September 1, 2014; 91 (3)

Clear Get All Checked Abstracts

Charlotte Schubert
WORLD OF REPRODUCTIVE BIOLOGY
Biol Reprod September 2014 91 (3) 54, 1-2;doi:10.1095/biolreprod.114.123752
Full Text **Full Text (PDF)**

Commentary

Franco J. DeMayo, Thomas E. Spencer,and Editors-in-Chief, Biology of Reproduction
CRISPR Bacon: A Sizzling Technique to Generate Genetically Engineered Pigs
Biol Reprod September 2014 91 (3) 79, 1-3; published ahead of printAugust 6, 2014, doi:10.1095/biolreprod.114.123935
Full Text **Full Text (PDF)**

Summary: The cisgenic and transgenic capabilities of the CRISPR/Cas9 system provides important applications to create animal models and revolutionize all aspects of science in agriculture and human health.

Minireview

Irene I. Lee and J. Julie Kim
Influence of AKT on Progesterone Action in Endometrial Diseases
Biol Reprod September 2014 91 (3) 63, 1-10; published ahead of printAugust 6, 2014, doi:10.1095/biolreprod.114.119255
Abstract **Full Text** **Full Text (PDF)** **Author Biosketches**

Summary: This manuscript reviews studies describing increased AKT activity in endometriosis and endometrial cancer and how it dysregulates progesterone action.

Clear Get All Checked Abstracts

Research Articles

Embryo

Kyung-Bon Lee, Kun Zhang, Joseph K. Folger, Jason G. Knott,and George W. Smith
Evidence Supporting a Functional Requirement of SMAD4 for Bovine Preimplantation Embryonic Development: A Potential Link to Embryotrophic Actions of Follistatin
Biol Reprod September 2014 91 (3) 62, 1-10; published ahead of printJuly 16, 2014, doi:10.1095/biolreprod.114.120105
Abstract **Full Text** **Full Text (PDF)** **Supplemental Data**

Summary: SMAD4 is required for bovine early embryogenesis, and embryotrophic actions of follistatin are dependent on SMAD4.

Kristin M. Whitworth, Kiho Lee, Joshua A. Benne, Benjamin P. Beaton,Lee D. Spate, Stephanie L. Murphy, Melissa S. Samuel, Jiude Mao,Chad O'Gorman, Er
Use of the CRISPR/Cas9 System to Produce Genetically Engineered Pigs from In Vitro-Derived Oocytes and Embryos
Biol Reprod September 2014 91 (3) 78, 1-13; published ahead of printAugust 6, 2014, doi:10.1095/biolreprod.114.121723
Abstract **Full Text** **Full Text (PDF)** **Supplemental Data**

Summary: The CRISPR/Cas9s system is used to induce both biallelic and homozygous mutations by both RNA injection into zygotes and somatic cell nuclear transfer at a very high efficiency in pigs.

Kyle B. Dobbs, Dominic Gagné, Eric Fournier, Isabelle Dufort,Claude Robert, Jeremy Block, Marc-André Sirard, Luciano Bonilla,Alan D. Ealy, Barbara Loureir
Sexual Dimorphism in Developmental Programming of the Bovine Preimplantation Embryo Caused by Colony-Stimulating Factor 2
Biol Reprod September 2014 91 (3) 80, 1-12; published ahead of printJuly 30, 2014, doi:10.1095/biolreprod.114.121087
Abstract **Full Text** **Full Text (PDF)** **Supplemental Data**

Summary: The sex of the bovine preimplantation embryo determines the developmental programming response to the embryokine CSF2.

Clear Get All Checked Abstracts

Female Reproductive Tract

Alison S. Care, Wendy V. Ingman, Lachlan M. Moldenhauer,Melinda J. Jasper, and Sarah A. Robertson
Ovarian Steroid Hormone-Regulated Uterine Remodeling Occurs Independently of Macrophages in Mice
Biol Reprod September 2014 91 (3) 60, 1-12; published ahead of printJuly 24, 2014, doi:10.1095/biolreprod.113.116509
Abstract **Full Text** **Full Text (PDF)** **Supplemental Data**

Summary: In the *Cd11b-Dtr* acute macrophage depletion mouse model, removal of uterine macrophages does not impair the ovarian sex steroid hormone-driven vascular changes or proliferative response of uterine epithelial and stromal cells.

Gracy X. Rosario, Eiichi Hondo, Jae-Wook Jeong, Rafidah Mutalif,Xiaoqian Ye, Li Xuan Yee, and Colin L. Stewart

The LIF-Mediated Molecular Signature Regulating Murine Embryo Implantation

Biol Reprod September 2014 91 (3) 66, 1-18; published ahead of printJuly 16, 2014, doi:10.1095/biolreprod.114.118513

Abstract **Full Text** **Full Text (PDF)** **Supplemental Data**

OPEN ACCESS ARTICLE

Summary: The molecular characterization of LIF regulates the switch from a nonreceptive to a receptive uterine epithelium.

Julie A.W. Stilley, Debora E. Christensen, Kristin B. Dahlem,Rongbin Guan, Donna A. Santillan, Sarah K. England, Ayman Al-Hendy,Patricia A. Kirby, and D

FSH Receptor (FSHR) Expression in Human Extragonadal Reproductive Tissues and the Developing Placenta, and the Impact of Its Deletion on Pregnancy in Mice

Biol Reprod September 2014 91 (3) 74, 1-15; published ahead of printAugust 6, 2014, doi:10.1095/biolreprod.114.118562

Abstract **Full Text** **Full Text (PDF)** **Supplemental Data**

Summary: Follicle-stimulating hormone receptor (FSHR) expressed in specific cell types of the placenta and other extragonadal tissues of the reproductive tract plays a role in fetoplacental development.

Clear Get All Checked Abstracts

Gamete Biology

Jolanta Guz, Daniel Gackowski, Marek Foksinski, Rafal Rozalski,and Ryszard Olinski

Comparison of the Absolute Level of Epigenetic Marks 5-Methylcytosine, 5-Hydroxymethylcytosine, and 5-Hydroxymethyluracil Between Human Leukocytes and Sperm

Biol Reprod September 2014 91 (3) 55, 1-5; published ahead of printJuly 24, 2014, doi:10.1095/biolreprod.114.121541

Abstract **Full Text** **Full Text (PDF)**

Summary: An exceptionally high value of 5-hydroxymethyluracil in sperm (>10-fold higher than in leukocytes) may play a not yet recognized regulatory role in the paternal genome.

Federica Franciosi, Giovanni Coticchio, Valentina Lodde, Irene Tessaro,Silvia C. Modina, Rubens Fadini, Mariabeatrice Dal Canto,Mario Mignini Renzini, Davi

Natriuretic Peptide Precursor C Delays Meiotic Resumption and Sustains Gap Junction-Mediated Communication in Bovine Cumulus-Enclosed Oocytes

Biol Reprod September 2014 91 (3) 61, 1-9; published ahead of printJuly 30, 2014, doi:10.1095/biolreprod.114.118869

Abstract **Full Text** **Full Text (PDF)** **Supplemental Data**

Summary: In vitro exposure of bovine cumulus-enclosed oocytes to natriuretic peptide precursor C (NPPC) delays meiotic resumption for up to 6 h, maintains functional coupling between oocyte and cumulus cells, and increases oocyte developmental competence.

Claudia Sánchez-Cárdenas, Martha Rocio Servín-Vences, Omar José,Claudia Lydia Treviño, Arturo Hernández-Cruz, and Alberto Darszon

Acrosome Reaction and Ca^{2+} Imaging in Single Human Spermatozoa: New Regulatory Roles of $[Ca^{2+}]i$

Biol Reprod September 2014 91 (3) 67, 1-13; published ahead of printAugust 6, 2014, doi:10.1095/biolreprod.114.119768

Abstract **Full Text** **Full Text (PDF)** **Supplemental Data**

Summary: A novel strategy to monitor, concurrently, acrosome reaction and calcium in living human spermatozoa reveals two opposing roles of calcium.

Sara Scantland, Irene Tessaro, Carolina H. Macabelli,Angus D. Macaulay, Gaël Cagnone, Éric Fournier, Alberto M. Luciano,and Claude Robert

The Adenosine Salvage Pathway as an Alternative to Mitochondrial Production of ATP in Maturing Mammalian Oocytes

Biol Reprod September 2014 91 (3) 75, 1-11; published ahead of printJuly 30, 2014, doi:10.1095/biolreprod.114.120931

Abstract **Full Text** **Full Text (PDF)** **Supplemental Data**

Summary: The mammalian oocyte utilizes an alternate route for its energy production by recuperating the residuum from the degradation of the key compound that prevents meiosis resumption, namely, cyclic-AMP, by using the adenosine salvage pathway to transform AMP into ATP.

Zamira Gibb, Sarah R. Lambourne, and Robert J. Aitken

The Paradoxical Relationship Between Stallion Fertility and Oxidative Stress

Biol Reprod September 2014 91 (3) 77, 1-10; published ahead of printJuly 30, 2014, doi:10.1095/biolreprod.114.118539

Abstract **Full Text** **Full Text (PDF)** **Supplemental Data**

Summary: Markers of fertility in Thoroughbred stallion spermatozoa are influenced by the production of reactive oxygen species due to oxidative phosphorylation being the primary mechanism for ATP production.

Clear Get All Checked Abstracts

Mechanisms of Hormone Action

Haijun Gao, Daniel A. Liebenthal, Uma Yallampalli,and Chandra Yallampalli

Adrenomedullin Promotes Rat Trophoblast Stem Cell Differentiation

Biol Reprod September 2014 91 (3) 65, 1-6; published ahead of printJuly 24, 2014, doi:10.1095/biolreprod.114.120378

Abstract **Full Text** **Full Text (PDF)**

Summary: Adrenomedullin promotes but not induces trophoblast stem cell differentiation, and the stimulatory effect of ADM on TSC differentiation is mediated by ADM receptor consisting of CALCRL and RAMP2 and phosphorylation of MTOR.

Clear Get All Checked Abstracts

Ovary

Svetlana Farberov and Rina Meidan

Functions and Transcriptional Regulation of Thrombospondins and Their Interrelationship with Fibroblast Growth Factor-2 in Bovine Luteal Cells

Biol Reprod September 2014 91 (3) 58, 1-10; published ahead of printJuly 24, 2014, doi:10.1095/biolreprod.114.121020

Abstract **Full Text** **Full Text (PDF)**

Summary: The proapoptotic and antiangiogenic properties of THBS1, coupled with its ability to inhibit FGF2 expression and activity, may be decisive for luteal regression.

Sudipta Dutta, Connie J. Mark-Kappeler, Patricia B. Hoyer,and Melissa E. Pepling

The Steroid Hormone Environment During Primordial Follicle Formation in Perinatal Mouse Ovaries

Biol Reprod September 2014 91 (3) 68, 1-12; published ahead of printJuly 30, 2014, doi:10.1095/biolreprod.114.119214

Abstract **Full Text** **Full Text (PDF)**

Summary: Fetal mouse ovaries produce steroid hormones, and blocking steroid hormone production reduces the number of oocytes.

Clear Get All Checked Abstracts

Pregnancy

Hongjuan Ding, Yiyu Zhang, Lun Liu, Hongyan Yuan, Jian Qu,and Rong Shen

Activation of Peroxisome Proliferator Activator Receptor Delta in Mouse Impacts Lipid Composition and Placental Development at Early Stage of Gestation

Biol Reprod September 2014 91 (3) 57, 1-11; published ahead of printJune 11, 2014, doi:10.1095/biolreprod.113.116772

Abstract **Full Text** **Full Text (PDF)** **Supplemental Data**

OPEN ACCESS ARTICLE

Summary: *Ppard* activation elicits dramatic changes of the metabolic activities in placenta, which is correlated to AKT and ERK signaling pathways.

Xiaoqiu Wang, James W. Frank, Jing Xu, Kathrin A. Dunlap,M. Carey Satterfield, Robert C. Burghardt, Jared J. Romero,Thomas R. Hansen, Guoyao Wu, and

Functional Role of Arginine During the Peri-implantation Period of Pregnancy. II. Consequences of Loss of Function of Nitric Oxide Synthase *NOS3* mRNA in Ovine Conceptus Trophectoderm

Biol Reprod September 2014 91 (3) 59, 1-10; published ahead of printJuly 24, 2014, doi:10.1095/biolreprod.114.121202

Abstract **Full Text** **Full Text (PDF)**

Summary: Nitric oxide synthase 3, the key enzyme for nitric oxide production by conceptus trophectoderm, also regulates the availability of arginine in conceptus tissues for synthesis of polyamines that are essential for conceptus survival and development.

Stella Liong and Martha Lappas

Endoplasmic Reticulum Stress Is Increased after Spontaneous Labor in Human Fetal Membranes and Myometrium Where It Regulates the Expression of Prolabor Mediators

Biol Reprod September 2014 91 (3) 70, 1-19; published ahead of printAugust 6, 2014, doi:10.1095/biolreprod.114.120741

Abstract **Full Text** **Full Text (PDF)**

Summary: Endoplasmic reticulum (ER) stress is increased in laboring fetal membranes and myometrium, and inhibition of ER stress by chemical chaperones decreased the expression of proinflammatory and

prolabor mediators.

C. Dunand, P. Hoffmann, V. Sapin, L. Blanchon, A. Salomon,F. Sergent, M. Benharouga, S. Sabra, J. Guibourdenche, S.J. Lye,J.J. Feige, and N. Alfaidy

Endocrine Gland-Derived Endothelial Growth Factor (EG-VEGF) Is a Potential Novel Regulator of Human Parturition

Biol Reprod September 2014 91 (3) 73, 1-10; published ahead of printAugust 13, 2014, doi:10.1095/biolreprod.114.119990

Abstract **Full Text** **Full Text (PDF)** **Supplemental Figure**

Summary: EG-VEGF protects fetal membranes rupture and controls human parturition.

Uzma Nadeem, Gang Ye, Mohamed Salem, and Chun Peng

MicroRNA-378a-5p Targets Cyclin G2 to Inhibit Fusion and Differentiation in BeWo Cells

Biol Reprod September 2014 91 (3) 76, 1-10; published ahead of printAugust 13, 2014, doi:10.1095/biolreprod.114.119065

Abstract **Full Text** **Full Text (PDF)** **Supplemental Data**

Summary: miR-378a-5p inhibits cell fusion and syncytiotrophoblast marker gene expression, in part by targeting cyclin G2 in the BeWo cell model.

Clear Get All Checked Abstracts

Reproductive Technology

Hua-Yu Lian, Guang-Zhong Jiao, Hui-Li Wang, Xiu-Wen Tan,Tian-Yang Wang, Liang-Liang Zheng, Qiao-Qiao Kong, and Jing-He Tan

Role of Cytoskeleton in Regulating Fusion of Nucleoli: A Study Using the Activated Mouse Oocyte Model

Biol Reprod September 2014 91 (3) 56, 1-8; published ahead of printJuly 24, 2014, doi:10.1095/biolreprod.114.120188

Abstract **Full Text** **Full Text (PDF)**

Summary: The results suggest that microfilaments and intermediate filaments but not microtubules support nucleolar fusion and that proteins required for nucleolar fusion including microfilaments and intermediate filaments are not de novo synthesized.

Qian Gao, Hai-Tao Pan, Xian-Hua Lin, Jun-Yu Zhang, Ying Jiang,Shen Tian, Lu-Ting Chen, Miao-E Liu, Yi-Meng Xiong, He-Feng Huang,and Jian-Zhong Sheng

Altered Protein Expression Profiles in Umbilical Veins: Insights into Vascular Dysfunctions of the Children Born after In Vitro Fertilization

Biol Reprod September 2014 91 (3) 71, 1-11; published ahead of printAugust 6, 2014, doi:10.1095/biolreprod.114.120659

Abstract **Full Text** **Full Text (PDF)** **Supplemental Data**

Summary: Altered protein expression profile in umbilical veins of IVF newborns might be helpful for further mechanism study on the vascular dysfunction of IVF children.

Clear Get All Checked Abstracts

Testis

Sreesha Sree, Karthika Radhakrishnan, Sivankutty Indu,and Pradeep G. Kumar

Dramatic Changes in 67 miRNAs During Initiation of First Wave of Spermatogenesis in *Mus musculus* Testis: Global Regulatory Insights Generated by miRNA-mRNA Network Analysis

Biol Reprod September 2014 91 (3) 69, 1-11; published ahead of printAugust 13, 2014, doi:10.1095/biolreprod.114.119305

Abstract **Full Text** **Full Text (PDF)** **Supplemental Data**

Summary: Integrated networks of differentially expressed miRNAs and mRNAs associated with the initiation of the first wave of spermatogenesis in mouse testis predict the involvement of important miRNA-dependent regulation of gene expression in spermatogenesis.

Clear Get All Checked Abstracts

Toxicology

Steven Jones, Annie Boisvert, Tam B. Duong, Sade Francois,Peter Thrane, and Martine Culty

Disruption of Rat Testis Development Following Combined In Utero Exposure to the Phytoestrogen Genistein and Antiandrogenic Plasticizer Di-(2-Ethylhexyl) Phthalate

Biol Reprod September 2014 91 (3) 64, 1-14; published ahead of printJuly 16, 2014, doi:10.1095/biolreprod.114.120907

Abstract **Full Text** **Full Text (PDF)**

Summary: Combined in utero exposure to genistein and di-(2-ethylhexyl) phthalate induces long-term alterations in male reproductive function in a manner that is different from individual compounds.

Clear Get All Checked Abstracts

Additions and Corrections

ADDITIONS AND CORRECTIONS

Biol Reprod September 2014 91 (3) 72, 1-1; published ahead of printAugust 13, 2014, doi:10.1095/biolreprod.114.124214

Full Text **Full Text (PDF)**