

April 1, 2014; 90 (4)

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Charlotte Schubert

WORLD OF REPRODUCTIVE BIOLOGY

Biol Reprod April 2014 90 (4) 70, 1-3;doi:10.1095/biolreprod.114.118216

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

-
- Danielle Monniaux, Frédérique Clément, Rozenn Dalbiès-Tran, Anthony Estienne, Stéphane Fabre, Camille Mansanet, and Philippe Monget

The Ovarian Reserve of Primordial Follicles and the Dynamic Reserve of Antral Growing Follicles: What Is the Link?

Biol Reprod April 2014 90 (4) 85, 1-11; published ahead of print March 5, 2014, doi:10.1095/biolreprod.113.117077

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

Summary: The pre-established reserve of primordial follicles and the dynamic reserve of small antral follicles are functionally related, and recent advances in our knowledge of the signaling pathways that control the transition between reserves opens new perspectives to improve their management.

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-
- Annemarie Donjacour, Xiaowei Liu, Wingka Lin, Rhodel Simbulan, and Paolo F. Rinaudo

In Vitro Fertilization Affects Growth and Glucose Metabolism in a Sex-Specific Manner in an Outbred Mouse Model

Biol Reprod April 2014 90 (4) 80, 1-10; published ahead of print March 12, 2014, doi:10.1095/biolreprod.113.113134

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

Summary: Increased disturbance during the preimplantation period alters adult phenotype.

-
- Xi Tian, Kate Anthony, Thomas Neuberger, and Francisco J. Diaz

Preconception Zinc Deficiency Disrupts Postimplantation Fetal and Placental Development in Mice

Biol Reprod April 2014 90 (4) 83, 1-12; published ahead of print March 5, 2014, doi:10.1095/biolreprod.113.113910

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

Summary: Preconception zinc deficiency causes significant defects in fetal and placental development.

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-
- Javier Arturo Sanchez-Lopez, Ignacio Caballero, Mehraz Montazeri, Nasim Maslehat, Sarah Elliott, Raul Fernandez-Gonzalez, Alexandra Calle, Alfonso Gutierrez

Local Activation of Uterine Toll-Like Receptor 2 and 2/6 Decreases Embryo Implantation and Affects Uterine Receptivity in Mice

Biol Reprod April 2014 90 (4) 87, 1-13; published ahead of print March 12, 2014, doi:10.1095/biolreprod.113.115253

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

Summary: Activation of the uterine innate immune system through TLR 2 and 2/6 affects endometrial receptivity and embryo implantation in vivo in mice and in vitro in a human trophoblast-epithelial cells adhesion model.

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-
- Xiaoli Yu, Ning Wang, Rong Qiang, Qianhui Wan, Mingming Qin, Shuai Chen, and Huayan Wang

Human Amniotic Fluid Stem Cells Possess the Potential to Differentiate into Primordial Follicle Oocytes In Vitro

Biol Reprod April 2014 90 (4) 73, 1-11; published ahead of print February 26, 2014, doi:10.1095/biolreprod.113.112920

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

Summary: CD117⁺/CD44⁺ stem cells, derived from human amniotic fluid, retain self-renewal capability and can differentiate into oocyte-like cells in vitro.

-
- Muhammad Aamir Aslam, Ton G.G. Groothuis, Mari A. Smits, and Henri Woelders

Effect of Corticosterone and Hen Body Mass on Primary Sex Ratio

in Laying Hen (*Gallus gallus*), Using Unincubated Eggs

Biol Reprod April 2014 90 (4) 76, 1-9; published ahead of print February 19, 2014, doi:10.1095/biolreprod.113.115352

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

Summary: Corticosterone feeding acts together with a factor related to hen body mass in affecting sex ratio as well as laying and fertility rate, supporting the idea that the mechanism involves interference with meiosis.

- Hannah E. Corbett, Chantal D. Dubé, Sandy Slow, Michael Lever, Jacquetta M. Trasler, and Jay M. Baltz

Uptake of Betaine into Mouse Cumulus-Oocyte Complexes via the SLC7A6 Isoform of y+L Transporter

Biol Reprod April 2014 90 (4) 81, 1-9; published ahead of print March 5, 2014, doi:10.1095/biolreprod.113.116939

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

Summary: The SLC7A6 transporter is expressed in cumulus-oocyte complexes and appears to be the transport system that transfers betaine from the external environment to the enclosed oocyte.

- Mayako Fujihara, Pierre Comizzoli, Carol L. Keefer, David E. Wildt, and Nucharin Songsasen

Epidermal Growth Factor (EGF) Sustains In Vitro Primordial Follicle Viability by Enhancing Stromal Cell Proliferation via MAPK and PI3K Pathways in the Prepubertal, but Not Adult, Cat Ovary

Biol Reprod April 2014 90 (4) 86, 1-10; published ahead of print February 19, 2014, doi:10.1095/biolreprod.113.115089

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

Summary: EGF plays a role in maintaining viability of primordial follicles by stimulating the MAPK and PI3K signaling pathways that, in turn, enhance proliferation of stromal cells in ovarian tissue from prepubertal, but not adult, cats.

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Immunology

- Dongxin Zhang, Yongsheng Li, Huizhen Peng, Haojing Liu, Qiong Cheng, Xue Cheng, Pan Zeng, Ping Wu, Hongxiang Chen, Yiping Huang, and Duyun Ye

Glucocorticoids Sensitize Rat Placental Inflammatory Responses via Inhibiting Lipoxin A₄ Biosynthesis

Biol Reprod April 2014 90 (4) 74, 1-13; published ahead of print February 26, 2014, doi:10.1095/biolreprod.113.116384

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

Summary: Prior exposure to glucocorticoids potentiates rat placental proinflammatory responses with the mechanisms involving dysregulation of dual anti-inflammatory and proresolving lipid mediator lipoxin A₄ biosynthesis as well as eicosanoid metabolism.

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Mechanisms of Hormone Action

- Huayang Wang, Huanhuan Cheng, Qianqian Shao, Zhaogang Dong, Qi Xie, Lei Zhao, Qingjie Wang, Beihua Kong, and Xun Qu

Leptin-Promoted Human Extravillous Trophoblast Invasion Is MMP14 Dependent and Requires the Cross Talk Between Notch1 and PI3K/Akt Signaling

Biol Reprod April 2014 90 (4) 78, 1-10; published ahead of print February 26, 2014, doi:10.1095/biolreprod.113.114876

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

Summary: MMP14 is involved in leptin-promoted extravillous trophoblast cell invasion, and MMP14 up-regulation requires cross talk between Notch1 and PI3K/Akt pathways.

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Ovary

- Seng H. Liew, Kavitha Vaithyanathan, Michele Cook, Philippe Bouillet, Clare L. Scott, J.B. Kerr, Andreas Strasser, Jock K. Findlay, and Karla J. Hutt

Loss of the Proapoptotic BH3-Only Protein BCL-2 Modifying Factor Prolongs the Fertile Life Span in Female Mice

Biol Reprod April 2014 90 (4) 77, 1-9; published ahead of print February 26, 2014, doi:10.1095/biolreprod.113.116947

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

Summary: A critical role is established for BCL-2 modifying factor in determining the number of primordial follicles maintained in the ovary of adult mice and the length of the reproductive life span.

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Pregnancy

- Ramakrishna Kommagani, Maria M. Szwarc, Ertug Kovanci, Chad J. Creighton, Bert W. O'Malley, Francesco J. DeMayo, and John P. Lydon

A Murine Uterine Transcriptome, Responsive to Steroid Receptor Coactivator-2, Reveals Transcription Factor 23 as Essential for Decidualization of Human Endometrial Stromal Cells

Biol Reprod April 2014 90 (4) 75, 1-11; published ahead of print February 26, 2014, doi:10.1095/biolreprod.114.117531

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

Summary: Induction of transcription factor 23 by progesterone requires steroid receptor coactivator-2 and is essential for endometrial decidualization.

- Sishi Liu, Hong Cui, Qiuling Li, Lijuan Zhang, Quan Na, and Caixia Liu
RhoGDI2 Is Expressed in Human Trophoblasts and Involved in Their Migration by Inhibiting the Activation of RAC1

Biol Reprod April 2014 90 (4) 88, 1-7; published ahead of print February 19, 2014, doi:10.1095/biolreprod.113.111153

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

Summary: RhoGDI2 stimulates migration of human trophoblasts by inhibiting the activation of RAC1.

- Xiaoqiu Wang, Wei Ying, Kathrin A. Dunlap, Gang Lin, M. Carey Satterfield, Robert C. Burghardt, Guoyao Wu, and Fuller W. Bazer
Arginine Decarboxylase and Agmatinase: An Alternative Pathway for De Novo Biosynthesis of Polyamines for Development of Mammalian Conceptuses

Biol Reprod April 2014 90 (4) 84, 1-15; published ahead of print March 19, 2014, doi:10.1095/biolreprod.113.114637

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

Summary: Polyamines are essential for embryonic survival and development, and the arginine decarboxylase and agmatinase provide an alternative functional pathway for de novo biosynthesis of polyamines in mammalian reproductive tissue.

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Testis

- Min Chen, Xiaona Wang, Yanbo Wang, Lianjun Zhang, Binyang Xu, Limin Lv, Xiuhong Cui, Wei Li, and Fei Gao
Wt1 Is Involved in Leydig Cell Steroid Hormone Biosynthesis by Regulating Paracrine Factor Expression in Mice

Biol Reprod April 2014 90 (4) 71, 1-9; published ahead of print February 26, 2014, doi:10.1095/biolreprod.113.114702

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

Summary: Loss of *Wt1* in Sertoli cells leads to downregulation of paracrine factors, which in turn decreases steroidogenic enzyme expression and reduces testosterone production.

- Johanna Bellaiche, Jean-Jacques Lareyre, Chantal Cauty, Ayaka Yano, Isabelle Allemand, and Florence Le Gac
Spermatogonial Stem Cell Quest: *nanos2*, Marker of a Subpopulation of Undifferentiated A Spermatogonia in Trout Testis

Biol Reprod April 2014 90 (4) 79, 1-14; published ahead of print February 19, 2014, doi:10.1095/biolreprod.113.116392

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

Summary: The *nanos2* transcript is expressed by a subset of undifferentiated A spermatogonia in rainbow trout testis, which are proposed as the putative spermatogonial stem cell population.

- Kazue Kakiuchi, Ayaka Tsuda, Yuki Goto, Takanori Shimada, Kazumi Taniguchi, Kiyohiko Takagishi, and Hiroshi Kubota
Cell-Surface DEAD-Box Polypeptide 4-Immunoreactive Cells and Gonocytes Are Two Distinct Populations in Postnatal Porcine Testes

Biol Reprod April 2014 90 (4) 82, 1-11; published ahead of print March 12, 2014, doi:10.1095/biolreprod.113.114405

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

Summary: Recombinant porcine DDX4 can be expressed on the cell surface; however, cell-surface DDX4-immunoreactive cells identified in postnatal pig testes are not germ cells.

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Toxicology

- Mingxi Liu, Barbara F. Hales, and Bernard Robaire
Effects of Four Chemotherapeutic Agents, Bleomycin, Etoposide, Cisplatin, and Cyclophosphamide, on DNA Damage and Telomeres in a Mouse Spermatogonial Cell Line

Biol Reprod April 2014 90 (4) 72, 1-10; published ahead of print February 26, 2014, doi:10.1095/biolreprod.114.117754

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

Summary: Alkylating agents, cisplatin and cyclophosphamide, and bleomycin damage telomeres in a spermatogonial cell line; anticancer drug-induced persistent damage to germ cell telomeres would raise concern about potential risk to subsequent generations.