

August 1, 2014; 91 (2)

Charlotte Schubert

WORLD OF REPRODUCTIVE BIOLOGY

Biol Reprod August 2014 91 (2) 28, 1-2; doi:10.1095/biolreprod.114.121657

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Commentary

Holly A. LaVoie

The GATA-Keepers of Ovarian Development and Folliculogenesis

Biol Reprod August 2014 91 (2) 38, 1-2; published ahead of print July 2, 2014, doi:10.1095/biolreprod.114.122499

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Summary: This is a commentary on the findings of Padua et al. 2014 who examined the combined roles of GATA4 and GATA6 in early ovarian development.

Andrea S. Cupp

Sertoli Cell-Based Gene Therapy?

Biol Reprod August 2014 91 (2) 40, 1-3; published ahead of print June 18, 2014, doi:10.1095/biolreprod.114.121996

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

Summary: Sertoli cells may be used for cell-mediated gene therapy.

Research Articles**Embryo**

-
- Aurélien Bouleau, Thomas Desvignes, Juan Martin Traverso, Thaovi Nguyen, Franck Chesnel, Christian Fauvel, and Julien Bobe

Maternally Inherited *npm2* mRNA Is Crucial for Egg Developmental Competence in Zebrafish

Biol Reprod August 2014 91 (2) 43, 1-9; published ahead of print July 9, 2014, doi:10.1095/biolreprod.114.119925

[Abstract](#)
[Full Text](#)
[Full Text \(PDF\)](#)
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Summary: Maternally inherited nucleoplasmin (*npm2*) mRNA is crucial for early embryo developmental success in zebrafish and, therefore, contributes to egg developmental competence.

-
- Zachariah McLean, Fanli Meng, Harold Henderson, Pavla Turner, and Björn Oback

Increased MAP Kinase Inhibition Enhances Epiblast-Specific Gene Expression in Bovine Blastocysts

Biol Reprod August 2014 91 (2) 49, 1-10; published ahead of print July 9, 2014, doi:10.1095/biolreprod.114.120832

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

Summary: Culturing bovine embryos in 2i+ medium shifts hypoblast to epiblast gene expression signature.

Female Reproductive Tract

-
- Asuka Yoshii, Shuji Kitahara, Hisashi Ueta, Kenjiro Matsuno, and Taichi Ezaki

Role of Uterine Contraction in Regeneration of the Murine Postpartum Endometrium

Biol Reprod August 2014 91 (2) 32, 1-10; published ahead of print June 25, 2014, doi:10.1095/biolreprod.114.117929

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

Summary: Uterine contraction induces transient hypoxia leading to endometrial healing while minimizing scarring.

-
- JeHoon Lee, Jone A. Stanley, John A. McCracken, Sakhila K. Banu, and Joe A. Arosh

Intrauterine Coadministration of ERK1/2 Inhibitor U0126 Inhibits Interferon TAU Action in the Endometrium and Restores Luteolytic PGF_{2α} Pulses in Sheep

Biol Reprod August 2014 91 (2) 46, 1-9; published ahead of print May 29, 2014, doi:10.1095/biolreprod.113.111872

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

Summary: Blockade of ERK1/2 pathways inhibits interferon tau actions in the endometrium, inhibits ERK1/2 and PGT protein interactions, and re-establishes spatial expression of oxytocin and estrogen receptor proteins in endometrial luminal epithelium restoring luteolytic PGF_{2α} pulses in sheep.

Gamete Biology

- Yu Miyagaki, Yoshinori Kanemori, Fumi Tanaka, and Tadashi Baba
Possible Role of p38 MAPK-MNK1-EMI2 Cascade in Metaphase-II Arrest of Mouse Oocytes
 Biol Reprod August 2014 91 (2) 45, 1-8; published ahead of print June 11, 2014, doi:10.1095/biolreprod.113.116962
[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#) [Supplemental Data](#)
Summary: p38 may contribute to metaphase-II arrest through EMI2 phosphorylation.
- Hai-Tao Zeng, Dulama Richani, Melanie L. Sutton-McDowall, Zi Ren, Johan E.J. Smitz, Yvonne Stokes, Robert B. Gilchrist, and Jeremy G. Thompson
Prematuration with Cyclic Adenosine Monophosphate Modulators Alters Cumulus Cell and Oocyte Metabolism and Enhances Developmental Competence of In Vitro-Matured Mouse Oocytes
 Biol Reprod August 2014 91 (2) 47, 1-11; published ahead of print June 25, 2014, doi:10.1095/biolreprod.114.118471
[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#)
Summary: Prematuration with cAMP and maturation with FSH increased oxidative metabolism within oocytes of COCs matured in vitro and improved oocyte developmental competence, but caused increased ROS production relative to in vivo-matured oocytes.
- Nicolas Santiquet, Maxime Sasseville, Martin Laforest, Christine Guillemette, Robert B. Gilchrist, and François J. Richard
Activation of 5' Adenosine Monophosphate-Activated Protein Kinase Blocks Cumulus Cell Expansion Through Inhibition of Protein Synthesis During In Vitro Maturation in Swine
 Biol Reprod August 2014 91 (2) 51, 1-12; published ahead of print July 16, 2014, doi:10.1095/biolreprod.113.116764
[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#)
Summary: AMPK activation by AICAR inhibits cumulus cell expansion through inhibition of protein synthesis during in vitro maturation in swine.
- Yuuki Hiradate, Hiroki Inoue, Norio Kobayashi, Yoshiki Shirakata, Yutaka Suzuki, Aina Gotoh, Sang-gun Roh, Takafumi Uchida, Kazuo Katoh, Manabu Yoshida
Neurotensin Enhances Sperm Capacitation and Acrosome Reaction in Mice
 Biol Reprod August 2014 91 (2) 53, 1-9; published ahead of print July 16, 2014, doi:10.1095/biolreprod.113.112789
[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#) [Supplemental Data](#)
Summary: Neurotensin can act as a promoter of sperm capacitation and the acrosome reaction in the female reproductive tract.

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Male Reproductive Tract

- S.B. Liao, K.H. Cheung, W.S. O, and Fai Tang
Adrenomedullin Increases the Short-Circuit Current in the Mouse Seminal Vesicle: Actions on Chloride Secretion
 Biol Reprod August 2014 91 (2) 31, 1-6; published ahead of print June 4, 2014, doi:10.1095/biolreprod.113.116848
[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#)
Summary: ADM increased short circuit current through the calcium-activated chloride channel in mouse seminal vesicle with CGRP receptor involvement.
- Julia S. Barthold, Alan Robbins, Yanping Wang, Joan Pugarelli, Abigail Mateson, Ravinder Anand-Ivell, Richard Ivell, Suzanne M. McCahan, and Robert E. Aki
Cryptorchidism in the Orl Rat Is Associated with Muscle Patterning Defects in the Fetal Gubernaculum and Altered Hormonal Signaling
 Biol Reprod August 2014 91 (2) 41, 1-14; published ahead of print June 25, 2014, doi:10.1095/biolreprod.114.119560
[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#) [Supplemental Data](#)
Summary: Inherited cryptorchidism in the orl rat is associated with reduced testicular testosterone and expression of androgen-responsive transcripts, upregulation of INSL3/RXFP2 signaling, and patterning defects of the fetal gubernaculum.

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Mechanisms of Hormone Action

- Ajay Pradhan and Per-Erik Olsson
Juvenile Ovary to Testis Transition in Zebrafish Involves Inhibition of Ptges
 Biol Reprod August 2014 91 (2) 33, 1-15; published ahead of print June 11, 2014, doi:10.1095/biolreprod.114.119016
[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#) [Supplemental Data](#)
Summary: Prostaglandins, PGD₂ and PGE₂, can program the sex differentiation of the zebrafish gonads.

[Clear](#) [Get All Checked Abstracts](#)**Ovary**

- Huijie Lu, Shen Zhang, Qiongyou Liu, Lihong Zhang, and Weimin Zhang
Cytoplasmic Localization of Lrh-1 Down-Regulates Ovarian Follicular *cyp19a1a* Expression in a Teleost, the Orange-Spotted Grouper *Epinephelus coioides*
 Biol Reprod August 2014 91 (2) 29, 1-9; published ahead of print June 18, 2014, doi:10.1095/biolreprod.114.117952
[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#) [Supplemental Data](#)
Summary: Lrh-1 up-regulates ovarian *cyp19a1a* transcription during vitellogenesis, and translocation of Lrh-1 from the nucleus to cytoplasm in the ovarian follicular cells surrounding the mature oocytes down-regulates *cyp19a1a* expression.
- Muraly Puttabyatappa, Terry A. Jacot, Linah F. Al-Alem, Katherine L. Rosewell, Diane M. Duffy, Mats Brännström, and Thomas E. Curry, Jr.
Ovarian Membrane-Type Matrix Metalloproteinases: Induction of MMP14 and MMP16 During the Perioovulatory Period in the Rat, Macaque, and Human
 Biol Reprod August 2014 91 (2) 34, 1-12; published ahead of print June 11, 2014, doi:10.1095/biolreprod.113.115717
[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#) [Supplemental Data](#)
Summary: Expression of key members of the MT-MMP subfamily, MMP14 and MMP16, are induced during the perioovulatory period of rats, macaques, and humans.
- Peter Marsters, Rana Alhamdan, and Bruce K. Campbell
Cell Density-Mediated Pericellular Hypoxia and the Local Dynamic Regulation of VEGF-A Splice Variants in Ovine Ovarian Granulosa Cells
 Biol Reprod August 2014 91 (2) 35, 1-12; published ahead of print June 25, 2014, doi:10.1095/biolreprod.113.113068
[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#)
Summary: Cell density-related pericellular hypoxia may be an important mediator of VEGF production in the GC of growing follicles causing a local dynamic regulation that may involve differential VEGF-A mRNA variant production, steroid hormones, and an inhibitory feedback mechanism linked to extracellular storage.
- Daniel Griffin, Xiufang Liu, Cindy Pru, James K. Pru, and John J. Peluso
Expression of Progesterone Receptor Membrane Component-2 Within the Immature Rat Ovary and Its Role in Regulating Mitosis and Apoptosis of Spontaneously Immortalized Granulosa Cells
 Biol Reprod August 2014 91 (2) 36, 1-11; published ahead of print July 2, 2014, doi:10.1095/biolreprod.114.117481
[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#) [Supplemental Data](#)
Summary: Progesterone receptor membrane component 2 (PGRMC2) is expressed by ovarian cells and spontaneously immortalized granulosa cells and suppresses the rate of mitosis and apoptosis.
- Shuiqiao Yuan, Nicole Ortogero, Qiuxia Wu, Huili Zheng, and Wei Yan
Murine Follicular Development Requires Oocyte DICER, but Not DROSHA
 Biol Reprod August 2014 91 (2) 39, 1-8; published ahead of print July 2, 2014, doi:10.1095/biolreprod.114.119370
[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#)
Summary: Our conditional knockout study demonstrates that oocyte DICER is required for all stages of follicular development, whereas oocyte DROSHA is dispensable.
- Lucie Cloix, Maxime Reverchon, Marion Cornuau, Pascal Froment, Christelle Ramé, Caroline Costa, Gisèle Froment, Pierre Lecomte, Wenyong Chen, Dominiq
Expression and Regulation of INTELECTIN1 in Human Granulosa-Lutein Cells: Role in IGF-1-Induced Steroidogenesis Through NAMPT
 Biol Reprod August 2014 91 (2) 50, 1-13; published ahead of print June 18, 2014, doi:10.1095/biolreprod.114.120410
[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#)
Summary: The INTELECTIN1 adipokine is produced by human ovarian follicular cells, and it improves IGF-1-induced steroidogenesis through induction of NAMPT in human granulosa-lutein cells.

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- Marina Polei, Torsten Viergutz, Wolfgang Tomek, Gerhard Schuler, and Rainer Fürbass
Estrogen-Specific Sulfotransferase (SULT1E1) in Bovine Placentomes: Inverse Levels of mRNA and Protein in Uninucleated Trophoblast Cells and Trophoblast Giant Cells
 Biol Reprod August 2014 91 (2) 48, 1-8; published ahead of print July 9, 2014, doi:10.1095/biolreprod.114.118760
[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#)

Summary: Although uninucleated trophoblast cells express low levels of *SULT1E1* mRNA, these cells are the predominant sites of SULT1E1 protein expression and the main source of sulfonated estrogens in bovine placentomes.

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Reproductive Technology

- Antonia Serrano, Juan M. Decara, Raúl Fernández-González, Angela P. López-Cardona, Francisco J. Pavón, Laura Orio, Francisco Alen, Alfonso Gutiérrez-Adár
Hyperplastic Obesity and Liver Steatosis as Long-Term Consequences of Suboptimal In Vitro Culture of Mouse Embryos
 Biol Reprod August 2014 91 (2) 30, 1-14; published ahead of print June 11, 2014, doi:10.1095/biolreprod.114.117879
[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#) [Supplemental Data](#)
- Summary:** Suboptimal in vitro culture induces obesity in the offspring, and it is more severe in female than male mice; this obesity has landmarks of metabolic syndrome and is associated with the development of liver steatosis.
- Li Wang, David S. Cram, Jiandong Shen, Xiaohong Wang, Jianguang Zhang, Zhuo Song, Genming Xu, Na Li, Junmei Fan, Shufang Wang, Yanning Luo, Jun Wa
Validation of Copy Number Variation Sequencing for Detecting Chromosome Imbalances in Human Preimplantation Embryos
 Biol Reprod August 2014 91 (2) 37, 1-8; published ahead of print June 25, 2014, doi:10.1095/biolreprod.114.120576
[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#) [Supplemental Data](#)
- Summary:** Copy number variation sequencing provides a novel and comprehensive approach toward improving the practice of preimplantation genetic diagnosis.
- Cui-Ling Lu, Tian-Ren Wang, Li-Ying Yan, Xi Xia, Xiao-Hui Zhu, Rong Li, Hong-Cui Zhao, Jie Yan, Tai-Lang Yin, Hong-Yan Jin, Yan Zhang, Wen-Xin Zhang, Hu
Gonadotropin-Mediated Dynamic Alterations During Bovine Oocyte Maturation In Vitro
 Biol Reprod August 2014 91 (2) 44, 1-9; published ahead of print June 18, 2014, doi:10.1095/biolreprod.114.117945
[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#)
- Summary:** Using an in vitro model, the most optimal and safe dose of gonadotropins used for bovine oocyte IVM is 0.075 IU/ml; these results provide a reference for clinical stimulation protocols, helping to reduce the risks associated with gonadotropin usage in in vitro fertilization treatment.

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Testis

- Casimir D. Akpovi, Bruce D. Murphy, Robert P. Erickson, and R.-Marc Pelletier
Dysregulation of Testicular Cholesterol Metabolism Following Spontaneous Mutation of the Niemann-Pick C1 Gene in Mice
 Biol Reprod August 2014 91 (2) 42, 1-8; published ahead of print July 9, 2014, doi:10.1095/biolreprod.114.119412
[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#)
- Summary:** Inactivation of the *Npc1* gene causes disorganization of spermatogenesis and increased apoptosis levels with imbalances in expression of proteins involved in cholesterol metabolism, accompanied by esterified cholesterol accumulation in seminiferous tubules.
- Xiao-Jin He, Bing Song, Wei-Dong Du, Yun-Xia Cao, Yan Zhang, Jian Ruan, Hui Tian, Fu-Sheng Zhou, Xian-Bo Zuo, Huan Wu, Xing Zha, Xu-Shi Xie, Zhao-Li
CREM Variants rs4934540 and rs2295415 Conferred Susceptibility to Nonobstructive Azoospermia Risk in the Chinese Population
 Biol Reprod August 2014 91 (2) 52, 1-6; published ahead of print June 18, 2014, doi:10.1095/biolreprod.114.120527
[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#) [Supplemental Data](#)
- Summary:** This study indicates that rs4934540 and rs2295415 of *CREM* gene variants might be involved in attenuating the *CREM* mRNA expression, which would be associated with NOA in the Chinese population.