

July 1, 2014; 91 (1)

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Charlotte Schubert

WORLD OF REPRODUCTIVE BIOLOGY

Biol Reprod July 2014 91 (1) 1, 1-3;doi:10.1095/biolreprod.114.121335

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

-
- Ana D. Martins, Raquel L. Bernardino, Aline Neuhaus-Oliveira, Mário Sousa, Rosália Sá, Marco G. Alves, and Pedro F. Oliveira

Physiology of Na⁺/H⁺ Exchangers in the Male Reproductive**Tract: Relevance for Male Fertility**

Biol Reprod July 2014 91 (1) 11, 1-6; published ahead of print May 29, 2014, doi:10.1095/biolreprod.114.118331

[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#) [Author Biosketches](#)**Summary:** The expression pattern and physiological function of Na⁺-H⁺ exchangers in cells of the male reproductive tract support a key role of H⁺ dynamics in male reproductive potential.

-
- Jeremy K. Larson, Michael J. Carvan III, and Reinhold J. Hutz

Engineered Nanomaterials: An Emerging Class of Novel Endocrine Disruptors

Biol Reprod July 2014 91 (1) 20, 1-8; published ahead of print June 4, 2014, doi:10.1095/biolreprod.113.116244

[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#) [Author Biosketches](#)**Summary:** Engineered nanomaterials have garnered great interest with regard to their innovative applications in medicine and industry; however, our understanding of the potential endocrine-disrupting effects of these unique molecules on reproduction and development is presently in its nascency.[Clear](#) [Get All Checked Abstracts](#)**Research Articles****Embryo**

-
- Yongjie Chen, Shuangbo Kong, Xiaofang Tang, Yayuan Fu, Bingyan Wang, Shuang Zhang, and Haibin Wang

Preimplantation Mouse Embryo Is a Target for Opioid Ligand-Receptor Signaling

Biol Reprod July 2014 91 (1) 4, 1-9; published ahead of print May 22, 2014, doi:10.1095/biolreprod.114.118083

[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#) [Supplemental Data](#)**Summary:** The preimplantation embryo is a target of endogenous opioid signaling in mice, and an aberrantly activated opioid signaling can derail normal preimplantation embryo development.

-
- Atsushi Yamamoto, Noboru Mizushima, and Satoshi Tsukamoto

Fertilization-Induced Autophagy in Mouse Embryos Is Independent of mTORC1

Biol Reprod July 2014 91 (1) 7, 1-7; published ahead of print May 22, 2014, doi:10.1095/biolreprod.113.115816

[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#)**Summary:** The suppression of mammalian target of rapamycin complex 1 (mTORC1) is neither essential nor sufficient for fertilization-induced autophagy, although mTORC1 activity was inversely correlated with fertilization-induced autophagy.[Clear](#) [Get All Checked Abstracts](#)**Female Reproductive Tract**

-
- Hyocheol Bae, Whasun Lim, Seung-Min Bae, Fuller W. Bazer, Youngsok Choi, and Gwonhwa Song

Avian Prostatic Acid Phosphatase: Estrogen Regulation in the Oviduct and Epithelial Cell-Derived Ovarian Carcinomas

Biol Reprod July 2014 91 (1) 3, 1-8; published ahead of print May 14, 2014, doi:10.1095/biolreprod.114.118893

[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#)**Summary:** *ACPP* is a novel estrogen-stimulated gene in the oviductal epithelial cells of the chicken, and its expression increases significantly in epithelial cells of ovarian carcinoma.[Clear](#) [Get All Checked Abstracts](#)**Gamete Biology**

- Frédéric Chalmel, Aurélie Lardenois, Bertrand Evrard, Antoine D. Rolland, Olivier Sallou, Marie-Charlotte Dumargne, Isabelle Coiffec, Olivier Collin, Michael P
High-Resolution Profiling of Novel Transcribed Regions During Rat Spermatogenesis
 Biol Reprod July 2014 91 (1) 5, 1-13; published ahead of print April 16, 2014, doi:10.1095/biolreprod.114.118166
[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#) [Supplemental Data](#)
OPEN ACCESS ARTICLE
- Summary:** Meiotic, long noncoding RNAs define a novel class of transcripts exhibiting a longer exon length in the rat male germ cells.
- Bart Leemans, Bart M. Gadella, Edita Sostaric, Hilde Nelis, Tom A.E. Stout, Maarten Hoogewijs, and Ann Van Soom
Oviduct Binding and Elevated Environmental pH Induce Protein Tyrosine Phosphorylation in Stallion Spermatozoa
 Biol Reprod July 2014 91 (1) 13, 1-12; published ahead of print May 14, 2014, doi:10.1095/biolreprod.113.116418
[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#) [Supplemental Video](#)
- Summary:** Binding of sperm to oviduct epithelium at the late pre-ovulatory stage induces protein tyrosine phosphorylation in stallion spermatozoa, a modification correlated primarily with high pH content of oviductal secretory cells.
- Meng-Wen Hu, Zhen-Bo Wang, Zong-Zhe Jiang, Shu-Tao Qi, Lin Huang, Qiu-Xia Liang, Heide Schatten, and Qing-Yuan Sun
Scaffold Subunit Aalpha of PP2A Is Essential for Female Meiosis and Fertility in Mice
 Biol Reprod July 2014 91 (1) 19, 1-10; published ahead of print June 4, 2014, doi:10.1095/biolreprod.114.120220
[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#)
- Summary:** Oocyte-specific deletion of *Ppp2r1a* causes female subfertility due to defective meiotic maturation and early embryonic development, without affecting folliculogenesis in the mouse ovary.

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Mechanisms of Hormone Action

- Ryosuke Murata, Yasuhisa Kobayashi, Hirofumi Karimata, Kazuo Kishimoto, Motofumi Kimura, and Masaru Nakamura
Transient Sex Change in the Immature Malabar Grouper, *Epinephelus malabaricus*, Androgen Treatment
 Biol Reprod July 2014 91 (1) 25, 1-7; published ahead of print May 14, 2014, doi:10.1095/biolreprod.113.115378
[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#)
- Summary:** Artificial androgen has little effect on the steroidogenic endocrine pathway but causes sex change recovery after treatment withdrawal in the immature Malabar grouper.

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Ovary

- Kazuhisa Hashiba, Masahiro Sano, Junko Nio-Kobayashi, Takuo Hojo, Dariusz J. Skarzynski, and Kiyoshi Okuda
Galectin-3 Contributes to Luteolysis by Binding to Beta 1 Integrin in the Bovine Corpus Luteum
 Biol Reprod July 2014 91 (1) 2, 1-10; published ahead of print May 22, 2014, doi:10.1095/biolreprod.114.119057
[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#)
- Summary:** Galectin-3, increased by prostaglandin F₂α, induces apoptosis in bovine luteal steroidogenic cells via beta 1 integrin, which contributes to structural luteolysis.
- Xueqing Liu, Fang Xie, Alberuni Musa Zamah, Binyun Cao, and Marco Conti
Multiple Pathways Mediate Luteinizing Hormone Regulation of cGMP Signaling in the Mouse Ovarian Follicle
 Biol Reprod July 2014 91 (1) 9, 1-11; published ahead of print April 16, 2014, doi:10.1095/biolreprod.113.116814
[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#)
OPEN ACCESS ARTICLE
- Summary:** Multiple signaling pathways mediate the LH-dependent decrease in cGMP in the ovarian follicle, including regulation of EGF-like growth factors and the CNP/NPR2 paracrine axis.
- Siuming Francis Chan, Jian-Guo He, Ka Hou Chu, and Cheng Bo Sun
The Shrimp Heat Shock Cognate 70 Functions as a Negative Regulator in Vitellogenin Gene Expression
 Biol Reprod July 2014 91 (1) 14, 1-11; published ahead of print April 30, 2014, doi:10.1095/biolreprod.113.117200
[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#) [Supplemental Data](#)
- Summary:** Heat shock cognate 70 and heat shock factor have a role in the negative regulation of shrimp vitellogenesis.
- Nicolas Santiquet, Émilie Papillon-Dion, Nadjib Djender, Christine Guillemette, and François J. Richard
New Elements in the C-Type Natriuretic Peptide Signaling

Pathway Inhibiting Swine In Vitro Oocyte Meiotic Resumption

Biol Reprod July 2014 91 (1) 16, 1-8; published ahead of print June 4, 2014, doi:10.1095/biolreprod.113.114132

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

Summary: C-type natriuretic peptide through natriuretic peptide receptor (NPR) B/cGMP may not be the only signaling pathway inhibiting oocyte meiotic resumption in FSH-stimulated swine in vitro maturation.

- Maria B. Padua, Shawna C. Fox, Tianyu Jiang, Deborah A. Morse, and Sergei G. Tevosian

Simultaneous Gene Deletion of *Gata4* and *Gata6* Leads to Early Disruption of Follicular Development and Germ Cell Loss in the Murine Ovary

Biol Reprod July 2014 91 (1) 24, 1-10; published ahead of print June 4, 2014, doi:10.1095/biolreprod.113.117002

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

Summary: GATA4 and GATA6 proteins are key regulators of granulosa cell differentiation and proliferation and, consequently, of proper follicular assembly during normal ovarian development and function.

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Pregnancy

- Vijayakumar Chinnathambi, Amar S. More, Gary D. Hankins, Chandra Yallampalli, and Kunju Sathishkumar

Gestational Exposure to Elevated Testosterone Levels Induces Hypertension via Heightened Vascular Angiotensin II Type 1 Receptor Signaling in Rats

Biol Reprod July 2014 91 (1) 6, 1-7; published ahead of print May 22, 2014, doi:10.1095/biolreprod.114.118968

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

Summary: Elevated testosterone levels at concentrations similar to that observed during pre-eclampsia induces hypertension in pregnant rats via heightened angiotensin II type 1 receptor-mediated signaling, providing a molecular mechanism linking elevated maternal testosterone levels and gestational hypertension.

- Khetsopon Srikhajon, Oksana Shynlova, Anyarin Preechapomprasert, Boonsri Chanrachakul, and Stephen Lye

A New Role for Monocytes in Modulating Myometrial Inflammation During Human Labor

Biol Reprod July 2014 91 (1) 10, 1-12; published ahead of print May 14, 2014, doi:10.1095/biolreprod.113.114975

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

Summary: A novel feedback mechanism, in which monocytes are first recruited to the myometrium by multiple cytokines, contributes to the physiologic inflammation of labor and later constrain and control the extent of this local inflammation.

- Jessica D.K. Kresowik, Eric J. Devor, Bradley J. Van Voorhis, and Kimberly K. Leslie

MicroRNA-31 Is Significantly Elevated in Both Human Endometrium and Serum During the Window of Implantation: A Potential Biomarker for Optimum Receptivity

Biol Reprod July 2014 91 (1) 17, 1-6; published ahead of print May 22, 2014, doi:10.1095/biolreprod.113.116590

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

Summary: MicroRNAs were differentially regulated in the endometrium in the proliferative and secretory phases, and expression of miR-31 was upregulated in secretory-phase serum, identifying it as a potential biomarker for endometrial receptivity.

- Lin Zhang, Weiping Ye, Wen Yu, Linan Cheng, Lixiao Shen, and Zujing Yang

Physical and Mental Development of Children after Levonorgestrel Emergency Contraception Exposure: A Follow-Up Prospective Cohort Study

Biol Reprod July 2014 91 (1) 27, 1-7; published ahead of print June 4, 2014, doi:10.1095/biolreprod.113.117226

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

Summary: Levonorgestrel emergency contraception has no effect on the physical growth, mental development, or the occurrence of birth defects in infants that are born from pregnancies in which emergency contraception failed.

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Reproductive Technology

- Priscila Ramos-Ibeas, Alexandra Calle, Eva Pericuesta, Ricardo Laguna-Barraza, Rommel Moros-Mora, Ricaurte Lopera-Vásquez, Verónica Maillo, María Yáñez

An Efficient System to Establish Bopsy-Derived Trophoblastic Cell Lines from Bovine Embryos

Biol Reprod July 2014 91 (1) 15, 1-10; published ahead of print May 22, 2014, doi:10.1095/biolreprod.114.118430

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

Summary: An efficient method was devised to obtain trophoblastic cell lines from a single embryo biopsy, allowing epigenetic and genomic DNA analysis of multiple production traits and providing valuable tools to explore the placentation process in ruminants.

- Antonella Fidanza, Paola Toschi, Federica Zacchini, Marta Czernik, Chiara Palmieri, PierAugusto Scapolo, Jacek A. Modlinski, Pasqualino Loi, and Grazyna E.

Impaired Placental Vasculogenesis Compromises the Growth of Sheep Embryos Developed In Vitro

Biol Reprod July 2014 91 (1) 21, 1-7; published ahead of print May 22, 2014, doi:10.1095/biolreprod.113.113902

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

Summary: In vitro production of sheep embryos induces impaired placental vasculogenesis, which leads to fetal intrauterine growth restriction.

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Testis

- Weiwei Zhu, Peng Liu, Lili Yu, Qiaoyuan Chen, Zhenghui Liu, Keqin Yan, Will M. Lee, C. Yan Cheng, and Daishu Han

p204-Initiated Innate Antiviral Response in Mouse Leydig Cells

Biol Reprod July 2014 91 (1) 8, 1-9; published ahead of print May 29, 2014, doi:10.1095/biolreprod.114.119396

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

Summary: p204 is constitutively expressed in mouse Leydig cells and initiates innate antiviral response to HSV60 stimulation.

- Caitlin J. Murphy, Angela R. Stermer, and John H. Richburg

Age- and Species-Dependent Infiltration of Macrophages into the Testis of Rats and Mice Exposed to Mono-(2-Ethylhexyl) Phthalate (MEHP)

Biol Reprod July 2014 91 (1) 18, 1-11; published ahead of print May 29, 2014, doi:10.1095/biolreprod.113.115527

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

Summary: MEHP exposure induces an increase in monocyte chemoattractant protein-1 expression by peritubular myoid cells and instigates the migration of macrophages into the immature rat testis.

- Dideke E. Verver, Nathalia S.M. Langedijk, Philip W. Jordan, Sjoerd Repping, and Geert Hamer

The SMC5/6 Complex Is Involved in Crucial Processes During Human Spermatogenesis

Biol Reprod July 2014 91 (1) 22, 1-10; published ahead of print May 22, 2014, doi:10.1095/biolreprod.114.118596

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

Summary: In humans, the SMC5/6 complex marks a previously undescribed spermatogonial subpopulation and, during meiosis, is present on the synaptonemal complex as well as the sex chromosomes during prophase and the centromeres during the subsequent divisions.

- Makoto Hayashi, Masanao Sato, Yasuhiko Nagasaka, Sakiko Sadaie, Satoru Kobayashi, and Goro Yoshizaki

Enrichment of Spermatogonial Stem Cells Using Side Population in Teleost

Biol Reprod July 2014 91 (1) 23, 1-8; published ahead of print May 29, 2014, doi:10.1095/biolreprod.113.114140

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

Summary: The method for spermatogonial stem cell enrichment from type A spermatogonia using fluorescent intensity after Hoechst 33342 staining is established in rainbow trout.

- Raifish E. Mendoza-Villarreal, Nicholas M. Robert, Luc J. Martin, Catherine Brousseau, and Jacques J. Tremblay

The Nuclear Receptor NR2F2 Activates Star Expression and Steroidogenesis in Mouse MA-10 and MLTC-1 Leydig Cells

Biol Reprod July 2014 91 (1) 26, 1-12; published ahead of print June 4, 2014, doi:10.1095/biolreprod.113.115790

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

Summary: The nuclear receptor NR2F2, which is expressed in Leydig cells, positively regulates steroidogenesis by binding and stimulating *Star* promoter activity.

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Toxicology

- Jone A. Stanley, Kirthiram K. Sivakumar, Joe A. Arosh, Robert C. Burghardt, and Sakhila K. Banu

Edaravone Mitigates Hexavalent Chromium-Induced Oxidative Stress and Depletion of Antioxidant Enzymes while Estrogen Restores Antioxidant Enzymes in the Rat Ovary in F1 Offspring

Biol Reprod July 2014 91 (1) 12, 1-12; published ahead of print May 7, 2014, doi:10.1095/biolreprod.113.113332

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

Summary: Edaravone mitigates chromium-induced follicular atresia of the ovary by quenching free radicals, increasing antioxidant (AOX) enzymes, decreasing cleavage of caspase 3, and attenuating the chromium-induced decrease in Bcl2 and Bcl2l1, whereas estradiol restores chromium-induced depletion of AOX enzymes.