skinner

### Environmentally Induced Epigenetic Transgenerational Inheritance of Reproductive Disease

Biol Reprod December 2015 93 (6) 145, 1-8; published ahead of printOctober 28, 2015, doi:10.1095/biolreprod.115.134817

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

**Summary:** This review of studies in a variety of species suggests that ancestral exposures to environmental insults promote transgenerational inheritance of reproductive disease susceptibility.

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## Research Articles

### Embryo

Fanli Meng, Blaise Forrester-Gauntlett, Pavla Turner, Harold Henderson, and Björn Oback

### Signal Inhibition Reveals JAK/STAT3 Pathway as Critical for Bovine Inner Cell Mass Development

Biol Reprod December 2015 93 (6) 132, 1-9; published ahead of printOctober 28, 2015, doi:10.1095/biolreprod.115.134254

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

**Summary:** Small molecule screen identifies JAK/STAT3 signals as critical for bovine ICM development and pluripotency acquisition.

Luke S. Lambeth, Katie Ayers, Andrew D. Cutting, Timothy J. Doran, Andrew H. Sinclair, and Craig A. Smith

### Anti-Müllerian Hormone Is Required for Chicken Embryonic Urogenital System Growth but Not Sexual Differentiation

Biol Reprod December 2015 93 (6) 138, 1-12; published ahead of printOctober 28, 2015, doi:10.1095/biolreprod.115.131664

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

**Summary:** AMH is not required for correct testis and ovarian pathway signaling but is needed in a sex-independent manner for urogenital system growth and cell proliferation.

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### Environment

Alan M. Martinez, Ana Cheong, Jun Ying, Jingchuan Xue, Kurunthachalam Kannan, Yuet-Kin Leung, Michael A. Thomas, and Shuk-Mei Ho  
**Effects of High-Butterfat Diet on Embryo Implantation in Female**

## Rats Exposed to Bisphenol A

Biol Reprod December 2015 93 (6) 147, 1-9; published ahead of print October 28, 2015, doi:10.1095/biolreprod.115.131433

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

**Summary:** Exposure to high-butterfat diet shortly before and during pregnancy promotes early embryo growth, counteracts implantation disruption by BPA, and thus possibly improves pregnancy outcomes in women with high infertility risk.

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## Gamete Biology

- Shiho Sumigama, Steven Mansell, Melissa Miller, Polina V. Lishko, Gary N. Cherr, Stuart A. Meyers, and Theodore Tollner

### **Progesterone Accelerates the Completion of Sperm Capacitation and Activates CatSper Channel in Spermatozoa from the Rhesus Macaque**

Biol Reprod December 2015 93 (6) 130, 1-11; published ahead of print October 21, 2015, doi:10.1095/biolreprod.115.129783

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

**Summary:** Similar to human sperm, P4 triggers macaque spermatozoa to undergo CatSper activation and enhances zona binding and hyperactivation.

- Amanda C. Fitzgerald, Candace Peyton, Jing Dong, and Peter Thomas

### **Bisphenol A and Related Alkylphenols Exert Nongenomic Estrogenic Actions Through a G Protein-Coupled Estrogen Receptor 1 (Gper)/Epidermal Growth Factor Receptor (Egfr) Pathway to Inhibit Meiotic Maturation of Zebrafish Oocytes**

Biol Reprod December 2015 93 (6) 135, 1-11; published ahead of print October 21, 2015, doi:10.1095/biolreprod.115.132316

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

**Summary:** Low concentrations of bisphenol A and related alkylphenols exert nongenomic estrogenic actions to inhibit meiotic maturation of zebrafish oocytes in vitro.

- Tracy M. Clement, Amy L. Inselman, Eugenia H. Goulding, William D. Willis, and Edward M. Eddy

### **Disrupting Cyclin Dependent Kinase 1 in Spermatocytes Causes Late Meiotic Arrest and Infertility in Mice**

Biol Reprod December 2015 93 (6) 137, 1-12; published ahead of print October 21, 2015, doi:10.1095/biolreprod.115.134940

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

**Summary:** CDK1 is required for bivalent chromosome compaction and separation at metaphase but not for desynapsis or events before completion of diplotene during late events of meiosis I in spermatocytes.

- Hanna Maria Korhonen, Ram Prakash Yadav, Matteo Da Ros, Frédéric Chalmel, Céline Zimmermann, Jorma Toppari, Serge Nef, and Noora Kotaja

### **DICER Regulates the Formation and Maintenance of Cell-Cell Junctions in the Mouse Seminiferous Epithelium**

Biol Reprod December 2015 93 (6) 139, 1-13; published ahead of print October 28, 2015, doi:10.1095/biolreprod.115.131938

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

**Summary:** Germ cell-specific deletion of *Dicer1* demonstrates it is essential for the correct organization of cell-cell junctions in the mouse seminiferous epithelium.

- Gerardo M. Oresti, Daniel A. Peñalva, Jessica M. Luquez, Silvia S. Antollini, and Marta I. Aveldaño

### **Lipid Biochemical and Biophysical Changes in Rat Spermatozoa During Isolation and Functional Activation In Vitro**

Biol Reprod December 2015 93 (6) 140, 1-13; published ahead of print October 21, 2015, doi:10.1095/biolreprod.115.131201

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

**Summary:** Ceramides and free fatty acids, formed during isolation and functional activation in vitro, promote biophysical alterations in rat spermatozoa membrane.

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## Mechanisms of Hormone Action

- Cong Liu, Guo-Quan Wu, Xiang-Wei Fu, Xian-Hong Mo, Li-Hong Zhao, Hong-Mei Hu, Shi-En Zhu, and Yun-Peng Hou

### **The Extracellular Calcium-Sensing Receptor (CASR) Regulates Gonadotropins-Induced Meiotic Maturation of Porcine Oocytes**

Biol Reprod December 2015 93 (6) 131, 1-9; published ahead of print October 21, 2015, doi:10.1095/biolreprod.115.128579

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

**Summary:** Gonadotropin-activated CASR promotes meiotic maturation of porcine oocytes.

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## Ovary

- Scott M. Convissar, Jill Bennett, Sarah C. Baumgarten, John P. Lydon, Francesco J. DeMayo, and Carlos Stocco

**GATA4 and GATA6 Knockdown During Luteinization Inhibits Progesterone Production and Gonadotropin Responsiveness in the Corpus Luteum of Female Mice**

Biol Reprod December 2015 93 (6) 133, 1-10; published ahead of print October 28, 2015, doi:10.1095/biolreprod.115.132969

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

**Summary:** The transcription factors GATA4 and GATA6 are essential for the regulation of the luteinizing hormone receptor and steroidogenic gene expression required for luteal progesterone production, corpus luteum function, and female fertility.

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## Pregnancy

- Yuanlin Dong, Ancizar Betancourt, Madhu Chauhan, Meena Balakrishnan, Fernando Lugo, Matthew L. Anderson, Jimmy Espinoza, Karin Fox, Michael Belfort, and

**Pregnancy Increases Relaxation in Human Omental Arteries to the CGRP Family of Peptides**

Biol Reprod December 2015 93 (6) 134, 1-10; published ahead of print October 28, 2015, doi:10.1095/biolreprod.115.135665

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

**Summary:** CALCB contributes to vascular adaptation in pregnancy.

- Madhu Chauhan, Meena Balakrishnan, Rexanna Chan, and Chandrasekhar Yallampalli

**Adrenomedullin 2 (ADM2) Regulates Mucin 1 at the Maternal-Fetal Interface in Human Pregnancy**

Biol Reprod December 2015 93 (6) 136, 1-8; published ahead of print October 28, 2015, doi:10.1095/biolreprod.115.134296

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

**Summary:** Adrenomedullin may facilitate pregnancy via regulation of MUC1.

- Nicole M. Ventura, Terry Y. Li, M. Yat Tse, R. David Andrew, Chandrakant Tayade, Albert Y. Jin, and Stephen C. Pang

**Onset and Regression of Pregnancy-Induced Cardiac Alterations in Gestationally Hypertensive Mice: The Role of the Natriuretic Peptide System**

Biol Reprod December 2015 93 (6) 142, 1-8; published ahead of print November 4, 2015, doi:10.1095/biolreprod.115.132696

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

**Summary:** The renin-angiotensin system and the natriuretic peptide system postpartum are involved at different times in the onset and regression of pregnancy-induced cardiac alterations in gestationally-hypertensive mice.

- Jinjuan Zhang, Tianjie Li, Weizhi Ji, Yang Yu, and Tao Tan

**Rho GDIalpha Modulates Rabbit Trophoblast Stem Cell Survival and Migration**

Biol Reprod December 2015 93 (6) 144, 1-9; published ahead of print November 11, 2015, doi:10.1095/biolreprod.115.132019

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

**Summary:** Overexpression of Rho GDIalpha resulted in rapid apoptosis, while knockdown of Rho GDIalpha promoted proliferation and invasion in trophoblast stem cells.

- Jared J. Romero, Alfredo Q. Antoniazzi, Terry M. Nett, Ryan L. Ashley, Brett T. Webb, Natalia P. Smirnova, Rebecca C. Bott, Jason E. Bruemmer, Fuller W. B.

**Temporal Release, Paracrine and Endocrine Actions of Ovine Conceptus-Derived Interferon-Tau During Early Pregnancy**

Biol Reprod December 2015 93 (6) 146, 1-10; published ahead of print November 11, 2015, doi:10.1095/biolreprod.115.132860

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

**Summary:** Conceptus-derived interferon-tau is detected in uterine vein blood and induces interferon-stimulated genes in uterine and extrauterine tissues, such as the corpus luteum and liver.

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## Reproductive Technology

- Patricia Martin Muñoz, Cristina Ortega Ferrusola, Guillermo Vizuete, Maria Plaza Dávila, Heriberto Rodríguez Martínez, and Fernando J. Peña

**Depletion of Intracellular Thiols and Increased Production of 4-Hydroxynonenal that Occur During Cryopreservation of Stallion Spermatozoa Lead to Caspase Activation, Loss of Motility, and Cell Death**

Biol Reprod December 2015 93 (6) 143, 1-11; published ahead of print November 4, 2015, doi:10.1095/biolreprod.115.132878

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

**Summary:** Cryopreservation dramatically reduced thiol content in stallion spermatozoa when the functionality of thawed spermatozoa appeared highly correlated with thiol content.

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#### Testis

- Egle A. Ortega, Victor A. Ruthig, and Monika A. Ward  
**Sry-Independent Overexpression of Sox9 Supports Spermatogenesis and Fertility in the Mouse**

Biol Reprod December 2015 93 (6) 141, 1-12; published ahead of print November 4, 2015, doi:10.1095/biolreprod.115.135400

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

**Summary:** Transgenic overexpression of *Sox9* in absence of *Sry* allows for the development of fertile males.