

BIOLOGY *of* REPRODUCTION

Official Journal of the Society for
the Study of Reproduction

OCTOBER 2007

VOLUME 77 NUMBER 4

Biology of Reproduction Highlights	589
Dendritic Cells: Key to Fetal Tolerance?	590
<i>Sandra M. Blois, Ulrike Kammerer, Catalina Alba Soto, Mareike C. Tometten, Valerie Shaikly, Gabriela Barrientos, Richard Jurd, Daniel Rukavina, Angus W. Thomson, Burghard F. Klapp, Nelson Fernández, and Petra C. Arck</i>	
Dendritic cells, given their ability to modulate the nature of immune responses in stimulatory or tolerogenic fashion, appear as suitable candidates to perform regulatory functions in pregnancy.	
The Contrasting Effects of Ad Libitum and Restricted Feeding of a Diet Very High in Saturated Fats on Sex Ratio and Metabolic Hormones in Mice	599
<i>Andrei P. Alexenko, Jiude Mao, Mark R. Ellersieck, Angela M. Davis, Jeffrey J. Whyte, Cheryl S. Rosenfeld, and R. Michael Roberts</i>	
In mice, ad libitum consumption of a diet very high in fat skews the sex ratio of offspring towards males, while the same diet fed in restricted amounts, but having no effect on mouse fecundity, caused the sex ratio to become female-biased.	
Changes in Vinexin Expression Patterns in the Mouse Testis Induced by Developmental Exposure to 17Beta-Estradiol	605
<i>Maria Paz, Pedro P. López-Casas, and Jesús del Mazo</i>	
The testis-specific pattern of vinexin isoforms is altered by in vivo exposure to 17beta-estradiol during mouse development.	
Induction of Three Vitellogenins by 17beta-Estradiol with Concurrent Inhibition of the Growth Hormone-Insulin-Like Growth Factor 1 Axis in a Euryhaline Teleost, the Tilapia (<i>Oreochromis mossambicus</i>)	614
<i>Lori K. Davis, Naoshi Hiramatsu, Kaori Hiramatsu, Benjamin J. Reading, Takahiro Matsubara, Akihiko Hara, Craig V. Sullivan, Andrew L. Pierce, Tetsuya Hirano, and E. Gordon Grau</i>	
Estradiol rapidly induces three vitellogenin genes while simultaneously suppressing the growth hormone-insulin-like growth factor 1 axis in male tilapia.	
Identification of Calcitonin Expression in the Chicken Ovary: Influence of Follicular Maturation and Ovarian Steroids	626
<i>Susan M. Krzysik-Walker, Olga M. Ocón-Grove, Sreenivasa B. Maddineni, Gilbert L. Hendricks III, and Ramesh Ramachandran</i>	
Calcitonin gene expression in the chicken ovary is regulated by follicular maturation and gonadal steroids.	
Ejaculated and Epididymal Mouse Spermatozoa Are Different in Their Susceptibility to Nuclease-Dependent DNA Damage and in Their Nuclease Activity	636
<i>Yasuhiro Yamauchi, Anna Ajduk, Jonathan M. Riel, and Monika A. Ward</i>	
Epididymal and ejaculated mouse sperm preparations differ in their susceptibility to nuclease-dependent DNA damage; nuclease activity was detected in isolated sperm, epididymal fluid and seminal plasma, and was higher in ejaculate samples.	
A Role for Tissue Transglutaminase in Stabilization of Membrane-Cytoskeletal Particles Shed from the Human Placenta	648
<i>Nicola J. Robinson, Philip N. Baker, Carolyn J.P. Jones, and John D. Aplin</i>	
Tissue transglutaminase cross-links a group of cytoskeletal and membrane-associated proteins that are shed from the surface of the placenta into maternal circulation.	
Maternal and Embryonic Control of Uterine Sphingolipid-Metabolizing Enzymes During Murine Embryo Implantation	658
<i>Tomoko Kaneko-Tarui, Ling Zhang, Kathleen J. Austin, Luiz E. Henkes, Joshua Johnson, Thomas R. Hansen, and James K. Pru</i>	
Pregnancy induces changes in sphingolipid metabolism within the endometrium.	
Changes in Histone Acetylation During Postovulatory Aging of Mouse Oocyte	666
<i>Jun-Cheng Huang, Li-Ying Yan, Zi-Li Lei, Yi-Liang Miao, Li-Hong Shi, Ji-Wen Yang, Qiang Wang, Ying-Chun Ouyang, Qing-Yuan Sun, and Da-Yuan Chen</i>	
Gradual acetylation on some lysines of histone H3 and H4 was one of the phenomena in the process of postovulatory aging and raising the level of histone acetylation by trichostatin A can accelerate the progression of postovulatory aging.	

Developmental Expression and Gene Regulation of Insulin-like 3 Receptor RXFP2 in Mouse Male Reproductive Organs	671
<i>Shu Feng, Natalia V. Bogatcheva, Anne Truong, Borys Korchin, Colin E. Bishop, Thomas Klonisch, Irina U. Agoulnik, and Alexander I. Agoulnik</i>	
Expression profile of insulin-like 3 hormone receptor RXFP2 indicates function in male reproductive organs; the activity of human <i>RXFP2</i> promoter is regulated by SOX9.	
Promoter Methylation Regulates Estrogen Receptor 2 in Human Endometrium and Endometriosis	681
<i>Qing Xue, Zhihong Lin, You-Hong Cheng, Chiang-Ching Huang, Erica Marsh, Ping Yin, Magdy P. Milad, Edmond Confino, Scott Reierstad, Joy Innes, and Serdar E. Bulun</i>	
Estrogen receptor 2, expressed in strikingly higher levels in endometriosis compared with normal endometrium, is regulated primarily by methylation of a CpG island in its promoter.	
The Sea Lamprey (<i>Petromyzon marinus</i>) Has a Receptor for Androstenedione	688
<i>Mara B. Bryan, Alexander P. Scott, and Weiming Li</i>	
Androstenedione and its cognate receptor have vital roles in regulating reproductive physiology in male sea lampreys (<i>Petromyzon marinus</i>), thus suggesting that the nuclear androgen receptor evolved prior to the agathan-gnathostome divergence.	
Autonomous Regulation of Sex-Specific Developmental Programming in Mouse Fetal Germ Cells	697
<i>Kazuhiro Iwahashi, Hirotaka Yoshioka, Eleanor W. Low, John R. McCarrey, Ryuzo Yanagimachi, and Yukiko Yamazaki</i>	
Mechanisms controlling epigenetic programming and replication state are autonomously regulated in mouse fetal germ cells that have been exposed to the genital ridge prior to 13.5 dpc.	
Cyclic Adenosine 3',5' Monophosphate/Protein Kinase A and Mitogen-Activated Protein Kinase 3/1 Pathways Are Involved in Adenylate Cyclase-Activating Polypeptide 1-Induced Common Alpha-Glycoprotein Subunit Gene (<i>Cga</i>) Expression in Mouse Pituitary Gonadotroph LbetaT2 Cells	707
<i>Takashi Harada, Haruhiko Kanasaki, Sandra Mutiara, Aki Oride, and Kohji Miyazaki</i>	
Both cAMP elevation and MAPK3/1 activation are necessary for induction of <i>Cga</i> by ADCYAP1.	
Seminal Plug Expulsion Induced by Electrical Stimulation of the Intermesenteric Nerve in Anesthetized Rats . . .	717
<i>Jacques Bernabé, Pierre Clément, Pierre Denys, Laurent Alexandre, and François Giuliano</i>	
Electrical stimulation of the intermesenteric nerve can elicit ejaculation in anesthetized rats by recruiting both afferents relaying at the supraspinal level and efferents.	
<i>Gfra1</i> Silencing in Mouse Spermatogonial Stem Cells Results in Their Differentiation Via the Inactivation of RET Tyrosine Kinase	723
<i>Zuping He, Jiji Jiang, Marie-Claude Hofmann, and Martin Dym</i>	
<i>Gfra1</i> expression is restricted to mouse spermatogonial stem cells, and its knockdown results in the induction of differentiation.	
Early Maturation of Gonadotropin-Releasing Hormone Secretion and Sexual Precocity after Exposure of Infant Female Rats to Estradiol or Dichlorodiphenyltrichloroethane	734
<i>Grégory Rasier, Anne-Simone Parent, Arlette Gérard, Marie-Christine Lebrethon, and Jean-Pierre Bourguignon</i>	
Dichlorodiphenyltrichloroethane causes early acceleration of pulsatile gonadotropin-releasing hormone secretion in vitro and precocious sexual maturation in vivo.	
Expression and Function of Fibroblast Growth Factor 10 and Its Receptor, Fibroblast Growth Factor Receptor 2B, in Bovine Follicles	743
<i>J. Buratini Jr., M.G.L. Pinto, A.C. Castilho, R.L. Amorim, I.C. Giometti, V.M. Portela, E.S. Nicola, and C.A. Price</i>	
FGF10 is expressed by theca cells and oocytes, and inhibits estradiol secretion from granulosa cells in cattle.	
Ad Hoc Reviewers	751

Contents by Category

Environment

- 734 Early Maturation of Gonadotropin-Releasing Hormone Secretion and Sexual Precocity after Exposure of Infant Female Rats to Estradiol or Dichlorodiphenyltrichloroethane. *Grégory Rasier, Anne-Simone Parent, Arlette Gérard, Marie-Christine Lebrethon, and Jean-Pierre Bourguignon*

Female Reproductive Tract

- 681 Promoter Methylation Regulates Estrogen Receptor 2 in Human Endometrium and Endometriosis. *Qing Xue, Zhihong Lin, You-Hong Cheng, Chiang-Ching Huang, Erica Marsh, Ping Yin, Magdy P. Milad, Edmond Confino, Scott Reierstad, Joy Innes, and Serdar E. Bulun*

Gamete Biology

- 666 Changes in Histone Acetylation During Postovulatory Aging of Mouse Oocyte. *Jun-Cheng Huang, Li-Ying Yan, Zi-Li Lei, Yi-Liang Miao, Li-Hong Shi, Ji-Wen Yang, Qiang Wang, Ying-Chun Ouyang, Qing-Yuan Sun, and Da-Yuan Chen*
- 697 Autonomous Regulation of Sex-Specific Developmental Programming in Mouse Fetal Germ Cells. *Kazuhiro Iwahashi, Hirota Yoshioka, Eleanor W. Low, John R. McCarrey, Ryuzo Yanagimachi, and Yukiko Yamazaki*

Male Reproductive Tract

- 671 Developmental Expression and Gene Regulation of Insulin-like 3 Receptor RXFP2 in Mouse Male Reproductive Organs. *Shu Feng, Natalia V. Bogatcheva, Anne Truong, Borys Korchin, Colin E. Bishop, Thomas Klonisch, Irina U. Agoulnik, and Alexander I. Agoulnik*
- 717 Seminal Plug Expulsion Induced by Electrical Stimulation of the Intermesenteric Nerve in Anesthetized Rats. *Jacques Bernabé, Pierre Clément, Pierre Denys, Laurent Alexandre, and François Giuliano*

Mechanisms of Hormone Action

- 614 Induction of Three Vitellogenins by 17beta-Estradiol with Concurrent Inhibition of the Growth Hormone-Insulin-Like Growth Factor 1 Axis in a Euryhaline Teleost, the Tilapia (*Oreochromis mossambicus*). *Lori K. Davis, Naoshi Hiramatsu, Kaori Hiramatsu, Benjamin J. Reading, Takahiro Matsubara, Akihiko Hara, Craig V. Sullivan, Andrew L. Pierce, Tetsuya Hirano, and E. Gordon Grau*

Minireviews

- 590 Dendritic Cells: Key to Fetal Tolerance? *Sandra M. Blois, Ulrike Kammerer, Catalina Alba Soto, Mareike C. Tometten, Valerie Shaikly, Gabriela Barrientos, Richard Jurd, Daniel Rukavina, Angus W. Thomson, Burghard F. Klapp, Nelson Fernández, and Petra C. Arck*

Neuroendocrinology

- 707 Cyclic Adenosine 3',5'-Monophosphate/Protein Kinase A and Mitogen-Activated Protein Kinase 3/1 Pathways Are Involved in Adenylate Cyclase-Activating Polypeptide 1-Induced Common Alpha-Glycoprotein Subunit Gene (*Cga*) Expression in Mouse Pituitary Gonadotroph LbetaT2 Cells. *Takashi Harada, Haruhiko Kanasaki, Sandra Mutiara, Aki Oride, and Kohji Miyazaki*

Ovary

- 626 Identification of Calcitonin Expression in the Chicken Ovary: Influence of Follicular Maturation and Ovarian Steroids. *Susan M. Krzysik-Walker, Olga M. Ocón-Grove, Sreenivasa B. Maddineni, Gilbert L. Hendricks III, and Ramesh Ramachandran*
- 743 Expression and Function of Fibroblast Growth Factor 10 and Its Receptor, Fibroblast Growth Factor Receptor 2B, in Bovine Follicles. *J. Buratini Jr., M.G.L. Pinto, A.C. Castilho, R.L. Amorim, I.C. Giometti, V.M. Portela, E.S. Nicola, and C.A. Price*

Pregnancy

- 599 The Contrasting Effects of Ad Libitum and Restricted Feeding of a Diet Very High in Saturated Fats on Sex Ratio and Metabolic Hormones in Mice. *Andrei P. Alexenko, Jiude Mao, Mark R. Eilersieck, Angela M. Davis, Jeffrey J. Whyte, Cheryl S. Rosenfeld, and R. Michael Roberts*
- 648 A Role for Tissue Transglutaminase in Stabilization of Membrane-Cytoskeletal Particles Shed from the Human Placenta. *Nicola J. Robinson, Phillip N. Baker, Carolyn J.P. Jones, and John D. Aplin*
- 658 Maternal and Embryonic Control of Uterine Sphingolipid-Metabolizing Enzymes During Murine Embryo Implantation. *Tomoko Kaneko-Tarui, Ling Zhang, Kathleen J. Austin, Luiz E. Henkes, Joshua Johnson, Thomas R. Hansen, and James K. Pru*

Reproductive Technology

- 636 Ejaculated and Epididymal Mouse Spermatozoa Are Different in Their Susceptibility to Nuclease-Dependent DNA Damage and in Their Nuclease Activity. *Yasuhiro Yamauchi, Anna Ajduk, Jonathan M. Riel, and Monika A. Ward*

Testis

- 605 Changes in Vinexin Expression Patterns in the Mouse Testis Induced by Developmental Exposure to 17Beta-Estradiol. *Maria Paz, Pedro P. López-Casas, and Jesús del Mazo*
- 688 The Sea Lamprey (*Petromyzon marinus*) Has a Receptor for Androstenedione. *Mara B. Bryan, Alexander P. Scott, and Weiming Li*
- 723 *Gfra1* Silencing in Mouse Spermatogonial Stem Cells Results in Their Differentiation Via the Inactivation of RET Tyrosine Kinase. *Zuping He, Jiji Jiang, Marie-Claude Hofmann, and Martin Dym*