

January 1, 2015; 92 (1)

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## World of Reproductive Biology

Charlotte Schubert

**Pregnancy's Fast Flame for the Flu**

Biol Reprod January 2015 92 (1) 1, 1-1; published ahead of printOctober 1, 2014, doi:10.1095/biolreprod.114.125542

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

Charlotte Schubert

**Guiding Sperm Development**

Biol Reprod January 2015 92 (1) 2, 1-1; published ahead of printOctober 8, 2014, doi:10.1095/biolreprod.114.125666

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

Charlotte Schubert

**Love or Lego Bricks?**

Biol Reprod January 2015 92 (1) 3, 1-1; published ahead of printOctober 15, 2014, doi:10.1095/biolreprod.114.125898

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

Charlotte Schubert

**Co-Opted Viral Gene in Ancient Mammals Fuses Placental Cells**

Biol Reprod January 2015 92 (1) 4, 1-1; published ahead of printOctober 22, 2014, doi:10.1095/biolreprod.114.126193

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

Charlotte Schubert

**Signals Crossed in Preeclampsia**

Biol Reprod January 2015 92 (1) 5, 1-1; published ahead of printOctober 30, 2014, doi:10.1095/biolreprod.114.126342

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

## Commentary

Petra Clara Arck, Kurt Hecher, and María Emilia Solano

**B Cells in Pregnancy: Functional Promiscuity or Tailored Function?**

Biol Reprod January 2015 92 (1) 12, 1-3; published ahead of printNovember 26, 2014, doi:10.1095/biolreprod.114.126110

[Full Text](#) [Full Text \(PDF\)](#)**Summary:** B cells are increasingly recognized as critical players during maternal immune adaptation to pregnancy and provide the foundation of protective immunity for the newborn.

## Minireview

- 
- Yanchang Wei, Teng Zhang, Ya-Peng Wang, Heide Schatten, and Qing-Yuan Sun

**Polar Bodies in Assisted Reproductive Technology: Current Progress and Future Perspectives**

Biol Reprod January 2015 92 (1) 19, 1-8; published ahead of printDecember 3, 2014, doi:10.1095/biolreprod.114.125575

[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#) [Author Biosketches](#)**Summary:** The emerging roles for polar bodies will contribute to a better understanding of reproductive health, and polar body manipulation and diagnosis will allow production of a greater number of healthy babies.

- 
- Jeffrey T. Thome, Thalia R. Segal, Sydney Chang, Soledad Jorge, James H. Segars, and Phyllis C. Leppert

**Dynamic Reciprocity Between Cells and Their Microenvironment in Reproduction**

Biol Reprod January 2015 92 (1) 25, 1-10; published ahead of printNovember 19, 2014, doi:10.1095/biolreprod.114.121368

[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#) [Author Biosketches](#)**Summary:** Dynamic reciprocity between the extracellular matrix and cells shapes ovarian physiology, uterine fibroid development, and the mammary gland.[Clear](#) [Get All Checked Abstracts](#)

## Research Articles

### Embryo

- 
- Kamil Krawczynski, Joanna Najmula, Stefan Bauersachs, and Monika M. Kaczmarek

**MicroRNAome of Porcine Conceptuses and Trophoblasts: Expression Profile of microRNAs and Their Potential to Regulate Genes Crucial for Establishment of Pregnancy**

Biol Reprod January 2015 92 (1) 21, 1-13; published ahead of printDecember 3, 2014, doi:10.1095/biolreprod.114.123588

[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#) [Supplemental Data](#)**Summary:** MicroRNAs are differentially expressed in porcine conceptuses and trophoblasts and have potential to regulate genes crucial for establishment of pregnancy.[Clear](#) [Get All Checked Abstracts](#)

### Gamete Biology

- 
- Naoya Araki, György Trencsényi, Zoárd T. Krasznai, Enikő Nizsalóczki, Ayako Sakamoto, Natsuko Kawano, Kenji Miyado, Kaoru Yoshida, and Manabu Yoshida

**Seminal Vesicle Secretion 2 Acts as a Protectant of Sperm Sterols and Prevents Ectopic Sperm Capacitation in Mice**

Biol Reprod January 2015 92 (1) 8, 1-10; published ahead of print November 13, 2014, doi:10.1095/biolreprod.114.120642

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

**Summary:** Seminal vesicle secretion 2 (SVS2) acts as a protectant of cholesterol in murine sperm and plays a key factor in switching the fertilizing ability of sperm in vivo.

- Xiu-Fen Wu, Hong-Jie Yuan, Hong Li, Shuai Gong, Juan Lin, Yi-Long Miao, Tian-Yang Wang, and Jing-He Tan

**Restraint Stress on Female Mice Diminishes the Developmental Potential of Oocytes: Roles of Chromatin Configuration and Histone Modification in Germinal Vesicle Stage Oocytes**

Biol Reprod January 2015 92 (1) 13, 1-9; published ahead of print November 19, 2014, doi:10.1095/biolreprod.114.124396

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

**Summary:** The SN chromatin configuration is uncoupled from the increased histone acetylation/methylation in stressed oocytes and the developmental potential of SN oocytes is more closely correlated with epigenetic histone modification than with chromatin configuration.

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#### Immunology

- Alexander P. Sobinoff, Samantha J. Dando, Kate A. Redgrove, Jessie M. Sutherland, Simone J. Stanger, Charles W. Armitage, Peter Timms, Eileen A. McLaughlin, and Kenneth W. Beagley

**Chlamydia muridarum Infection-Induced Destruction of Male Germ Cells and Sertoli Cells Is Partially Prevented by Chlamydia Major Outer Membrane Protein-Specific Immune CD4 cells**

Biol Reprod January 2015 92 (1) 27, 1-13; published ahead of print December 3, 2014, doi:10.1095/biolreprod.114.124180

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

**Summary:** *Chlamydia* infection of male mice ascends to the testis, causing chronic pathology, which results in severe disruption of seminiferous tubules, including increased mitotic proliferation, apoptosis, and DNA repair, in spermatogonial cells, Sertoli cells, and germ cells.

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#### Male Reproductive Tract

- Bongki Kim, Jeremy Roy, Winnie W.C. Shum, Nicolas Da Silva, and Sylvie Breton

**Role of Testicular Luminal Factors on Basal Cell Elongation and Proliferation in the Mouse Epididymis**

Biol Reprod January 2015 92 (1) 9, 1-11; published ahead of print November 19, 2014, doi:10.1095/biolreprod.114.123943

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

**Summary:** Efferent duct ligation (EDL) reduces the number of basal cells (BCs) with an intercellular projection in the initial segment, and induces a wave of apoptosis, followed by an increase in proliferation in a subset of BCs that survived the initial insult caused by EDL.

- Mark A. Baker, Anita Weinberg, Louise Hetherington, Ana Izabel S.B. Villaverde, and Tony Velkov

**Analysis of Protein Thiol Changes Occurring During Rat Sperm Epididymal Maturation**

Biol Reprod January 2015 92 (1) 11, 1-10; published ahead of print November 19, 2014, doi:10.1095/biolreprod.114.123679

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

**Summary:** Thiol oxidation during rat epididymal transit was shown to regulate protein solubility and activity.

- Robert Stickels, Kevin Clark, Thomas N. Heider, Deidre M. Mattiske, Marilyn B. Renfree, and Andrew J. Pask

**DAX1/NROB1 Was Expressed During Mammalian Gonadal Development and Gametogenesis Before It Was Recruited to the Eutherian X Chromosome**

Biol Reprod January 2015 92 (1) 22, 1-13; published ahead of print November 13, 2014, doi:10.1095/biolreprod.114.119362

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

**Summary:** Despite undergoing rapid evolution after moving to the X chromosome in eutherians, the *NROB1* gene maintains a conserved expression profile in gonadal development in all therian mammals.

- Jun-Hao Zhou, Qi-Zhao Zhou, Xiao-Ming Lyu, Ting Zhu, Zi-Jian Chen, Ming-Kun Chen, Hui Xia, Chun-Yan Wang, Tao Qi, Xin Li, and Cun-Dong Liu

**The Expression of Cysteine-Rich Secretory Protein 2 (CRISP2) and Its Specific Regulator miR-27b in the Spermatozoa of Patients with Asthenozoospermia**

Biol Reprod January 2015 92 (1) 28, 1-9; published ahead of print December 10, 2014, doi:10.1095/biolreprod.114.124487

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

**Summary:** miR-27b contributes to the reduction of CRISP2 protein in asthenozoospermia; both high miR-27b expression and low CRISP2 protein expression were significantly associated with low sperm progressive motility, abnormal morphology, and infertility.

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#### Ovary

- Katsueki Ogiwara, Akane Hagiwara, Sanath Rajapakse, and Takayuki Takahashi

**The Role of Urokinase Plasminogen Activator and Plasminogen Activator Inhibitor-1 in Follicle Rupture During Ovulation in the Teleost Medaka**

Biol Reprod January 2015 92 (1) 10, 1-17; published ahead of print November 19, 2014, doi:10.1095/biolreprod.114.121442

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

**Summary:** This study provides the first evidence for the involvement

of plasmin, uPA, and Pai1 in follicle rupture during ovulation in medaka.

- Valério M. Portela, Essa Dirandeh, Hilda M. Guerrero-Netro, Gustavo Zamberlam, Marcos H. Barreta, André F. Goetten, and Christopher A. Price

**The Role of Fibroblast Growth Factor-18 in Follicular Atresia in Cattle**

Biol Reprod January 2015 92 (1) 14, 1-8; published ahead of print November 19, 2014, doi:10.1095/biolreprod.114.121376

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

**Summary:** FGF18 causes follicle regression in part by increasing apoptosis in granulosa cells, and estradiol can overcome this effect.

- Heidi A. Trau, John S. Davis, and Diane M. Duffy

**Angiogenesis in the Primate Ovulatory Follicle Is Stimulated by Luteinizing Hormone via Prostaglandin E2**

Biol Reprod January 2015 92 (1) 15, 1-12; published ahead of print November 5, 2014, doi:10.1095/biolreprod.114.123711

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

**Summary:** Invasion of new blood vessels into the granulosa cell layer of the ovulatory follicle occurs before ovulation and is regulated by prostaglandin E2.

- Francesca Lolicato, Jos F. Brouwers, Chris H.A. van de Lest, Richard Wubbolts, Hilde Aardema, Paola Priore, Bernard A.J. Roelen, J. Bernd Helms, and Bart M. Gadella

**The Cumulus Cell Layer Protects the Bovine Maturing Oocyte Against Fatty Acid-Induced Lipotoxicity**

Biol Reprod January 2015 92 (1) 16, 1-16; published ahead of print October 8, 2014, doi:10.1095/biolreprod.114.120634

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

**Summary:** Cumulus cells modulate fatty acid supply to the oocyte during in vitro maturation by predominantly storing them into the lipid droplets and preventing a fatty acid overload of the oocyte.

- You-Jee Jang, Jae-Il Park, Won-Jin Moon, Phuong T.M. Dam, Moon-Kyoung Cho, and Sang-Young Chun

**Cumulus Cell-Expressed Type I Interferons Induce Cumulus Expansion in Mice**

Biol Reprod January 2015 92 (1) 20, 1-8; published ahead of print November 26, 2014, doi:10.1095/biolreprod.114.122770

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

**Summary:** The present study demonstrates the expression of the type I interferon system in mouse ovaries during ovulation and the role of interferon alpha/beta in promoting cumulus expansion.

- Karen Wigglesworth, Kyung-Bon Lee, Chihiro Emori, Koji Sugiura, and John J. Eppig

**Transcriptomic Diversification of Developing Cumulus and Mural Granulosa Cells in Mouse Ovarian Follicles**

Biol Reprod January 2015 92 (1) 23, 1-14; published ahead of print November 5, 2014, doi:10.1095/biolreprod.114.121756

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

**Summary:** Transcriptomic diversity of both cumulus and mural granulosa cells is dynamic during development of small to large antral ovarian follicles and reflects distinct functions and different control mechanisms.

- Hannah M. Brown, Marie R. Anastasi, Laura A. Frank, Karen L. Kind, Dulama Richani, Rebecca L. Robker, Darryl L. Russell, Robert B. Gilchrist, and Jeremy G. Thompson

**Hemoglobin: a Gas Transport Molecule That Is Hormonally Regulated in the Ovarian Follicle in Mice and Humans**

Biol Reprod January 2015 92 (1) 26, 1-10; published ahead of print November 13, 2014, doi:10.1095/biolreprod.114.124594

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

**Summary:** Hemoglobin products are hormonally regulated in the mural granulosa and cumulus cells and are present in human mural granulosa and cumulus cells, and the addition of hemoglobin to in vitro maturation improves blastocyst rates in mouse.

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**Pregnancy**

- You-Lin Tain, Li-Tung Huang, Chien-Te Lee, Julie Y.H. Chan, and Chien-Ning Hsu

**Maternal Citrulline Supplementation Prevents Prenatal N<sup>G</sup>-Nitro-L-Arginine-Methyl Ester (L-NAME)-Induced Programmed Hypertension in Rats**

Biol Reprod January 2015 92 (1) 7, 1-7; published ahead of print November 13, 2014, doi:10.1095/biolreprod.114.121384

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

**Summary:** Supplementing L-citrulline in pregnant rats with nitric oxide deficiency can improve fetal development and prevent programmed hypertension.

- Julie A. Potter, Manish Garg, Sylvie Girard, and Vikki M. Abrahams

**Viral Single Stranded RNA Induces a Trophoblast Pro-Inflammatory and Antiviral Response in a TLR8-Dependent and -Independent Manner**

Biol Reprod January 2015 92 (1) 17, 1-8; published ahead of print November 26, 2014, doi:10.1095/biolreprod.114.124032

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

**Summary:** In human trophoblast, viral ssRNA induces inflammation, an antiviral response, and apoptosis in a TLR8/MyD88-dependent and -independent manner, and in pregnant mice, viral ssRNA induces placental inflammation, an antiviral response, and apoptosis.

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**Special Papers**

J. Michael Bedford

**The Functions—or Not—of Seminal Plasma?**

Biol Reprod January 2015 92 (1) 18, 1-3; published ahead of print December 3, 2014, doi:10.1095/biolreprod.114.126045

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

**Summary:** The extreme discrepancy that exists between recent conclusions as to the functions of seminal plasma for fertilization and pregnancy, and the results of earlier studies based on functional endpoints are evaluated.

**Testis**

Jin Ding, Hui Wang, Zhen-Biao Wu, Jie Zhao, Shun Zhang, and Wei Li

**Protection of Murine Spermatogenesis Against Ionizing Radiation-Induced Testicular Injury by a Green Tea Polyphenol**

Biol Reprod January 2015 92 (1) 6, 1-13; published ahead of print November 13, 2014, doi:10.1095/biolreprod.114.122333

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

**Summary:** Intermittent treatment with EGCG, a green tea polyphenol, attenuates oxidative stress, reduces testicular steroidogenesis, and protects against ionizing radiation-induced testicular damage in mice.

Leitao Wu, Haijun Dong, Jiao Zhao, Yuzhen Wang, Qianqian Yang, Chengming Jia, and Jing Ma

**Diosgenin Stimulates Rat TM4 Cell Proliferation Through Activating Plasma Membrane Translocation and Transcriptional Activity of Estrogen Receptors**

Biol Reprod January 2015 92 (1) 24, 1-10; published ahead of print November 26, 2014, doi:10.1095/biolreprod.114.124206

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

**Summary:** Diosgenin, an aglycone of the steroidal saponin, stimulates Sertoli cell proliferation through estrogen receptor-mediated regulation of cell cycle and apoptosis.