

PROGRAM BOOK

37TH ANNUAL CONFERENCE OF THE
INTERNATIONAL EMBRYO TRANSFER SOCIETY

THEME:

*REPRODUCTIVE BIOTECHNOLOGY AT THE INTERFACE
BETWEEN ANIMAL AGRICULTURE AND
BIOMEDICAL RESEARCH*



JANUARY 8-12, 2011
WYNDHAM ORLANDO RESORT
ORLANDO, FLORIDA

CO-CHAIRS OF THE SCIENTIFIC PROGRAM:
CIRO M. BARROS AND ECKHARD WOLF

TABLE OF CONTENTS

2011 Preface and Acknowledgments	3
2010–2011 IETS Board of Governors	3
2011 Recipient of the IETS Pioneer Award	4
Map of the Venue	5
Calendar of Events.....	6
General Information.....	8
Section Editors and Manuscript and Abstract Reviewers.....	10
Main Scientific Program	12
Poster Sessions.....	18
Poster and Exhibit Room Layout.....	18
Poster Session Order by Topics, Titles and Authors	19
Poster Session Author Index	47
2011 Recipient of the IETS Distinguished Service Award	56
Special Events.....	57
Exhibit Directory	59
Preconference Symposium	61
Preconference Workshop	62
Postconference Workshop.....	66

2010-2011 IETS BOARD OF GOVERNORS

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2011 PREFACE AND ACKNOWLEDGMENTS

The 37th Annual Meeting of the International Embryo Transfer Society will be held at the Wyndham Orlando Resort, Orlando, Florida, on January 8–12, 2011. The theme of this year's program is "Reproductive Biotechnology at the Interface Between Animal Agriculture and Biomedical Research." The theme emphasizes the unique opportunities and challenges for a rapidly expanding field. The program may be seen as an experiment to attract the interest of the broad audience joining IETS meetings: researchers, practitioners, and students alike. Three sessions will deal with recent developments in fields of immediate practical relevance: regulation and manipulation of follicular development, and cryopreservation of germ cells and embryos. A session on transgenic livestock in agriculture and biomedicine will provide an update on this attractive topic, with particular emphasis on tailored large animal models for translational biomedical research. Finally two sessions will discuss molecular profiles at the epigenome, transcriptome, and proteome levels as sensors and drivers of biological processes related to reproduction and fertility. An intellectual and visual highlight will be the keynote lecture by Thomas Cremer, demonstrating the most recent developments in light microscopy and their use for gaining unprecedented insights into the functional architecture of cell nuclei.

In addition to the 11 invited lectures, we will have nine short oral presentations selected from the 339 abstracts that have been submitted and positively evaluated. These presentations, together with the oral presentations of the student competition, will give excellent young scientists the chance to present their results to a broad and competent audience and to establish themselves as influential members of the community.

It is obvious that the organization of an IETS meeting required the help of many of our society's members and colleagues, and we are indebted to all those who willingly agreed to assist us. Foremost we would like to thank the invited speakers and their coauthors for providing excellent overviews of their topics. We are also grateful to the section editors and the reviewers of manuscripts and abstracts, who all provided their expert evaluations in a timely manner.

Special thanks go to Jose Santos and Cliff Lamb for arranging the Preconference Symposium, "Advances in Bovine Reproduction and Embryo Technology," to Fulvio Gandolfi and the IETS DABE Committee for organizing the 2nd DABE workshop, "Plasticity, Fate Control, and Therapeutic Safety of Stem Cells," and the IETS Committee on Companion Animals, Non-Domestic and Endangered Species (CANDES) for arranging the Post-conference Seminar, "International Regulations and Requirements for the Import/Export of Reproductive Biomaterials: Embryos, Semen, and Tissues."

We would also like to thank the Board of Governors of the IETS for their continuous support in the organization of the conference and the contribution and participation of all the companies that decided to sponsor and participate in the conference. Without their important economic contributions, this meeting would not have been possible.

We would like to especially thank Debi Seymour, the executive secretary of IETS, and the local organizing committee chaired by Peter J. Hansen for their commitment and all efforts in preparing this meeting and making it a success.

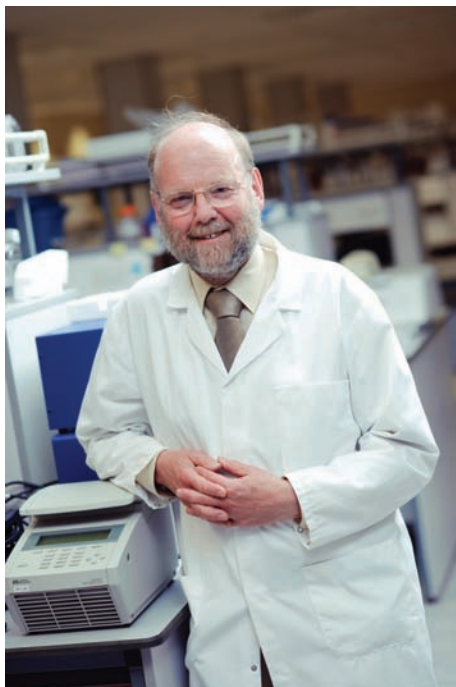
Dr. Tony Flint, editor-in-chief, and Caroline Hadley, publisher of *Reproduction, Fertility and Development*, are gratefully acknowledged for production and publication of the conference proceedings.

Finally, we thank all attendees for contributing to the conference and hope that the meeting will be an interesting and pleasant event for all.

Eckhard Wolf and Ciro Barros
Program Co-Chairs

2011 RECIPIENT OF THE IETS PIONEER AWARD

IAN WILMUT



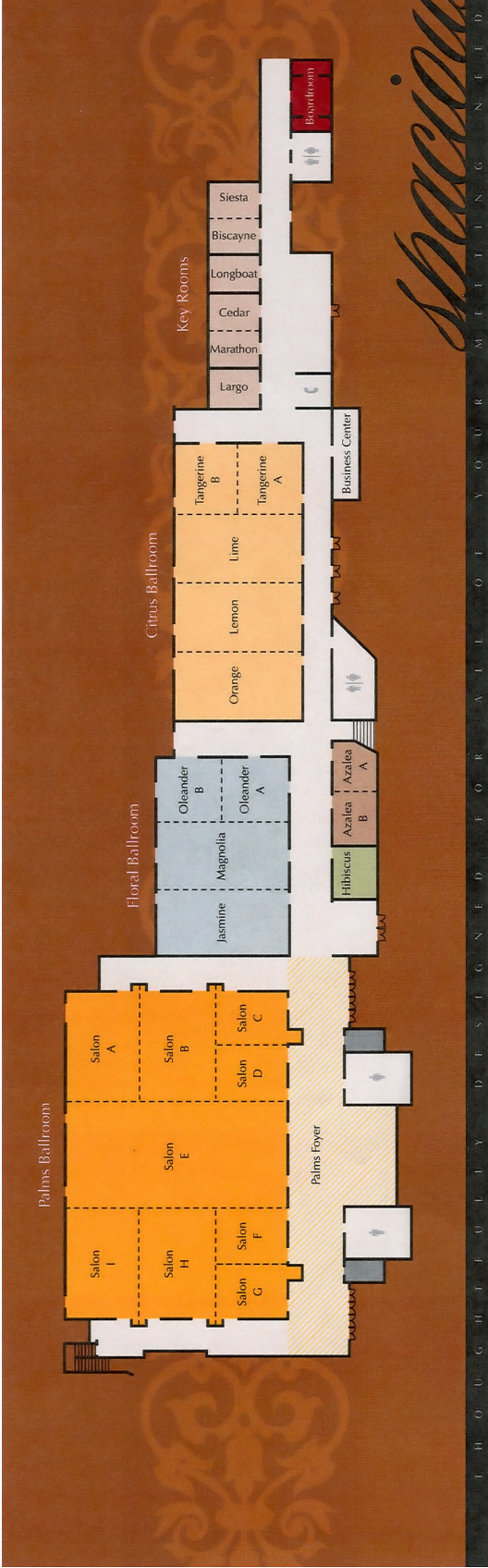
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Award Presentation: Monday, January 10 at 16:30

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- | | |
|-------------------------------|-----------------------------------|
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| S. P. Leibo (2009) | C.R. Austin (1995) |
| G. Seidel, Jr. (2008) | N.W. Moore (1994) |
| A. Iritani (2007) | R.G. Edwards (1993) |
| D. Kraemer (2006) | R.L. Brinster (1992) |
| S. Willadsen (2005) | A.K. Tarkowski (1991) |
| B. Brackett (2004) | J.D. Biggers (1990) |
| K. Betteridge (2003) | C. Thibault (1989) |
| R.H. Foote (2002) | A.L. McLaren and D. Michie (1988) |
| P.J. Dziuk (2001) | E.J.C. Polge (1987) |
| R. Yanagimachi (2000) | T.M. Sugie (1986) |
| R.M. Moor (1999) | L.E.A. Rowson (1985) |
| I. Gordon (1998) | L.E. Casida (1984) |
| S. Wintenberger-Torres (1997) | M.C. Chang (1983) |
| | R.O. Berry (1982) |

MAP OF THE VENUE



WYNDHAM ORLANDO RESORT MEETING ROOMS

37TH IETS ANNUAL CONFERENCE

CALENDAR OF EVENTS

THURSDAY, JANUARY 6, 2011

9:00 – 18:00 IETS Board of Governors Meeting (Largo Key)

FRIDAY, JANUARY 7, 2011

9:00 – 18:00 IETS Board of Governors Meeting (Largo Key)

9:00 – 18:00 Health and Safety Advisory Committee (HASAC) – Research Subcommittee (Cedar/Marathon)

16:00 – 19:00 Registration (pick-up of preregistrations only) (Palms Ballroom Foyer)

13:00 – 20:00 W2171 Research Committee Meeting (Orange)

SATURDAY, JANUARY 8, 2011

7:00 – 18:00 Registration (Palms Ballroom Foyer)

8:00 – 17:00 Preconference Symposium – Advances in Bovine Reproduction and Embryo Technology (Jasmine)

9:00 – 12:00 Health and Safety Advisory Committee (HASAC) – Regulatory Subcommittee (Azalea)

13:00 – 18:00 Poster Setup (Palms Ballroom)

13:00 – 17:00 IETS Foundation Board of Trustees Meeting (Executive Boardroom)

13:00 – 18:00 2nd DABE Workshop: Plasticity, Fate Control, and Therapeutic Safety of Stem Cells (Magnolia)

13:00 – 18:00 Commercial Exhibit Setup (Palms Ballroom)

14:00 – 17:00 Health and Safety Advisory Committee (HASAC) – Food Safety Subcommittee (Azalea)

17:00 – 18:00 IETS Student Group (The Morulas) Meet and Greet (Longboat)

SUNDAY, JANUARY 9, 2011

6:00 – 8:00 Poster Setup (Palms Ballroom)

7:00 – 18:00 Registration (Palms Ballroom Foyer)

7:30 – 8:30 Past Presidents' Breakfast (Cedar/Marathon)

7:30 – 8:30 Student Competition Breakfast with Foundation Education Committee (Longboat Key)

8:00 – 17:00 Commercial Exhibition (Palms Ballroom)

8:00 – 17:00 A/V Library/Speaker Preparation (Hibiscus)

8:30 – 9:30 IETS Foundation Education Committee (Largo Key)

8:45 – 9:00 Opening and Welcome (Floral Ballroom)

9:00 – 10:30 Session I: Follicular Reserve

10:30 – 11:00 Refreshment Break/Exhibition (Palms Ballroom)

11:00 – 12:30 IETS Foundation Student Competition Presentations (Floral Ballroom)

12:30 – 14:00 Lunch Break

12:30 – 14:00 IETS Board Luncheon with Affiliate Society Representatives (Azalea)

12:30 – 14:00 Health and Safety Advisory Committee (HASAC) – Forms and Certificates Subcommittee (Longboat)

14:00 – 15:30 Session II: Growth Factor and Follicular Development (Floral Ballroom)

15:30 – 16:00 Refreshment Break/Exhibition (Palms Ballroom)

16:00 – 17:30 Session III: Recent Advances in *In Vivo* and *In Vitro* Cryopreservation (Floral Ballroom)

17:30 – 18:00 Short Presentations from Submitted Abstracts

18:00 – 20:00 Health and Safety Advisory Committee (HASAC) Open Meeting (Floral Ballroom)
20:00 Welcome Reception – Wyndham Orlando Resort

MONDAY, JANUARY 10, 2011

7:30 – 16:00 Registration (Palms Ballroom Foyer)
8:00 – 18:00 Commercial Exhibits (Palms Ballroom)
8:00 – 17:00 A/V Library/Speaker Preparation (Hibiscus)
8:30 – 10:30 Poster Session I/Refreshment Break/Exhibition (Palms Ballroom)
10:30 – 11:15 Session IV: Genetic Engineering of Livestock
11:15 – 12:30 Session V: From Epigenetics to Epigenomics
12:00 – 12:30 Short Presentations from Submitted Abstracts
12:30 – 14:00 Lunch Break
12:30 – 14:00 IETS Data Retrieval Committee Meeting (Azalea)
12:30 – 13:30 Exhibitors Luncheon with the IETS Board (Cedar Key)
14:00 – 16:00 Session VI: Molecular Networks as Sensors and Drivers of Fertility (Floral Ballroom)
15:30 – 16:00 Short Presentations from Submitted Abstracts
16:00 – 16:30 Refreshment Break/Exhibition (Palms Ballroom)
16:30 – 17:00 IETS Pioneer Award Presentation (Floral Ballroom)
17:00 – 18:00 IETS Annual Business Meeting (Floral Ballroom)
18:00 – 20:00 Companion Animal, Non-Domestic and Endangered Species (CANDES)
Open Meeting (Floral Ballroom)
18:00 – 19:00 Domestic Animal Biomedical Embryology Committee (DABE) Open Meeting (Azalea)

TUESDAY, JANUARY 11, 2011

7:00 – 8:30 Organizational Meeting of the IETS Board of Governors (Largo Key)
8:00 – 15:00 Registration (Palms Ballroom Foyer)
8:00 – 13:30 Commercial Exhibits (Palms Ballroom)
8:00 – 17:00 A/V Library/Speaker Preparation (Hibiscus)
8:30 – 10:30 Poster Session II/Refreshment Break/Exhibition (Palms Ballroom)
10:30 – 12:30 Practitioners' Forum: Recent Advances in Superovulation and Embryo Production (Floral Ballroom)
12:30 – 13:30 Lunch Break
12:00 – 13:30 Organizational Lunch Meeting of the IETS Foundation (Cedar Key)
13:30 – 17:00 Commercial Exhibit and Poster Teardown (Palms Ballroom)
13:30 – 14:00 IETS Foundation Student Competition Awards, CANDES and HASAC Updates (Floral Ballroom)
14:00 – 14:45 IETS Distinguished Service Award Presentation (Floral Ballroom)
15:00 – 15:45 Session VII: Keynote Address (Floral Ballroom)
15:45 – 16:00 Closing Ceremony (Floral Ballroom)
16:30 – 17:30 9th IETS Annual Running Competition (Wyndham Orlando Resort)
19:00 Closing Party (West Pool Pavilion)

WEDNESDAY, JANUARY 12, 2011

7:30 – 11:00 Registration (Palms Ballroom Foyer)
8:00 – 17:00 Postconference Workshop: International Regulations and Requirements for the Import/Export of Reproductive Biomaterials: Embryos, Semen, and Tissue (Jasmine)

GENERAL INFORMATION

MEETING ROOM DIRECTORY

Main Conference Sessions	Floral Ballroom
Exhibits	Palms Ballroom
Poster Displays	Palms Ballroom

Please see the Calendar of Events for additional room assignments.

REGISTRATION DESK HOURS

The registration desk is located in the Palms Ballroom foyer.

Pick-up of preregistration packets only

Friday, January 7 16:00–19:00

On-site registration hours

Saturday, January 8 07:00–18:00

Sunday, January 9 07:00–18:00

Monday, January 10 07:30–16:00

Tuesday, January 11 08:00–15:00

Wednesday, January 12 07:30–11:00

EXHIBIT INFORMATION

Palms Ballroom

Setup Saturday, January 8 13:00–18:00

Exhibits Open Sunday, January 9 08:00–17:00
20:00 (Reception)

Monday, January 10 08:00–18:00

Tuesday, January 11 08:00–13:30

Teardown

Tuesday, January 11 13:30–17:00

Details on the exhibitors can be found in the Exhibit Directory on page ###.

BADGES

As a security requirement, we request that all participants wear their conference name badges to all sessions and social functions.

CERTIFICATES OF ATTENDANCE/PRESENTATION

If you requested a Certificate of Attendance or Certificate of Presentation with your registration, it will be included in your badge packet. If you did not request a certificate and need one, please come to the registration desk.

CURRENCY

The US Dollar is the legal tender in the United States. There are currency exchange centers located in Orlando Airport. For up-to-date currency exchange information, check the Universal Currency Converter™ at <http://www.xe.net/ucc/>. International credit cards are accepted throughout the country, and traveler's checks can be changed at banks, hotels, resorts, and most city stores.

MESSAGE BOARD

Any messages received for conference delegates will be posted on the message board located near the registration desk.

REFRESHMENTS

Morning and afternoon refreshments are included in your registration fee and are provided during the scheduled break times in the Exhibition area located in the Palms Ballroom.

DINING AND ENTERTAINMENT

Guests of the Wyndham Orlando Resort can enjoy the signature cuisine of Augustine's Bar & Grille, a sophisticated International Drive Orlando restaurant. Begin your stay with a hearty breakfast at Augustine's Restaurant. The Fields and Sun breakfast buffet features traditional favorites served with Wyndham flair. After a long day on the town, come to Augustine's Restaurant for a perfectly cooked steak or seafood. Located next to Augustine's Restaurant you'll find Augustine's Market Deli, serving sandwiches, salads, and more. Grab a bite to eat or a refreshing cup of Starbucks coffee. Spend the day lounging by the pool at Gatorville Pool Bar and Restaurant. This unique restaurant is the perfect place to grab a refreshing iced beverage and soak in the Florida sunshine. Dine poolside from a menu featuring a blend of Caribbean and Key West flavors. Cool off at Screams Ice Cream Parlor, located just outside Gatorville.

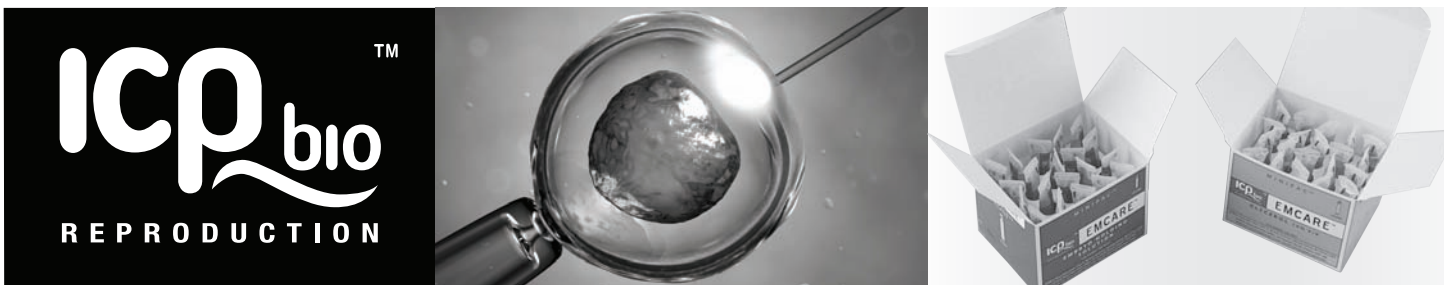
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The Wyndham Orlando Resort is surrounded by a variety of International Drive Orlando restaurant choices. Venture just moments from this [International Drive Orlando resort](#) to discover some of central Florida's finest restaurants. From Italian to Greek, you'll find it all here.

SERVICES AND AMENITIES

The Wyndham Resort is a family-friendly hotel offering guests the most relaxing, entertaining, and carefree time in Orlando. There is a complimentary shuttle service to and from Orlando's most popular theme parks, including Universal Orlando, SeaWorld, and Wet 'n Wild. The resort offers a shuttle to Disney World for a small fee. Visit the on-site ticket concierge to purchase tickets to all nearby parks.

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EMCARE™ with 34.2% Sucrose (1M)	Minipac	20x6ml	MPST-100
EMCARE™ with 1.5M Ethylene Glycol	Minipac	20x6ml	MPEG-100
	Bottle Pack	5x20ml	ECEG-100
EMCARE™ Embryo Thawing System	Minipac	4x4x6ml	MPTP-80

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THE PROGRAM CO-CHAIRS WOULD LIKE TO ACKNOWLEDGE AND THANK THE FOLLOWING PEOPLE

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Ken Bondioli, *Student Competition*
Eric Walters, *Artificial Insemination*
Keith Campbell, *Cloning/Nuclear Transfer*
Csaba Pribenszky, *Cryopreservation*
Brett White, *Developmental Biology*
Poul Hyttel, *Early Pregnancy/ Pregnancy Recognition*
Charles Rosenkrans, *Embryo Culture*
Marcelo Bertolini, *Embryo Manipulation*
Gabriel Bo, *Embryo Transfer*
Julie Gard, *Epidemiology/ Diseases*
Naida Loskutoff, *Exotic Species*
Christopher A. Price, *Folliculogenesis/Oogenesis*
Heiner Niemann, *Gene Expression*
Gisele Z. Mingoti, *IVF/IVP*
Heinrich Bollwein, *Male Physiology*
Ciro M. Barros, *Oocyte Activation*
Christine Wrenzycki, *Oocyte Maturation*
Detlef Rath, *Sexing*
Ciro M. Barros, *Sperm Injection*
Ken White, *Stem Cells*
Roberto Sartori Filho, *Superovulation*
Angelika Schnieke, *Transgenesis* Jorge Piedrahita, *Transgenesis*

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MAIN SCIENTIFIC PROGRAM

THURSDAY, JANUARY 6, 2011

9:00 – 18:00 IETS Board of Governors Meeting

Friday, January 7, 2011

9:00 – 18:00 IETS Board of Governors Meeting

9:00 – 18:00 Health and Safety Advisory Committee (HASAC) – Research Subcommittee

16:00 – 19:00 Registration

13:00 – 20:00 W2171 Research Committee

SATURDAY, JANUARY 8, 2011

7:00 – 18:00 Registration

8:00 – 17:00 Preconference Symposium – Advances in Bovine Reproduction and Embryo Technology

8:00 – 12:00 Health and Safety Advisory Committee (HASAC) – Regulatory Subcommittee

13:30 – 17:00 IETS Foundation Board of Trustees Meeting

13:00 – 17:00 2nd DABE Workshop: Plasticity, Fate Control, and Therapeutic Safety of Stem Cells

13:00 – 18:00 Poster Setup

13:00 – 18:00 Commercial Exhibit Setup

14:00 – 17:00 Health and Safety Advisory Committee (HASAC) – Food Safety Subcommittee

17:00 – 18:00 IETS Student Group (The Morulas) Meet and Greet

SUNDAY, JANUARY 9, 2011

6:30 – 8:00 Poster Setup

7:30 – 8:30 Past Presidents' Breakfast

7:30 – 8:30 Student Competition Breakfast with Foundation Education Committee

7:00 – 18:00 Registration

8:00 – 17:00 Commercial Exhibition

8:00 – 9:30 IETS Foundation Education Committee

8:45 – 9:00 Opening and Welcome (E. Wolf and C. Barros)

Session I – Follicular Reserve

Session Co-Chair: Pat Lonergan, University College Dublin

Session Co-Chair: Fulvio Gandolfi, Institute Anatomia of Domestic Animals

9:00 *Does Size Matter in Females?*

James J. Ireland, Michigan State University, East Lansing, Michigan, USA

9:45 *In Vitro and In Vivo Regulation of Follicle Formation and Activation in Cattle*

Joanne E. Fortune, Cornell University, Ithaca, New York, USA

10:30 – 11:00 Refreshment Break/Exhibition

IETS Foundation Student Competition Presentations

Session Chair: Kenneth R. Bondioli, Louisiana State University

- 11:00 *Arginine Supplementation In Vitro Increases Porcine Embryo Development and Affects mRNA Transcript*
B. K. Bauer, L. D. Spate, C. N. Murphy, and R. S. Prather (Abstract #1)
- 11:15 *New IVF Transgenesis Strategy in Bovine Using Cell Cycle Inhibitors and Mosaicism Reversion by Cloning*
R. J. Bevacqua, F. Pereyra-Bonnet, R. Olivera, M. I. Hiriart, R. Fernandez-Martín, and D. F. Salamone (Abstract #2)
- 11:30 *Testis-Specific Protein, Y-encoded (TSPY) Copy Number and Expression in Bovine Blastocysts*
C. K. Hamilton, A. Combe, A. Macaulay, F. Ashkar, L. A. Favetta, and W. A. King (Abstract #3)
- 11:45 *Identification and Functional Characterization of Heat Shock Protein 40 in Pig Ovary*
G. Pennarossa, S. Maffei, M. M. Rahman, A. Vanelli, G. Berruti, T. A. L. Brevini, and F. Gandolfi (Abstract #4)
- 12:00 *Production of Transgenic Livestock Using a Lentivirus Expressing Multiple Short Interfering RNAs Targeting Foot and Mouth Disease Virus*
M. Peoples, M. Westhusin, K. Tessanne, and C. Long (Abstract #5)
- 12:15 *Cloning and Expression of Bovine Factor in the Germline Alpha (FIGLA) in Oocytes and Early Embryos: A Potential Target of MicroRNA-212*
S. K. Tripurani, K. B. Lee, G. W. Smith, and J. Yao (Abstract #6)
- 12:30 – 14:00 Lunch Break
- 12:30 – 14:00 IETS Board Luncheon with Affiliate Society Representatives
- 12:30 – 14:00 Health and Safety Advisory Committee (HASAC) - Forms and Certificates Subcommittee

Session II: Growth Factor and Follicular Development

Session Co-Chair: Jeremy Thompson, The University of Adelaide

Session Co-Chair: James Ireland, Michigan State University

- 14:00 *Recent Insights into Oocyte-Follicle Cell Interactions Provide Opportunities for the Development of New Approaches to IVM*
Robert B. Gilchrist, University of Adelaide, Australia
- 14:45 *Follicular Somatic Cell Factors and Follicle Development*
José Buratini, Jr., São Paulo State University, São Paulo, Brazil
- 15:30 – 16:00 Refreshment Break/Exhibition

Session III: Recent Advances in In Vivo and In Vitro Cryopreservation

Session Co-Chair: Andras Dinnyes, Szent Istvan University

Session Co-Chair: Roberto Sartori, Embrapa Genetic Resources and Biotechnology

- 16:00 *Cryopreservation and In Vitro Culture of Caprine Preantral Follicles*
José Ricardo de Figueiredo, LAMOFOPA, State University of Ceará, Brazil

- 16:45 *Cells Under Pressure: How Sublethal Hydrostatic Pressure–Stress Treatment Increases Gametes' and Embryos' Performance*
Csaba Pribenszky, Szent Istvan University, Budapest, Hungary
- 17:30 *Developmental competence of ovine oocytes vitrified at germinal vesicle stage: In vitro fertilization, parthenogenetic activation and somatic cell nuclear transfer (SCNT)*
A. R. Moawad, I. Choi, J. Zhu, and K. H. S. Campbell (Abstract # 79)
- 17:40 *Domestic Cat Kittens Born After Transfer of Cryopreserved Embryos Produced by In Vitro Fertilization of Oocytes with Flow-sorted Sperm*
C. E. Pope*, E. G. Crichton, M. C. Gómez, C. Dumas, B. L. Dresser (Abstract # 85)
- 17:50 *Treatment of Goat Sperm with Catalase to Improve Post-thaw Quality*
R. O. C. Silva, M. Nichi, E. G. A. Perez, P. A. A. Góes, A. Dalmazzo, J. R. C. Gurgel, C. C. Rocha, R. Simões, M. A. Peres, M. E. O. A. Assumpção, R. C. Barnabe, and V. H. Barnabe (Abstract #91)
- 18:00 – 20:00 Health and Safety Advisory Committee (HASAC) Open Meeting
- 20:00 Welcome Reception

MONDAY, JANUARY 10, 2011

- 7:30 – 16:00 Registration
- 8:00 – 18:00 Commercial Exhibits
- 8:00 – 17:00 A/V Library/Speaker Preparation
- 8:30 – 10:30 Poster Session I/Refreshment Break/Exhibition

Session IV: Genetic Engineering of Livestock

Session Co-Chair: Carol Keefer, University of Maryland

Session Co-Chair: Henrik Callesen, Aarhus University

- 10:30 *Perspectives on Transgenic Livestock in Agriculture and Biomedicine – An Update*
Jorge Piedrahita, North Carolina State University, Raleigh, North Carolina, USA

Session V: From Epigenetics to Epigenomics

Session Co-Chair: Rebecca Krisher, University of Illinois

Session Co-Chair: Gabriel Bo, Instituto De Reproduccion Animal Cordoba

- 11:15 *Epigenetic Control of Development and Expression of Quantitative Traits*
Hélène Jammes, INRA, UMR INRA-ENVA, Jouy en Josas, France
- 12:00 *Bioengineering of the Mammary Gland of Livestock: Increased Propeptide Processing of Factor IX in the Milk of Transgenic Pigs by Co-expression of Furin*
J. Zhao, E. Walters, J. Calcaterra, J. Ross, L. Spate, M. Samuel, A. Rieke, C. Murphy, S. Butler, W. Velandar, and R. Prather (Abstract #339)
- 12:10 *Global H3K27me3 is Distinct in the Porcine Epiblast and Trophectoderm and is Potentially Correlated to X-inactivation in Female Embryos*
Y. Gao, V. Hall, and P. Hyttel (Abstract # 100)
- 12:20 *Epigenetic Reprogramming of Porcine Fibroblast Cells induced by Sturgeon's Oocyte Extract*
S. Y. Kim, S. H. Park, M. R. Lee, H. J. Eun, T. S. Kim, S. B. Park, J. G. Yoo, C. S. Park, and J. H. Lee (Abstract # 299)

12:30 – 14:00 IETS Data Retrieval Committee Meeting

12:30 – 14:00 Lunch Break

12:30 – 13:30 Exhibitors Luncheon with the IETS Board

Session VI: Molecular Networks as Sensors and Drivers of Fertility

Session Co-Chair: Christine Wrenzycki, University of Veterinary Medicine

Session Co-Chair: Randall Prather, University of Missouri

14:00 *Next Generation Sequencing Allows Deeper Analysis and Understanding of Genomes and Transcriptomes Including Aspects to Fertility*

Thomas Werner, Genomatix Software Inc., Ann Arbor, Michigan, USA

14:45 *Dynamic Proteome Signatures in Gametes, Embryos and Their Maternal Environment*

Georg J. Arnold, Ludwig Maximilian University of Munich, Munich, Germany

15:30 *Single Equine Embryo Lipid Fingerprinting by Mass Spectrometry*

R. F. Gonçalves, C. R. Ferreira, C. M. B. Orlandi, V. C. Sartori, H. N. Ferreira, F. C. Gozzo, S. A. Saraiva, E. J. Pilau, and M. N. Eberlin (Abstract # 111)

15:40 *Laser capture microdissection for gene expression analysis of inner cell mass and trophoblast from bovine blastocysts*

M. Filliers, W. de Spiegelaere, L. J. Peelman, K. Goossens, C. Burvenich, L. Vandaele, P. Cornillie, and A. Van Soom (Abstract # 186)

15:50 *Spermatozoal Protein Markers for Angus Bull Fertility*

E. Memili, X. Wang, A. Kaya (Abstract 195)

16:00 – 16:30 Refreshment Break/Exhibition

16:30 – 17:00 IETS Pioneer Award Presentation

17:00 – 18:00 IETS Annual Business Meeting

18:00 – 20:00 Companion Animal, Non-Domestic and Endangered Species (CANDES) Open Meeting

18:00 – 19:00 Domestic Animal Biomedical Embryology Committee (DABE) Open Meeting

TUESDAY, JANUARY 11, 2011

7:00 – 8:30 Organizational Meeting of the IETS Board of Governors

8:00 – 15:00 Registration

8:00 – 13:30 Commercial Exhibits

8:00 – 17:00 A/V Library/Speaker Preparation

8:30 – 10:30 Poster Session II/Refreshment Break/Exhibition

Practitioner's Forum

Session Chair: Rueben J. Mapletoft, University of Saskatchewan

10:30 *Practitioners' Forum: Recent Advances in Superovulation and Embryo Production*

Speakers: Gabriel A. Bo, Institute of Animal Reproduction Cordoba (IRAC) and University of Villa Maria, Argentina: Simplified superovulation protocols using GnRH to control follicular development and one or two injections of FSH for superstimulation

Pietro S. Baruselli and Manoel Sa Filho, University of São Paulo, Brazil: Use of sexed semen in superovulated *Bos indicus* donors

Richard Remillard, Trans Ova Genetics, USA: Use of sexed semen in superovulated
Bos taurus donors and in-vitro embryo production

12:30 – 13:30 Lunch Break

12:00 – 13:30 Organizational Lunch Meeting of the IETS Foundation

13:30 – 17:00 Commercial Exhibit and Poster Teardown

13:30 – 14:00 IETS Foundation Student Competition Awards, CANDES and HASAC Updates

14:00 – 14:45 IETS Distinguished Service Award Presentation

Session VII: Keynote Address

Session Chair: Eckhard Wolf, University Munich

15:00 *Nuclear Architecture in Developmental Biology and Cell Specialization*

Thomas Cremer, Ludwig Maximilian University of Munich, Munich, Germany

15:45 – 16:00 Closing Ceremony

16:30 – 17:30 9th IETS Annual Running Competition

19:00 Closing Party

WEDNESDAY, JANUARY 12, 2011

7:30 – 11:00 Registration

8:00 – 17:00 Postconference Workshop: International Regulations and Requirements for the Import/Export of Reproductive Biomaterials: Embryos, Semen, and Tissue

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POSTER SESSIONS

Location

Posters are located in the Palms Ballroom of the Wyndham Orlando Resort. (See map on page ###.)

Poster Numbers

Posters are identified by the number corresponding to their abstract number in *Reproduction, Fertility and Development* 2011; 23 (1). Numbering begins at 1 and ends at 339.

Setup

Posters can be put up from 13:00 to 18:00 Saturday, January 8, 2011, and 6:30 to 8:00 Sunday, January 9, 2011. All posters must remain up throughout the meeting. Authors of posters that are not put up by 8:00 on Sunday will be reported to the IETS president for possible disciplinary action.

Poster Session I

Presentations by authors of odd numbered abstracts (i.e., 7, 9, 11) in *Reproduction, Fertility and Development* 2011; 23 (1) and the Student Competition finalist poster presentations will take place Monday, January 10, 2011, from 8:30 to 10:30.

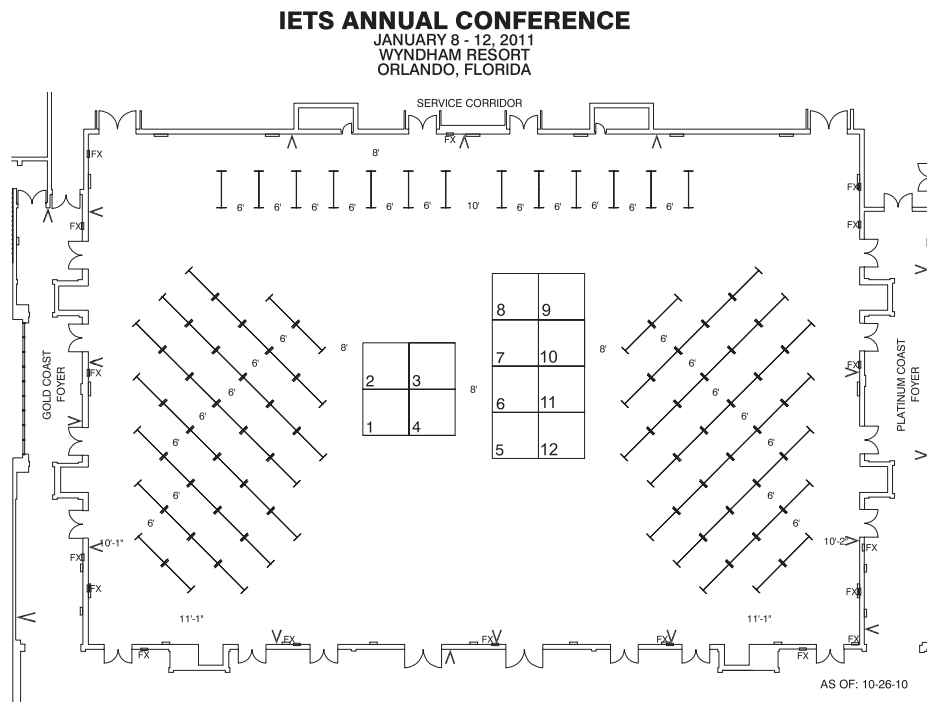
Poster Session II

Presentations by authors of even numbered abstracts (i.e., 8, 10, 12) in *Reproduction, Fertility and Development* 2011; 23 (1) will take place Tuesday, January 11, 2011, from 8:30 to 10:30.

Teardown

Poster teardown must take place from 13:30 to 17:00 Tuesday afternoon (January 11, 2011). Posters that are not taken down by 17:00 on Tuesday will be taken down and thrown away.

POSTER AND EXHIBIT ROOM LAYOUT



POSTER SESSION ORDER BY TOPIC

Poster Number = Abstract number in *Reproduction, Fertility and Development* 2011; 23 (1)

STUDENT COMPETITION FINALISTS

- 1 ARGININE SUPPLEMENTATION *IN VITRO* INCREASES PORCINE EMBRYO DEVELOPMENT AND AFFECTS mRNA TRANSCRIPT EXPRESSION
B. K. Bauer, L. D. Spate, C. N. Murphy, and R. S. Prather
- 2 NEW IVF TRANSGENESIS STRATEGY IN BOVINE USING CELL CYCLE INHIBITORS AND MOSAICISM REVERSION BY CLONING
R. J. Bevacqua, F. Pereyra-Bonnet, R. Olivera, M. I. Hiriart, R. Fernandez-Martín, and D. F. Salamone
- 3 TESTIS-SPECIFIC PROTEIN, Y-ENCODED (TSPY) COPY NUMBER AND EXPRESSION IN BOVINE BLASTOCYSTS
C. K. Hamilton, A. Combe, A. Macaulay, F. Ashkar, L. A. Favetta, and W. A. King
- 4 IDENTIFICATION AND FUNCTIONAL CHARACTERIZATION OF HEAT SHOCK PROTEIN 40 IN PIG OVARY
G. Pennarossa, S. Maffei, M. M. Rahman, A. Vanelli, G. Berruti, T. A. L. Brevini, and F. Gandolfi
- 5 PRODUCTION OF TRANSGENIC LIVESTOCK USING A LENTIVIRUS EXPRESSING MULTIPLE SHORT INTERFERING RNAs TARGETING FOOT AND MOUTH DISEASE VIRUS
M. Peoples, M. Westhusin, K. Tessanne, and C. Long
- 6 CLONING AND EXPRESSION OF BOVINE FACTOR IN THE GERMLINE ALPHA (FIGLA) IN OOCYTES AND EARLY EMBRYOS: A POTENTIAL TARGET OF MICRORNA-212.
S. K. Tripurani, K. B. Lee, G. W. Smith, and J. Yao

ARTIFICIAL INSEMINATION

- 7 ESTRUS LENGTH AND INTENSITY IN *BOS TAURUS* (HOLSTEIN) VERSUS *BOS INDICUS* (NELORE) NONLACTATING COWS
M. R. Bastos, M. A. P. Meschiatti, R. S. Surjus, A. B. Prata, A. P. Lemes, M. M. Guardieiro, F. A. P. Santos, and R. Sartori
- 8 THE USE OF ANNEXIN V MAGNETIC-ACTIVATED CELL SORTING TO SEPARATE APOPTOTIC SPERM FROM THE EJACULATE OF STALLIONS
M. A. Coutinho da Silva, C. R. F. Pinto, J. M. Young, and K. Cole
- 9 EVALUATION OF FERTILITY TRAITS OF HOLSTEIN CATTLE IN ARGENTINA
F. A. Di Croce, A. M. Saxton, D. Casanova, and F. N. Schrick
- 10 *IN VITRO* PROGESTERONE RELEASE KINETICS: A COMPARATIVE STUDY OF DIFFERENT INTRAVAGINAL DEVICES USED IN CATTLE
G. C. Gomes, A. Kehrle, M. Maturana Filho, C. V. F. Caetano, J. R. V. Pimentel, P. H. P. Miguez, and E. H. Madureira
- 11 PREGNANCY RATES IN ESTONIAN HOLSTEIN HEIFERS AFTER INSEMINATION WITH SEXED SPERM
J. Kurykin, M. Jalakas, L. Majas, T. Kaart, and Ü. Jaakma
- 12 INDUCTION OF OVARIAN ACTIVITY IN THE MANED WOLF (*CHRYSOCYON BRACHYURUS*) USING A GnRH-AGONIST
A. E. Johnson, L. R. Padilla, K. Hope, D. E. Wildt, and N. Songsasen

- 13 THE RELATIONSHIP BETWEEN EARLIER POSTPARTUM CYCLICITY AND SUBSEQUENT REPRODUCTIVE PERFORMANCE IN DAIRY COWS: A FIELD TRIAL
I. H. Kim, H. C. Lee, and H. G. Kang
- 14 EFFECT OF PORCINE SEMINAL PLASMA AND EGG YOLK ON CHEMOTAXIS AND PHAGOCYTOSIS OF NEUTROPHILS DERIVED FROM PERIPHERAL BLOOD OF PIGS AND COWS
J.-C. Li and H. Funahashi
- 15 *IN VIVO* PROGESTERONE RELEASE KINETICS: A COMPARATIVE STUDY OF DIFFERENT INTRAVAGINAL DEVICES USED IN CATTLE
M. Maturana Filho, G. C. Gomes, C. V. F. Caetano, A. Kehrle, P. H. P. Miguez, J. R. V. Pimentel, and E. H. Madureira
- 16 FERTILITY RATE OBTAINED WITH A NEW INTRAVAGINAL PROGESTERONE RELEASING DEVICE DICO IN SHEEP
C. García-Pintos, P. C. dos Santos-Neto, and A. Menchaca
- 17 PREGNANCY RATE OBTAINED WITH THE REUTILIZATION OF INTRAVAGINAL DEVICE DICO AFTER 6 DAYS OF TREATMENT FOR ESTRUS SYNCHRONIZATION IN SHEEP
P. C. dos Santos-Neto, C. García-Pintos, and A. Menchaca
- 18 EFFECTS OF SKIM MILK ON THE QUALITY AND FERTILITY OF BOAR SEMEN FOLLOWING LIQUID PRESERVATION AT 5°C AND 15°C
Z. Namula, R. Kodama, Y. Kaedei, F. Tanihara, V. L. Vien, and T. Otoi
- 19 FACTORS AFFECTING PREGNANCY RATE AFTER ARTIFICIAL INSEMINATION WITH EQUINE SEMEN: PRODUCTION OF THE FIRST FOAL USING FROZEN SEMEN IN KOREA
Y. S. Park, Y. G. Cho, K. H. Cho, and G. J. Cho
- 20 FACTORS THAT AFFECT PURITY AND YIELD OF BOVINE SEX-SORTED SPERM
Y. Sakamoto, M. Ueda, S. Toda, and H. Kimura
- 21 THE INJECTION OF CORTISOL TO UTERUS INCREASES THE IMPLANTATION RATE AND LITTER SIZE IN PIG ARTIFICIAL INSEMINATION USING CYROPRESERVED SPERMATOZOA
M. Shimada and T. Okazaki
- 22 INFLUENCE OF SEASONALITY ON OVULATORY FOLLICULAR WAVE DYNAMIC IN LONG PROTOCOLS IN SANTA INÊS SHEEP IN THE TROPICS
M. E. F. Oliveira, H. Ayres, L. G. Oliveira, P. P. M. Teixeira, S. D. Bicudo, J. F. Fonseca, and W. R. R. Vicente
- 23 EFFECTS OF THE NUMBER OF SERVICES ON FERTILITY IN DAIRY COWS
M. Yamaguchi, M. Tanisawa, H. Koyama, S. Takahashi, and O. Dochi
- 24 EFFECT OF CULTURE OF SEMEN IN A LOW PRESSURE CONDITION AT ROOM TEMPERATURE ON VIABILITY AND CAPACITATION STATUS OF BOAR SPERM
K. Yamashita, S. Ishida, and H. Funahashi
- 25 EFFECT OF REPRODUCTIVE TRACT SIZE ON CONCEPTION RATES IN LACTATING DAIRY COWS UTILIZING A REPRODUCTIVE TRACT SCORING SYSTEM
C. Young, F. A. Di Croce, D. Roper, J. Harris, N. Rohrbach, J. Wilkerson, and F. N. Schrick

CLONING/NUCLEAR TRANSFER

- 26 EFFECT OF TREATMENT OF BOVINE DONOR CELLS WITH MOUSE EMBRYONIC STEM CELL EXTRACT ON THE DEVELOPMENT OF EMBRYOS AFTER NUCLEAR TRANSFER
S. Akagi, E. Mizutani, Y. Inaba, M. Kaneda, T. Somfai, S. Haraguchi, S. Watanabe, Y. Hashiyada, and K. Matsukawa
- 27 CLONING OF ADULT PIGS USING SCRIPTAID TREATMENT AND PEOVULATORY EMBRYO TRANSFER
M. Albornoz, C. Colato, N. El-Beyrouthi, F. Mellano, A. Mellano, P. H. Mellano, M. L. Mellano, M. A. Mellano, J. C. Mellano, H. Baldassarre, and V. Bordignon
- 28 GENERATION OF REACTIVE OXYGEN SPECIES IN BOVINE CULTURED SOMATIC CELLS AND SOMATIC CELL NUCLEAR TRANSFER EMBRYOS DURING MICROMANIPULATION PROCEDURES AND EARLY *IN VITRO* DEVELOPMENT
H. K. Bae, J. Y. Kim, I. S. Hwang, C. K. Park, B. K. Yang, and H. T. Cheong
- 29 PROTEOMIC ANALYSIS OF CLONED TERM PLACENTA DERIVED FROM SOMATIC CELL NUCLEAR TRANSFER CATS
J. I. Bang, D. W. Bae, Y. S. Kwon, S. J. Cho, G. K. Deb, A. N. Ha, and I. K. Kong
- 30 SCRIPTAID TREATMENT IMPROVES POST-IMPLANTATION DEVELOPMENT OF SHEEP CLONED EMBRYOS
V. Bordignon, M. Albornoz, C. Colato, N. El-Beyrouthi, J. I. Mellano, A. Meltsas, F. Mellano, P. H. Mellano, M. L. Mellano, M. A. Mellano, J. C. Mellano, and H. Baldassarre
- 31 DEVELOPMENT AND APOPTOSIS IN BOVINE CLONED EMBRYOS RECONSTRUCTED WITH OOCYTES COLLECTED BY REPEATED OVUM PICKUP SESSIONS OR FROM SLAUGHTERED COW OVARIES
L. S. A. Camargo, M. M. Pereira, C. C. R. Quintao, J. N. S. Sales, L. T. Iguma, R. V. Serapiao, and J. H. M. Viana
- 32 A CLONED FOAL PRODUCED USING OOCYTES RECOVERED BY TRANSVAGINAL ASPIRATION OF IMMATURE FOLLICLES
Y. H. Choi, J. D. Norris, I. C. Velez, C. C. Jacobson, D. L. Hartman, and K. Hinrichs
- 33 PRODUCTION OF CLONED BOER GOATS AND DORPER SHEEP IN ARGENTINA
C. Colato, M. Albornoz, M. L. Mellano, P. H. Mellano, J. I. Mellano, A. Meltsas, M. A. Mellano, J. C. Mellano, V. Bordignon, and H. Baldassarre
- 34 EVALUATION OF DIFFERENT SEQUENTIAL CULTURE SYSTEMS ON THE DEVELOPMENT AND QUALITY OF BOVINE EMBRYOS GENERATED BY SOMATIC CELL NUCLEAR TRANSFER
R. F. Felmer, M. E. Arias, J. L. Riveros, G. A. Munoz, and J. H. Rio
- 35 EFFECTIVENESS OF MICROWELL-BASED *IN VITRO* CULTURE SYSTEMS FOR BOVINE ZONA-FREE CLONED EMBRYOS
C. Feltrin, M. Machado, L. M. V. Queiroz, M. A. S. Peixer, P. F. Malard, G. M. Santana, M. Bertolini, M. Wheeler, and J. L. Rodrigues
- 36 CHANGES IN PLASMA CONCENTRATIONS OF PROGESTERONE AND ESTROGENS DURING GESTATION IN COWS WITH STILLBORN SOMATIC CELL CLONED CALVES
M. Hirako, H. Takahashi, M. Aoki, H. Ishizaki, Y. Kariya, Y. Hanafusa, M. Kubo, M. Suto, N. Adachi, and S. Akagi

- 37 LIMITATION OF BOVINE OOPLOSM IN REPROGRAMMING OF PORCINE SOMATIC CELLS
O. Østrup, F. Strejcek, I. Petrovicova, M. Morovic, N. Laurincikova, A. Lucas-Hahn, B. Petersen, H. Niemann, J. Laurincik, and P. Hyttel
- 38 DNA METHYLATION IN PORCINE PREIMPLANTATION EMBRYOS DEVELOPED *IN VIVO* AND PRODUCED BY *IN VITRO* FERTILIZATION, PARTHENOGENETIC ACTIVATION AND SOMATIC CELL NUCLEAR TRANSFER
R. S. Deshmukh, O. Oestrup, E. Oestrup, M. Vejlsted, H. Niemann, A. Lucas-Hahn, B. Petersen, J. Li, H. Callesen, and P. Hyttel
- 39 *IN VITRO* DEVELOPMENT OF CANINE EMBRYOS PRODUCED BY INTERSPECIES SOMATIC CELL NUCLEAR TRANSFER USING ENUCLEATED BOVINE OOCYTES
Y. Kaedei, A. Fujiwara, F. Tanihara, Z. Namula, V. L. Vien, and T. Otoi
- 40 VARIOUS DNA METHYLATION LEVELS OF IMPRINTED GENES IN CLONED COWS FROM THE SAME DONOR CELLS
M. Kaneda, S. Watanabe, S. Akagi, T. Somfai, S. Haraguchi, M. Hirako, M. Geshi, and T. Nagai
- 41 DEVELOPMENT OF SOMATIC CELL NUCLEAR TRANSFERRED RAT EMBRYOS TO THE BLASTOCYST BY A HISTONE DEACETYLASE INHIBITOR, TRICHOSTATIN A
N. Kashiwazaki, N. Nakajima, K. Fujimaki, K. Syudo, and J. Ito
- 42 LARGE-SCALE PRODUCTION OF CLONED TRANSGENIC PIGS: EFFICIENCY AND SIDE EFFECTS
M. Kurome, B. Kessler, N. Klymiuk, A. Wuensch, V. Zakhartchenko, H. Nagashima, and E. Wolf
- 43 SHORT- AND LONG-LASTING EFFECTS OF TRICHOSTATIN A TREATMENT OF SCNT EMBRYOS IN CATTLE
I. Lagutina, R. Duchi, S. Colleoni, G. Lazzari, and C. Galli
- 44 *IN VITRO* DEVELOPMENT OF INTERSPECIES NUCLEAR TRANSFER EMBRYOS GENERATED WITH BOVINE OOCYTES AND EQUINE SKIN FIBROBLASTS
J. Lee, J. Park, Y. Chun, W. Lee, and K. Song
- 45 *IN VITRO* DEVELOPMENT OF BOVINE TRANSGENIC NUCLEAR TRANSFER EMBRYOS IN SERUM-FREE AND SERUM-SUPPLEMENTED MEDIA
J. Y. Lee, S. G. Lee, E. J. Jung, S. H. Jeong, C. J. Yang, Y. W. Jeong, S. H. Hyun, Y. W. Kim, T. Shin, E.-B. Jeung, and W. S. Hwang
- 46 THREE STAGES ESTABLISHMENT OF *IN VITRO* MATURATION OF PORCINE OOCYTES USED AS RECIPIENT CYTOPLASTS FOR SOMATIC CELL NUCLEAR TRANSFER
M. R. Lee, S. H. Park, T. S. Kim, S. Y. Kim, H. J. Eun, C. S. Park, and J. H. Lee
- 47 PHYSIOLOGICAL STATUS OF MALE AND FEMALE MINIATURE PIGS CLONED WITH MESENCHYMAL STEM CELLS
S. L. Lee, G. H. Maeng, W. J. Lee, R. H. Chon, and G. J. Rho
- 48 DEVELOPMENTAL COMPETENCE OF CLONED OR PARTHENOGENETICALLY ACTIVATED PORCINE EMBRYOS: EFFECT OF DIAMETER OF PREPUBERTAL GILT OOCYTES
J. Li, J. Adamsen, R. Li, H. Pedersen, Y. Liu, S. Purup, G. Vajta, and H. Callesen
- 49 IMPROVED PORCINE CLONING EFFICIENCY WITH CELLS CULTURED FOR SEVERAL GENERATIONS AFTER A SINGLE TREATMENT WITH XENOPUS EGG EXTRACT
Y. Liu, O. Østrup, J. Li, G. Vajta, P. M. Kragh, S. Purup, R. Li, and H. Callesen

- 50 FIRST EQUINE CLONE BORN IN ARGENTINA BY SOMATIC CELL NUCLEAR TRANSFER FROM A POLO ARGENTINO MARE
M. Miragaya, M. Revora, F. Rigali, C. Herrera, L. Viviani, C. Quintans, S. Pascualini, and L. Losinno
- 51 SCRIPTAID AND MG132 IMPROVE DEVELOPMENT OF PORCINE EMBRYOS RECONSTRUCTED BY SOMATIC CELL NUCLEAR TRANSFER
J. Mao, L. Tracy, J. Zhao, K. M. Whitworth, L. Spate, E. M. Walters, and R. S. Prather
- 52 THE EFFECTS OF DONOR CELL CYCLE AND THE TIMING OF OOCYTE ACTIVATION ON DEVELOPMENT OF BOVINE NUCLEAR TRANSFERRED EMBRYOS *IN VIVO*
K. Matsukawa, S. Akagi, K. Fukunari, Y. Hosokawa, C. Yonezawa, S. Watanebe, and S. Takahashi
- 53 IMPACTS OF USING PROCAINE AS A DNA-DEMETHYLATING AGENT IN *IN VITRO* CULTURE OF BOVINE CELLS
V. A. Michalczechen-Lacerda, F. C. Rodrigues, R. V. de Sousa, R. Rumpf and M. M. Franco
- 54 THE EFFECT OF TREATMENT OF BOVINE NUCLEAR TRANSFER EMBRYOS WITH VALPROIC ACID ON THEIR SUBSEQUENT *IN VITRO* DEVELOPMENT
E. Mizutani, S. Akagi, M. Kaneda, T. Somfai, S. Watanabe, M. Geshi, and T. Nagai
- 55 CONSTRUCTION AND *IN VITRO* DEVELOPMENT OF FOLLISTATIN TRANSGENIC PORCINE EMBRYO BY SOMATIC CELL NUCLEAR TRANSFER
Y. S. Mu, D. D. Jiang, Y. J. Huan, J. Zhu, H. Li, and Z. H. Liu
- 56 ESTABLISHMENT OF TRANSGENIC RED FLUORESCENCE PROTEIN (RFP) CLONE DOGS THROUGH A STABLE TRANSMISSION OF RFP GENE TO NEXT GENERATION
H. J. Oh, J. E. Park, M. J. Kim, G. A. Kim, E. J. Park, S. G. Hong, G. Jang, and B. C. Lee
- 57 GENE EXPRESSION PATTERN OF MINIATURE PIG SOMATIC CELL NUCLEAR TRANSFER EMBRYOS TREATED WITH THE HISTONE DEACETYLASE INHIBITOR SCRIPTAID
C. H. Park, S. G. Lee, H. J. Lee, T. K. Jung, Y. H. Jeong, Y. W. Jeong, S. H. Hyun, Y. W. Kim, T. Shin, E.-B. Jeung, and W. S. Hwang
- 58 ISOLATION OF BOVINE TROPHOBLAST AND ITS REPROGRAMMING BY NUCLEAR TRANSFER
I. M. Saadeldin, B. H. Kim, B. Roibas da Torre, O. J. Koo, G. Jang, and B. C. Lee
- 59 SYNCHRONIZATION OF CELL CYCLE STAGE OF BUFFALO (*BUBALUS BUBALIS*) FETAL FIBROBLAST CELLS BY DIFFERENT TREATMENTS
N. L. Selokar, A. George, A. P. Saha, R. Sharma, M. Muzaffar, P. Palta, M. S. Chauhan, R. S. Manik, and S. K. Singla
- 60 EFFECT OF CYTOPLASMIC VOLUME ON DEVELOPMENTAL COMPETENCE OF HAND-GUIDED CLONED BUFFALO (*BUBALUS BUBALIS*) EMBRYOS
S. K. Panda, A. George, A. P. Saha, R. Sharma, N. M. Kamble, R. S. Manik, M. S. Chauhan, P. Palta, and S. K. Singla
- 61 EFFECT OF ROOM TEMPERATURE HOLDING PROCEDURE ON ABILITY OF OOCYTES TO MATURE AND DEVELOP *IN VITRO* AFTER EQUINE SOMATIC CELL NUCLEAR TRANSFER
K. Song, J. Lee, J. Park, W. Lee, Y. Chun, J. Lee, and S. Yeon

- 62 COMPARATIVE PROTEOMIC ANALYSIS OF LIVER MITOCHONDRIA DERIVED FROM DECEASED NEWBORN CLONED CALVES AND ADULT CLONES BY TWO-DIMENSIONAL DIFFERENTIAL GEL ELECTROPHORESIS
K. Takeda, M. Tasai, S. Akagi, S. Watanabe, M. Oe, K. Chikuni, M. Ohnishi-Kameyama, Y. Nakamura, T. Tagami, H. Hanada, and K. Nirasawa
- 63 OOCYTE GENOME CLONING USED IN TRANSGENIC BOVINE EMBRYO PRODUCTION
G. Vichera, R. Olivera, and D. Salamone
- 64 MACROGLOSSIA IN CLONED PIGLETS IS ASSOCIATED WITH HYPOMETHYLATION AT THE KCNQ-OT1 CpG ISLAND
C. Li, C. O’Gorman, R. S. Prather, J. A. Green, and K. D. Wells
- 65 SCRIPTAID CORRECTS GENE EXPRESSION OF A FEW ABERRANTLY REPROGRAMMED TRANSCRIPTS IN NUCLEAR TRANSFER PIG BLASTOCYST STAGE EMBRYOS
K. M. Whitworth, J. Zhao, L. D. Spate, and R. S. Prather
- 66 DNA METHYLOME ANALYSIS IN NUCLEAR TRANSFER DONOR CELLS AND ITS RELATIONSHIP TO CLONING EFFICIENCY IN SWINE
J. J. Whyte, S. C. Isom, W. G. Spollen, S. M. Blake, E. M. Walters, and R. S. Prather
- 67 PIG OOCYTES WITH A LARGE PERIVITELLINE SPACE MATURED *IN VITRO* HAVE GREATER DEVELOPMENTAL COMPETENCE AFTER PARTHENOGENESIS AND SOMATIC CELL NUCLEAR TRANSFER
J. You, N. Kim, S. Kang, and E. Lee

CRYOPRESERVATION/CRYOBIOLOGY

- 68 OSMOTIC RESPONSES OF EQUINE EMBRYOS WITH AND WITHOUT CAPSULES TO CRYOPROTECTANTS
J. P. Barfield, S. P. Leibo, P. M. McCue, and G. E. Seidel Jr.
- 69 QUALITY OF *IN VITRO* PRODUCED AND CRYOPRESERVED PORCINE EMBRYOS ASSESSED BY CELL NUMBER, TUNEL-POSITIVE NUCLEI, AND CASPASE-3 ACTIVITY
M. Bryla, M. Trzcinska, and B. Gajda
- 70 REFREEZING POST-THAWED GOAT SEMEN
D. B. Carwell, B. R. Scott, G. T. Gentry Jr., K. R. Bondioli, and R. A. Godke
- 71 WILL DEHYDRATION BY EXPOSURE TO SUCROSE IMPROVE POST-VITRIFICATION SURVIVAL OF MURINE EMBRYOS VITRIFIED BY THE OPEN PULLED STRAW METHOD?
M. El-Gayar, J. Reischl, M. Gaulty, and W. Holtz
- 72 SUPERIOR PREGNANCY RATES WITH THE TRANSFER OF OPEN PULLED STRAW-VITRIFIED VERSUS CONVENTIONALLY CRYOPRESERVED EMBRYOS IN GOATS
M. El-Gayar, A. N. Al Yacoub, M. Gaulty, and W. Holtz
- 73 LIPID CONTENT AND CRYOTOLERANCE OF PORCINE EMBRYOS CULTURED WITH PHENAZINE ETHOSULFATE
B. Gajda, M. Romek, I. Grad, E. Krzysztofowicz, M. Bryla, and Z. Smorag
- 74 MECHANICAL DELIPIDATION IMPROVES CRYOSURVIVAL AND *IN VITRO* DEVELOPMENT OF VITRIFIED CAT OOCYTES
J. Galiguis, M. C. Gómez, C. E. Pope, B. L. Dresser, and S. P. Leibo

- 75 INFLUENCE OF CRYOPRESERVATION ON THE SUSCEPTIBILITY OF GOAT SPERM AGAINST DIFFERENT REACTIVE OXYGEN SPECIES
P. A. A. Góes, M. Nichi, R. O. C. Silva, E. G. A. Perez, A. Dalmazzo, J. R. C. Gurgel, C. C. Rocha, R. Simões, M. A. Peres, M. E. O. A. Assumpção, R. C. Barnabe, and V. H. Barnabe
- 76 EFFECT OF CULTURE METHOD ON THE mRNA EXPRESSION BEFORE AND AFTER CRYOPRESERVATION IN BOVINE BLASTOCYSTS
A. Kuzmany, V. Havlicek, C. Wrenzycki, S. Wilkening, G. Brem, and U. Besenfelder
- 77 PREGNANCY RATES AFTER VITRIFICATION OF FRESH AND COOLED EQUINE EMBRYOS USING THE CRYOTOP METHOD
C. Baca Castex, G. Dalvit, M. Miragaya, A. Alonso, M. Pinto, V. Etcharren, C. Castaneira, and L. Losinno
- 78 EFFECT OF EXTENDER AND STORAGE PERIOD ON THE SOUTH AFRICAN INDIGENOUS KOLBROEK BOAR SPERM CELL MOTILITY RATES FOLLOWING ANALYSIS BY COMPUTER-ASSISTED SPERM ANALYSIS
M. B. Masenya, M. L. Mphaphathi, P. H. Munyai, I. Egerszegi, D. O. Umesiobi, A. Dinnyes, and T. L. Nedambale
- 79 DEVELOPMENTAL COMPETENCE OF OVINE OOCYTES VITRIFIED AT GERMINAL VESICLE STAGE: *IN VITRO* FERTILIZATION, PARTHENOGENETIC ACTIVATION, AND SOMATIC CELL NUCLEAR TRANSFER
A. R. Moawad, I. Choi, J. Zhu, and K. H. S. Campbell
- 80 TREATING BOAR SPERM WITH CHOLESTEROL IMPROVES CRYOSURVIVAL
E. A. Moraes, C. A. A. Torres, J. K. Graham, P. L. Romualdo, and P. S. Lopes
- 81 HIGH THROUGHPUT VITRIFICATION OF *IN VIVO* FERTILIZED AND *IN VITRO* CULTURED PORCINE EMBRYOS
C. N. Murphy, L. D. Spate, B. K. Bauer, and R. S. Prather
- 82 CRYOPRESERVATION OF BOAR EPIDIDYMAL SPERMATOZOA; ADDITION OF SEMINAL PLASMA TO THAWING SOLUTION IMPROVES REPRODUCTIVE PERFORMANCE BY ARTIFICIAL INSEMINATION
T. Okazaki, T. Akiyoshi, M. Kan, H. Teshima, and M. Shimada
- 83 EFFECTS OF CYTOCHALASIN B AND VITRIFICATION PROCEDURE ON SURVIVAL AND *IN VITRO* MATURATION OF SWAMP BUFFALO OOCYTES CRYOPRESERVED AT THE IMMATURE STAGE
Y. Y. Liang, T. Phermthai, T. Nagai, T. Somfai, and R. Parnpai
- 84 COMPARISON BETWEEN *IN VIVO* AND *IN VITRO* PRODUCED EMBRYOS WITH FORSKOLIN AFTER VITRIFICATION
D. M. Paschoal, M. J. Sudano, T. S. Rascado, L. C. O. Magalhães, L. F. Crocomo, J. F. Lima-Neto, A. Martins Júnior, and F. C. Landim-Alvarenga
- 85 DOMESTIC CAT KITTENS BORN AFTER TRANSFER OF CRYOPRESERVED EMBRYOS PRODUCED BY *IN VITRO* FERTILIZATION OF OOCYTES WITH FLOW-SORTED SPERM
C. E. Pope, E. G. Crichton, M. C. Gómez, C. Dumas, and B. L. Dresser
- 86 EFFECT OF CRYOPROTECTANT EXPOSURE, VITRIFICATION, AND WARMING TIME OF BOVINE CUMULUS OOCYTE COMPLEXES ON *IN VITRO* FERTILIZATION AND EMBRYONIC DEVELOPMENT
J. R. Prentice, J. Singh, R. J. Mapletoft, and M. Anzar

- 87 EFFECT OF CRYOPROTECTANT CONCENTRATION IN THE VITRIFICATION SOLUTION ON THE ZONA PELLUCIDA HARDENING AND SPERMATOZOA PENETRATION OF BOVINE OOCYTES
A. Quiñones Martorello, G. Rios, A. Cano, and R. H. Alberio
- 88 EFFECT OF VITRIFICATION PROCEDURE ON SURVIVAL RATE OF BOVINE EMBRYOS PRODUCED *IN VITRO*
E. Y. Herrera, C. de Frutos, R. Laguna-Barraza, A. Gutierrez-Adan, and D. Rizos
- 89 SURVIVAL OF CAT EPIDIDYMAL SPERM AFTER TEMPORARY COOL STORAGE OR CRYOPRESERVATION IN DEFINED EXTENDERS
J. R. Saenz, C. Dumas, B. L. Dresser, M. C. Gómez, R. A. Godke, and C. E. Pope
- 90 OPEN PULLED STRAW VITRIFICATION OF *IN VITRO* PORCINE BLASTOCYTS IN A CHEMICALLY DEFINED MEDIUM
J. Sanchez-Osorio, C. Cuello, J. Gomis, C. Maside, M. A. Gil, I. Parrilla, J. Roca, J. M. Vazquez, and E. A. Martinez
- 91 TREATMENT OF GOAT SPERM WITH CATALASE TO IMPROVE POST-THAW QUALITY
R. O. C. Silva, M. Nichi, E. G. A. Perez, P. A. A. Góes, A. Dalmazzo, J. R. C. Gurgel, C. C. Rocha, R. Simões, M. A. Peres, M. E. O. A. Assumpção, R. C. Barnabe, and V. H. Barnabe
- 92 EFFECT OF LOW-DENSITY LIPOPROTEIN ON THE QUALITY OF CRYOPRESERVED RAM SEMEN
P. P. N. Snoeck, M. C. Silva, L. C. O. Moura, M. M. Neves, and M. Henry
- 93 EFFECT OF ANTIOXIDANTS SUPPLEMENTATION ON THE QUALITY OF CRYOPRESERVED SPERM OF DOGS
C. A. B. Sobrinho, M. Nichi, P. A. A. Góes, A. Dalmazzo, S. E. Crusco, E. G. A. Perez, P. I. M. Pacheco Filho, P. B. S. Cardoso, M. P. Rodrigues, R. C. Barnabe, and V. H. Barnabe
- 94 EFFECT OF OVARIAN SIZE ON THE VIABILITY OF CRYOPRESERVED SYRIAN HAMSTER OVARIES
O. Suzuki, M. Koura, Y. Noguchi, K. Uchio-Yamada, and J. Matsuda
- 95 THE EFFECT OF FREEZING TECHNIQUES ON QUALITY OF CAT TESTICULAR SPERM
M. Techakumphu, S. Buarpung, and T. Tharasanit
- 96 THE EFFECT OF CHEMICAL DELIPIDATION ON CRYOPRESERVABILITY OF CAT EMBRYOS
T. Tharasanit and M. Techakumphu
- 97 IMPROVED CRYOPRESERVATION OF DOMESTIC CAT SPERMATOZOA IN A SOY LECITHIN-BASED EXTENDER
M. M. Vick, H. L. Bateman, and W. F. Swanson

DEVELOPMENTAL BIOLOGY

- 98 THE FETAL AND POSTNATAL EFFECTS OF PERICONCEPTIONAL HYPERGLYCEMIA USING A RABBIT MODEL
R. Brat, A. Rolland, R. Thieme, M. Dahirel, G. Boyer, A. Navarette-Santos, B. Fischer, P. Boileau, and P. Chavatte-Palmer
- 99 EFFICIENCY OF CATIONIC LIPID-BASED DNA TRANSFECTION OF BOVINE IVF-DERIVED ZONA-FREE BLASTOCYSTS
C. Feltrin, I. S. Carneiro, J. B. S. Neto, R. R. Freire, D. B. Rios, T. M. M. Nobre, J. B. Barreto, L. R. Bertolini, and M. Bertolini

- 100 GLOBAL H3K27^{me3} IS DISTINCT IN THE PORCINE EPIBLAST AND TROPHECTODERM AND IS POTENTIALLY CORRELATED TO X-INACTIVATION IN FEMALE EMBRYOS
Y. Gao, V. Hall, and P. Hyttel
- 101 EXTERNAL PARAMETRIC INDICATORS OF *IN VITRO* DEVELOPMENTALLY COMPETENT WATER BUFFALO OOCYTES
D. Hufana-Duran, P. G. Duran, E. P. Atabay, Y. Kanai, Y. Takahashi, and L. C. Cruz
- 102 PROTEOMIC ANALYSIS OF CONDITIONED MEDIUM SUPPLEMENTED WITH PORCINE FOLLICULAR FLUID
S. Hwang, K. B. Oh, H.-C. Lee, B.-C. Yang, D. Lim, G.-S. Im, J.-S. Woo, and S.-B. Park
- 103 TRANSDUCTION PATHWAYS RELATED TO GLUCOSE METABOLISM IN MALE AND FEMALE BOVINE EMBRYOS PRODUCED *IN VITRO*
M. Garcia-Herrerros, I. M. Aparicio, D. Rath, T. Fair, and P. Lonergan
- 104 COMPARATIVE ANALYSIS OF THE YOLK SAC OF BOVINE EMBRYOS AT 30 DAYS OF PREGNANCY DERIVED FROM ARTIFICIAL INSEMINATION OR *IN VITRO* FERTILIZATION
C. M. Oliveira, A. Oliveira, E. Fonseca, and M. A. Miglino
- 105 *IN VIVO* DEVELOPMENT OF CANINE PARTHENOTES AND THE EXPRESSION PATTERN OF Igf2/Igf2r GENES
J. E. Park, H. J. Oh, M. J. Kim, G. A. Kim, E. J. Park, G. Jang, and B. C. Lee
- 106 EFFECTS OF BONE MORPHOGENETIC PROTEIN 4 (BMP4) AND ITS INHIBITOR NOGGIN ON BOVINE *IN VITRO* EMBRYO DEVELOPMENT
I. La Rosa, R. Fernandez-Martin, D. A. Paz, and D. F. Salamone
- 107 DIFFERENCES IN THE INNER MITOCHONDRIAL MEMBRANE POTENTIAL BETWEEN NON-CULTURED AND CULTURED PORCINE EMBRYOS
M. Romek, B. Gajda, M. Rolka, and Z. Smorag
- 108 A CRITICAL-SIZE CRANIOFACIAL BONE DEFECT MODEL IN THE YORKSHIRE PIG
A. J. Maki, S. G. Clark, J. R. Woodard, M. Goldwasser, and M. B. Wheeler
- 109 INTRAFOLLICULAR GLUCOSE CONCENTRATION HAS AN INFLUENCE ON THE SEX OF BOVINE BLASTOCYSTS PRODUCED *IN VITRO*
E. Abele, H. Stinshoff, A. Hanstedt, S. Wilkening, S. Meinecke-Tillmann, and C. Wrenzycki

EARLY PREGNANCY/PREGNANCY RECOGNITION

- 110 EXPRESSION AND CLONING OF OESTRADIOL RECEPTOR α AND PROGESTERONE RECEPTORS AND INTERFERONE STIMULATED GENE 15 IN ENDOMETRIUM AND CORPUS LUTEUM OF PREGNANT CAMEL
A. S. Abdoon, O. M. Kandil, H. Kleim, D. Schams, B. Berisha, and C. M. Zeng
- 111 SINGLE EQUINE EMBRYO LIPID FINGERPRINTING BY MASS SPECTROMETRY
R. F. Gonçalves, C. R. Ferreira, C. M. B. Orlandi, V. C. Sartori, H. N. Ferreira, F. C. Gozzo, S. A. Saraiva, E. J. Pilau, and M. N. Eberlin
- 112 EXPRESSION OF DNA METHYLTRANSFERASES (DNMT) IN PLACENTAL TISSUES DURING EARLY PREGNANCY IN SHEEP
A. T. Grazul-Bilska, M. L. Johnson, P. P. Borowicz, D. A. Redmer, and L. P. Reynolds
- 113 EFFECT OF SOME FACTORS ON CONCEPTION RATE IN ALPACAS UNDER PERUVIAN HIGHLAND CONDITION
A. Diaz, W. Huanca, A. Ampuero, H. Huaman, J. Camacho, T. Huanca, D. Quispe, and H. Diaz

- 114 BOVINE EMBRYO-MATERNAL RECOGNITION MAY OCCUR EARLIER IN AI THAN IN EMBRYO TRANSFER (ET)
A. Ideta, Y. Nakamura, K. Tsuchiya, H. Fujiwara, T. Yamaguchi, K. Imakawa, and Y. Aoyagi
- 115 EXPRESSION OF RADICAL S-ADENOSYL METHIONINE DOMAIN CONTAINING-2 (RSAD2) AND TRANSFORMING GROWTH FACTOR β (TGF- β) IN BOVINE PERIPHERAL BLOOD MONONUCLEAR CELLS DURING PREGNANCY: IDENTIFICATION OF POTENTIAL BIOMARKERS TO DETERMINE PREGNANCY STATUS
N. Mansouri-Attia, L. J. Oliveira, F. Carter, N. Forde, P. Lonergan, and T. Fair
- 116 PREGNANCY RATES AFTER ADMINISTRATION OF EQUINE CHORIONIC GONADOTROPIN (ECG) AT PROGESTERONE INTRAVAGINAL DEVICE REMOVAL AND 14 DAYS AFTER FIXED-TIME AI IN BEEF CATTLE
R. Núñez, T. de Castro, L. Cutaia, G. Bó, and A. Menchaca
- 117 SERUM PROGESTERONE CONCENTRATION AND EMBRYO DIAMETER ON DAY 7 POST-OVULATION IN MARES
B. R. Scott, D. B. Carwell, R. A. Hill, K. R. Bondioli, R. A. Godke, and G. T. Gentry, Jr.
- 118 A SINGLE INTRAUTERINE INFUSION OF SUSTAINED RELEASE RECOMBINANT BOVINE INTERFERON τ ON DAY 13 EXTENDS CORPUS LUTEUM LIFESPAN IN CYCLIC COWS
H. Takahashi, Y. Hashiyada, Y. Inaba, T. Yasuda, M. Hirako, and M. Geshi
- 119 FGF2 AND FGF10 STIMULATES BOVINE AND OVINE TROPHOBLAST CELL MIGRATION
Q. E. Yang, K. Zhang, M. I. Giassetti, M. Ozawa, S. E. Johnson, and A. D. Ealy

EMBRYO CULTURE

- 120 SUPPLEMENTATION OF VASCULAR ENDOTHELIAL GROWTH FACTOR DURING *IN VITRO* MATURATION OF PORCINE IMMATURE CUMULUS-OOCYTE COMPLEXES AND SUBSEQUENT DEVELOPMENTAL COMPETENCE AFTER PARTHENOGENESIS AND SOMATIC CELL NUCLEAR TRANSFER
D. Biswas, Y.-B. Jeon, G.-H. Kim, E.-B. Jeung, and S. H. Hyun
- 121 DEVELOPMENTAL CHANGES IN THERMOPROTECTIVE ACTIONS OF INSULIN-LIKE GROWTH FACTOR-1 ON THE PREIMPLANTATION BOVINE EMBRYO
A. Q. S. Bonilla, L. J. Oliveira, M. Ozawa, E. M. Newsom, M. C. Lucy, and P. J. Hansen
- 122 EXTENSIVE ALTERATIONS IN THE QUANTITATIVE PROTEOME PROFILE DURING EARLY EMBRYONIC DEVELOPMENT
M. Demant, T. Fröhlich, E. Wolf, and G. J. Arnold
- 123 AGGREGATION OF CLONED EQUINE EMBRYOS: IMPROVEMENT OF *IN VITRO* AND *IN VIVO* DEVELOPMENT
A. Gambini, J. Jarazo, R. Olivera, F. Karlanian, and D. F. Salamone
- 124 CO-CULTURE WITH BOVINE INTACT CUMULUS-OOCYTE COMPLEXES DURING *IN VITRO* FERTILIZATION OF BUFFALO DENUDED OOCYTES COMPLETELY RESTORES THEIR FERTILIZING AND DEVELOPMENTAL COMPETENCE
M. De Blasi, M. Rubessa, L. Boccia, S. Di Francesco, M. V. Suárez Novoa, V. Longobardi, and B. Gasparrini
- 125 EFFECT OF GLYCERALDEHYDE-3-PHOSPHATE DURING BOVINE *IN VITRO* EMBRYO CULTURE
M. Rubessa, S. Di Francesco, M. V. Suárez Novoa, L. Boccia, V. Longobardi, M. De Blasi, and B. Gasparrini

- 126 EFFECT OF REDUCING GLUCOSE CONCENTRATION DURING *IN VITRO* EMBRYO CULTURE IN BUFFALO (*BUBALUS BUBALIS*)
M. V. Suárez Novoa, S. Di Francesco, M. Rubessa, L. Boccia, V. Longobardi, M. De Blasi, and B. Gasparrini
- 127 EFFECT OF DIETARY FATS ON EMBRYO QUALITY AND YIELD IN HEAT-STRESSED DAIRY CATTLE
Y. Z. Guzey and A. G. Onal
- 128 MULTIPLICATION OF 8-CELL EMBRYOS BY AGGREGATION OF A SINGLE ENHANCED GREEN FLUORESCENT PROTEIN-LABELED BLASTOMERE WITH PUTATIVE TETRAPLOID EMBRYOS
M. I. Hiriart, R. J. Bevacqua, R. Fernandez-Martin, and D. F. Salamone
- 129 DEVELOPMENTAL COMPETENCE OF PORCINE OOCYTES AFTER *IN VITRO* MATURATION AND *IN VITRO* CULTURE UNDER COMPARATIVE OXYGEN TENSION
J. T. Kang, M. Atikuzzaman, D. K. Kwon, S. J. Park, S. J. Kim, J. H. Moon, M. N. Gomez, O. J. Koo, G. Jang, and B. C. Lee
- 130 THE SYNERGIC EFFECT OF NERVE GROWTH FACTOR AND VASCULAR ENDOTHELIAL GROWTH FACTOR ON *IN VITRO* MATURATION AND DEVELOPMENTAL COMPETENCE IN BOVINE OOCYTES
B. Kim, I. M. Saadeldin, B. Lee, and G. Jang
- 131 EFFECT OF BREED AND FROZEN-THAWED RAM SEMEN ON *IN VITRO* FERTILIZATION AND OVINE EMBRYONIC DEVELOPMENT
K. C. Lehloenya, N. Mahoete, J. P. C. Greyling, and T. L. Nedambale
- 132 EFFECTS OF OXYGEN TENSION, MEDIUM, AND WELL OF THE WELL ON *IN VITRO* DEVELOPMENT OF THE MOUSE EMBRYO
Y. S. Li, Z. B. Cao, Y. Liu, H. G. Cao, Y. Tao, X. R. Zhang, and Y. H. Zhang
- 133 EVALUATION OF OOCYTE DONOR SOURCE AND CULTURE MEDIUM ON DOMESTIC CAT EMBRYO DEVELOPMENT RATES
A. J. Pearks Wilkerson, R. D. Landry, and C. R. Long
- 134 EFFECTS OF VITAMIN E AND VITAMIN C ON THE DEVELOPMENTAL COMPETENCE OF BUFFALO (*BUBALUS BUBALIS*) EMBRYOS DERIVED FROM PARTHENOGENETIC ACTIVATION, *IN VITRO* FERTILIZATION, AND NUCLEAR TRANSFER
F. Lu, Z. Zhang, S. Zhang, N. Li, J. Jiang, and D. Shi
- 135 EXPRESSION OF APOPTOSIS-RELATED GENES IN BUFFALO (*BUBALUS BUBALIS*) EMBRYOS PRODUCED THROUGH *IN VITRO* FERTILIZATION AND PARTHENOGENETIC ACTIVATION
S. Saw, K. P. Singh, R. Kaushik, M. Muzaffar, M. S. Chauhan, R. S. Manik, S. K. Singla, P. Palta, and M. K. Singh
- 136 *N*-METHYL-D-ASPARTIC ACID and HOMOCYSTEINE CAN BE USED TOGETHER AS A REPLACEMENT FOR BOVINE SERUM ALBUMIN IN EARLY PORCINE EMBRYO CULTURE
L. D. Spate, B. K. Bauer, C. N. Murphy, and R. S. Prather
- 137 PHENAZINE ETHOSULFATE AND FETAL CALF SERUM EFFECTS ON THE DEVELOPMENT AND APOPTOSIS OF *IN VITRO* PRODUCED BOVINE EMBRYOS
M. J. Sudano, D. M. Paschoal, T. S. Rascado, L. C. O. Magalhães, L. F. Crocomo, J. F. Lima-Neto, R. Machado, and F. C. Landim-Alvarenga

- 138 TIME-LAPSE CINEMATOGRAPHY-COMPATIBLE INJECTION-MOLDED MICROWELL CULTURE SYSTEM FOR TRACKING THE DEVELOPMENT OF INDIVIDUAL BOVINE EMBRYOS
S. Sugimura, T. Akai, T. Somfai, M. Hirayama, Y. Aikawa, M. Ohtake, H. Hattori, S. Kobayashi, Y. Hashiyada, K. Konishi, and K. Imai
- 139 TRICHOSTATIN A IMPROVED *IN VITRO* DEVELOPMENT OF PORCINE NUCLEAR TRANSFER EMBRYOS PRODUCED BY A NEW ACTIVATION METHOD
L. C. Sui, W. Wang, Y. S. Li, Y. L. Zhang, S. F. Ji, Z. B. Cao, J. W. Chen, T. Gui, M. L. Zhang, X. R. Zhang, and Y. H. Zhang

EMBRYO MANIPULATION

- 140 PRODUCTION OF RECONSTRUCTED *IN VITRO* PRODUCED BOVINE EMBRYOS BY INNER CELL MASS AND TROPHECTODERM AGGREGATION *IN VITRO*
I. P. Emanuelli, E. Razza, C. M. Barros, and M. F. G. Nogueira
- 141 A NOVEL METHOD FOR PURIFICATION OF INNER CELL MASS AND TROPHECTODERM CELLS FROM BOVINE BLASTOCYSTS USING MAGNETIC ACTIVATED CELL SORTING
M. Ozawa and P. J. Hansen
- 142 CHIMERISM BY AGGREGATION OF BISECTED *IN VITRO* PRODUCED BOVINE EMBRYOS
E. M. Razza, I. P. Emanuelli, C. M. Barros, and M. F. G. Nogueira
- 143 TREATMENT WITH VITAMINS A AND E IMPROVE OOCYTE QUALITY AND *IN VITRO* EMBRYO DEVELOPMENT IN *BOS INDICUS* COWS
J. J. F. Evangelista, C. E. A. Souza, M. E. A. Moraes, and A. A. A. Moura

EMBRYO TRANSFER

- 144 HEAT TOLERANCE OF DEMI-EMBRYOS FROM A TROPICAL-ADAPTED *BOS TAURUS* BREED
R. H. Alvarez, A. C. Martinez, and R. M. L. Pires
- 145 EFFECT OF TRANSFER OF CATTLE ELONGATING EMBRYO TO A REPEAT BREEDER COW ON PREGNANCY RATE AND INCIDENCE OF A RETURN TO ESTRUS
K. Kimura, S. Matsuyama, and T. Kojima
- 146 CONSEQUENCES OF EMBRYONIC EXPOSURE TO COLONY-STIMULATING FACTOR 2 ON TROPHOBLAST ELONGATION, INTERFERON TAU SECRETION, AND GENE EXPRESSION IN THE EMBRYONIC DISC AND TROPHECTODERM
B. Loureiro, M. G. Favoreto, J. Block, S. Carambula, K. Pennington, A. D. Ealy, and P. J. Hansen
- 147 USE OF EQUINE CHORIONIC GONADOTROPIN AFTER EMBRYO TRANSFER IN NELORE AND CROSSBRED RECIPIENT CATTLE
M. C. C. Mattos, M. R. Bastos, A. C. S. Oliveira, J. R. S. Gonçalves, T. A. Oliveira, G. B. Mourão, and R. Sartori
- 148 PIGLET GROWTH AND BLOOD COMPONENTS DURING LACTATION FOLLOWING RECIPROCAL EMBRYO TRANSFER BETWEEN MEISHAN AND WHITE CROSSBRED GILTS
J. R. Miles, J. L. Vallet, J. J. Ford, B. A. Freking, R. A. Cushman, W. T. Oliver, and R. K. Christenson
- 149 AN INEXPENSIVE LABORATORY PRACTICE TO TEACH EMBRYO COLLECTION AND TRANSFER
A. Martinez, G. Tovar, C. Estrada, E. Esperon, and S. Romo

- 150 CONCEPTION RATES OF FRESH AND FROZEN *IN VIVO*-PRODUCED MORULAE AND BLASTOCYSTS IN LACTATING DAIRY RECIPIENT COWS
R. Sartori, M. C. C. Mattos, M. R. Bastos, T. A. Oliveira, J. N. Guenther, and M. C. Wiltbank
- 151 PREGNANCY RATES AFTER A NONSTEROIDAL ANTI-INFLAMMATORY (FLUNIXIN MEGLUMINE) AND PROGESTERONE (P₄) ADMINISTRATION TO MANGALARGA MARCHADOR RECIPIENT MARES
P. G. Rodrigues, A. M. Resende, J. C. Souza, R. R. Carvalho, and R. Maculan
- 152 EFFECT OF EMBRYO TRANSFER AFTER ARTIFICIAL INSEMINATION ON THE CONCEPTION RATE IN DAIRY COWS UNDER HEAT STRESS IN SOUTHERN JAPAN
M. Tani, C. Tani, K. Tomokawa, D. Funakoshi, M. Sakatani, M. Takahashi, G. Kitahara, and S. Kamimura
- 153 EFFECT OF DIFFERENT HOLDING AND TRANSPORT MEDIA ON CONCEPTION RATES FOLLOWING TRANSFER OF *IN VIVO* AND *IN VITRO* FERTILIZATION-DERIVED BOVINE EMBRYOS
C. A. Zanenga, C. M. Martins, N. C. Rodovalho, F. Aidar, J. F. Hasler, I. C. C. Santos, and R. Valentim

EPIDEMIOLOGY/DISEASES

- 154 EVALUATION OF THE EFFECTIVENESS OF TREATMENT WITH TRYPSIN IN MURINES EMBRYOS EXPERIMENTALLY EXPOSED TO BOVINE HERPESVIRUS TYPE-1 (BoHV-1) BY THE NESTED-PCR TECHNIQUE
E. Palazzi, D. Pavão, M. Alves, L. Batista, R. Queiroz, F. Souza, and M. D'Angelo
- 155 EMBRYONIC APOPTOSIS AFTER BTV-8 INFECTION IN BOVINE HATCHED *IN VITRO* PRODUCED BLASTOCYSTS
L. Vandaele, W. Wesselingh, K. De Clercq, I. De Leeuw, H. Favoreel, A. Van Soom, and H. Nauwynck

EXOTIC SPECIES

- 156 MONITORING SALIVARY TESTOSTERONE CONCENTRATIONS FROM CAPTIVE AMAZONIAN MANATEES (*TRICHECHUS INUNGUIS*): IS THERE A SEASONAL PATTERN?
R. S. Amaral, F. C. W. Rosas, P. Viau, M. Nichi, V. M. F. da Silva, and C. A. Oliveira
- 157 *IN VITRO* SPERM CAPACITATION IN A MARSUPIAL, *SMINTHOPSIS MACROURA*
N. E. Calatayud, K. N. Cane, M. G. Larman, D. K. Gardner, and L. Selwood
- 158 DEVELOPMENT OF FIELD ASSAY FOR EVALUATION OF WHITE RHINOCEROS NEUTROPHIL FUNCTION AS A STRESS MARKER
M. Kruger, N. I. Pitts, J. Virgo, E. Betts, K. Delk, and R. A. Fayer-Hosken
- 159 COMPARISON BETWEEN EQUINE CHORIONIC GONADOTROPIN AND PORCINE FOLLICLE STIMULATING HORMONE FOR *IN VIVO* PRODUCTION OF EMBRYOS IN ALPACAS (*VICUGNA PACOS*) SHOWING NATURAL LUTEAL PHASE AFTER INDUCTION OF OVULATION
W. Vivanco, E. Huaman, S. Leon, T. Nunez, A. Gregoire, D. Ponce, E. Alvarado, and M. Asparrin
- 160 SUCCESSFUL PREGNANCY IN ESTRUS-SYNCHRONIZED HIMALAYAN TAHRS (*HEMISTRAGUS JEMLAHICUS*) BY TRANSCERVICALLY INSEMINATING FRESH AND EXTENDED-CHILLED SEMEN COLLECTED BY ELECTROEJACULATION
H. Yong, B.-S. Bae, S.-D. Kim, and S.-H. Hyun

FOLLICULOGENESIS/OOGENESIS

- 161 DIETARY ENERGY SOURCE IN PRIMIPAROUS DAIRY COWS DURING THE TRANSITION PERIOD: BLOOD METABOLITES AND FOLLICULAR CLASSIFICATION
M. A. T. Artunduaga, S. G. Coelho, A. M. Borges, A. M. Q. Lana, and H. M. Saturnino
- 162 OVARIAN ULTRASOUND BIOMICROSCOPY IN RABBITS
M. P. Cervantes, J. Singh, J. M. Palomino, D. Li, and G. P. Adams
- 163 *IN VITRO* CULTURE OF PORCINE OOCYTE-GRANULOSA CELL COMPLEXES
Y. F. Diao, R. X. Han, H. R. Kim, C. S. Park, and D. I. Jin
- 164 EPIGENETIC ANALYSIS OF GENOMIC DNA IN PREPUBERAL AND ADULT BOVINE OOCYTES
M. Diederich, J. Heinzmann, W. Kues, U. Baulain, T. Haaf, R. Reinhardt, and H. Niemann
- 165 SHORT-TIME FASTING AFFECTS METABOLIC MARKERS WITHOUT IMPACT ON FOLLICLE AND OOCYTE DEVELOPMENT IN THE RABBIT MODEL
R. M. Garcia-Garcia, P. G. Rebollar, M. Arias Alvarez, O. G. Sakr, P. Ramos Ibeas, G. Brecchia, P. Millan, C. Boiti, and P. L. Lorenzo
- 166 THE DIFFERENTIAL TRANSCRIPTOME AND ONTOLOGY PROFILES OF MURAL AND CUMULUS GRANULOSA CELLS IN STIMULATED HUMAN ANTRAL FOLLICLES
S. Kõks, A. Velthut, A. Sarapik, S. Altmäe, E. Reinmaa, L. C. Schalkwyk, C. Fernandes, H. Lad, U. Soomets, Ü. Jaakma, and A. Salumets
- 167 VISUALISATION OF FAT ACCUMULATION IN BOVINE PREANTRAL AND ANTRAL OOCYTES USING 2-PHOTON MICROSCOPY
A. Langbeen, J. L. M. R. Leroy, I. Pintelon, and P. E. J. Bols
- 168 CHARACTERIZATION AND DIFFERENTIATION INTO OOCYTE-LIKE CELL MASSES OF PORCINE MESENCHYMAL STEM CELLS DERIVED FROM OVARIAN THECA CELLS
Y. M. Lee, B. Mohana Kumar, S. W. Kim, S. L. Lee, and G. J. Rho
- 169 CHANGES OF PROTEIN PROFILES DURING FOLLICLE DEVELOPMENT AND *IN VITRO* OOCYTE MATURATION IN THE PIG
M. R. Ji, D. M. Jang, Y. S. Lee, H. T. Cheong, B. K. Yang, and C. K. Park
- 170 NATURALLY OCCURRING CHRONIC MASTITIS COMPROMISES FOLLICULOGENESIS, AFFECTS VASCULARIZATION, AND INTERACTS WITH DIFFERENTIATION FACTOR GDF9 IN BOVINE OVARIAN STROMA
M. M. Rahman, M. Mazilli, G. Pennarossa, T. A. L. Brevini, A. Vanelli, A. Zecconi, and F. Gandolfi
- 171 Withdrawn
- 172 REUSE OF AUTOCLAVED INTRAVAGINAL PROGESTERONE DEVICE TO ESTROUS SYNCHRONIZATION IN TOGGENBURG GOATS IN THE BREEDING SEASON
J. M. G. Souza, C. A. A. Torres, M. C. Silva, A. L. R. S. Maia, J. H. Bruschi, F. Z. Brandão, J. H. M. Viana, V. J. F. Freitas, and J. F. Fonseca
- 173 A COMBINED RECOMBINANT BOVINE SOMATOTROPIN/EQUINE CHORIONIC GONADOTROPIN PROTOCOL IN THE ZEBU BREED TABAPUA AND HOLSTEIN HEIFERS SUBMITTED TO OVUM PICKUP
J. C. de Souza, H. de Morais, R. Spuri, R. C. Andrade, and T. L. C. Pinto

- 174 EVALUATION OF THE 9-DAY PROTOCOL FOR ESTROUS SYNCHRONIZATION IN SANTA INES EWES
P. Viau, M. B. Paes de Barros, L. M. K. Dias, S. S. Nicolau, C. T. Marino, and C. A. Oliveira
- 175 METABOLIC STRESS IMPAIRS FOLLICULAR GROWTH IN SUPEROVULATED HEIFERS
H. Aardema, B. A. J. Roelen, B. M. Gadella, and P. L. A. M. Vos
- 176 EFFECTS OF VEHICLE AND ROUTE OF ADMINISTRATION OF LETROZOLE ON OVARIAN FUNCTION IN CATTLE
M. J. Yapura, R. J. Mapletoft, J. Singh, R. A. Pierson, D. Rogan, and G. P. Adams

GENE EXPRESSION

- 177 GENE EXPRESSION PROFILES OF *IN VITRO*- AND *IN VIVO*-DERIVED BOVINE EMBRYOS
D. Aktoprakligil Aksu, C. Agca, S. Aksu, T. Akkoc, A. Tas Caputcu, S. H. Kizil, H. Sagirkaya, H. Bagis, and Y. Agca
- 178 DISTINCT EXPRESSION AND REGULATION OF ECTONUCLEOTIDE PYROPHOSPHATASE/ PHOSPHODIESTRASE 2 AND ITS POTENTIAL ROLE(S) IN THE UTERUS OF RATS DURING ESTROUS CYCLE
H.-J. Ahn and E.-B. Jeung
- 179 EFFECT OF SERUM DURING CULTURE ON DAY 14 ELONGATED BOVINE EMBRYOS
J. Angulo, G. T. Gentry Jr., R. A. Godke, and K. R. Bondioli
- 180 HEAT STRESS INDUCES ALTERATION IN EXPRESSION OF GENES RELATED TO COMPETENCE AND IMPLANTATION IN NELORE BOVINE *IN VITRO*-PRODUCED EMBRYOS
C. F. Silva, A. C. S. Castilho, R. A. Satrapa, R. Z. Puelker, E. M. Razza, H. P. Eduardo, J. Buratini Jr., and C. M. Barros
- 181 TRANSCRIPTIONAL SEXUAL DIMORPHISM IN AUTOSOMAL GENES ON BOVINE DAY 14 EMBRYOS
P. Bermejo-Alvarez, D. Rizos, P. Lonergan, and A. G.-Adan
- 182 CALBINDIN-D28K IS PREDOMINANTLY EXPRESSED AND REGULATED BY ESTROGEN IN HUMAN ENDOMETRIUM DURING MENSTRUAL CYCLE
K.-C. Choi, H. Yang, and E.-B. Jeung
- 183 MITOGEN-ACTIVATED PROTEIN KINASES ARE ACTIVATED BY ADENOSINE TRIPHOSPHATE IN RAT OVARIAN SURFACE EPITHELIAL CELLS
K.-A. Hwang and K.-C. Choi
- 184 EXPRESSION OF GENES RELATED TO DNA METHYLATION AND GLUCOSE METABOLISM DURING THE PRE-IMPLANTATIONAL STAGE OF BOVINE EMBRYOS
A. R. Ferreira, G. M. Machado, J. M. Azevedo, R. Sartori, M. A. N. Dode, and M. M. Franco
- 185 HIGH-THROUGHPUT PROTEOMIC ASSESSMENT OF FROZEN-THAWED BOAR SPERMATOZOA
J. M. Feugang, K. Pendarvis, M. Crenshaw, S. T. Willard, and P. L. Ryan
- 186 LASER CAPTURE MICRODISSECTION FOR GENE EXPRESSION ANALYSIS OF INNER CELL MASS AND TROPHOBLAST FROM BOVINE BLASTOCYSTS
M. Filliers, W. de Spiegelaere, L. J. Peelman, K. Goossens, C. Burvenich, L. Vandaele, P. Cornillie, and A. Van Soom
- 187 DIFFERENTIAL EXPRESSIONS OF GROWTH AND DIFFERENTIATION FACTOR 9 AND BONE MORPHOGENETIC PROTEIN 15 GENES IN OVARIES OF THE CALF AND COW
M. Hosoe, K. Ushizawa, K.-G. Hayashi, and T. Takahashi

- 188 CALBINDIN-D28_k IS INVOLVED IN THE APOPTOTIC PATHWAY AND PLAYS A ROLE AS AN ANTIAPOPTOTIC GENE IN HYDROGEN PEROXIDE-INDUCED CELL DEATH OF HUMAN ENDOMETRIAL ISHIKAWA CELLS
S.-H. Hyun, E.-M. Jung, and E.-B. Jeung
- 189 THE CALCIUM EXCHANGERS NCKX3 AND NCX1 ARE DISTINCTLY EXPRESSED AND REGULATED BY STEROIDS IN THE HUMAN ENDOMETRIUM DURING THE MENSTRUAL CYCLE
E.-B. Jeung
- 190 EXPRESSION OF APOPTOTIC GENES IS MEDIATED BY CALCIUM-BINDING PROTEINS, CALBINDINS, IN THE UTERUS OF CALBINDIN-D9_k AND CALBINDIN-D28_k KNOCKOUT MICE
E.-M. Jung and E.-B. Jeung
- 191 TRANSIENT RECEPTOR POTENTIAL SUPERFAMILY OF ION CHANNELS, TRPV6, IS CONSTITUTIVELY EXPRESSED AND REGULATED BY ESTROGEN IN THE HUMAN UTERUS DURING THE MENSTRUAL CYCLE
Y.-K. Kim, H. Yang, and E.-B. Jeung
- 192 INDUCIBLE TRANSGENE EXPRESSION IN PIGS
N. Klymiuk, W. Boecker, A. Baehr, T. Radic, A. Wuensch, E. Schilling, M. Kurome, B. Kessler, H. Nagashima, W. Mutschler, M. Schieker, and E. Wolf
- 193 BOVINE EMBRYO GENOTYPING USING A 50K SINGLE NUCLEOTIDE POLYMORPHISM CHIP
D. Le Bourhis, E. Mullaart, P. Humblot, W. Coppieters, and C. Ponsart
- 194 EXPRESSION OF STANNIOCALCIN FAMILY GENES DURING PREIMPLANTATION STAGE BOVINE EMBRYO DEVELOPMENT
S. Mamo, A. Al Naib, L. O'Hara, T. Fair, and P. Lonergan
- 195 SPERMATOZOAL PROTEIN MARKERS FOR ANGUS BULL FERTILITY
X. Wang, A. Kaya, and E. Memili
- 196 GLUTATHIONE S-TRANSFERASE THETA1 (GSTT1) IS DIFFERENTIALLY REGULATED FROM OTHER GLUTATHIONE S-TRANSFERASES IN GRANULOSA CELLS
M. Muraki, Y. Takahashi, T. Ishii, S. Kyuwa, and Y. Yoshikawa
- 197 MOLECULAR CLONING AND EXPRESSION OF THE CASHMERE GOAT IZUMO GENE
R.H. Na, L. Liang, and L. Fu
- 198 THE EFFECT OF SOURCE AND *IN VITRO* MATURATION ON THE ABUNDANCE OF MATERNAL mRNA OF SELECTED GENES IN FOLLICULAR BOVINE OOCYTES AND THEIR INFLUENCE ON *IN VITRO* DEVELOPMENT
T. Somfai, K. Imai, M. Kaneda, S. Akagi, S. Haraguchi, S. Watanabe, E. Mizutani, T.Q. Dang-Nguyen, Y. Inaba, M. Geshi, and T. Nagai
- 199 Withdrawn
- 200 *IN VITRO* EMBRYO PRODUCTION IS ASSOCIATED WITH DISTINCT ALTERATIONS IN THE TRANSCRIPTOME BETWEEN THE BLASTOCYST STAGE AND THE INITIATION OF ELONGATION IN CATTLE
M. Clemente, I. Lopez-Vidriero, P. O'Gaora, J. P. Mehta, N. Forde, A. Gutierrez-Adan, P. Lonergan, and D. Rizos

- 201 SUPPRESSION OF *Suz12* IN BOVINE PREIMPLANTATION EMBRYOS VIA CYTOPLASMIC SMALL INTERFERING RNA INJECTION
G. L. Williamson, J. H. Pryor, K. Tessanne, M. C. Golding, and C. R. Long
- 202 KNOCK-DOWN AND DEVELOPMENTAL EFFICIENCY OF *ARHGAP15* GENE KNOCK-DOWN EMBRYOS
B.-C. Yang, H.-C. Lee, S. Hwang, I.-S. Jeon, D.-K. Lee, J.-H. An, E.-H. Noh, Y.-J. Han, E.-Y. Kim, K.-C. Hwang, and S.-B. Park
- 203 PLASMA MEMBRANE Ca^{2+} -PUMPING *ATPase 1* IS ABUNDANTLY EXPRESSED AND DISTINCTLY REGULATED BY ESTROGEN IN HUMAN ENDOMETRIUM DURING THE MENSTRUAL CYCLE
H. Yang and E.-B. Jeung
- 204 ALTERED GENE EXPRESSION FOLLOWING EXPOSURE TO BIS-PHENOL A IN HUMAN OVARIAN CANCER CELLS EXPRESSING ESTROGEN RECEPTORS BY MICROARRAY
B.-R. Yi, E.-B. Jeung, and K.-C. Choi

IVF/IVP

- 205 GLUCOSE-6-PHOSPHATE DEHYDROGENASE ACTIVITY IN OVINE OOCYTES IS ASSOCIATED WITH PRE-IMPLANTATION EMBRYONIC DEVELOPMENT *IN VITRO*
F. Asghari, M. Shahidi, Y. Chashnidel, H. Deldar, Z. Ansari-Pirsaraei, and A. Mohammadi-Sangcheshmeh
- 206 THE IMPORTANCE OF CUMULUS EXPANSION FOR MONOSPERMIC FERTILIZATION OF PORCINE CUMULUS-OOCYTE COMPLEXES
J. Beek, J. Bijttebier, D. Maes, H. Nauwynck, and A. Van Soom
- 207 OOCYTE RECOVERY RATES AND *IN VITRO* BLASTOCYST PRODUCTION IN CATTLE TREATED WITH A SINGLE INJECTION OF FOLLITROPIN-V DILUTED IN A SLOW-RELEASE FORMULATION
F. L. Ongaratto, A. Tríbulo, M. Ramos, P. Rodriguez, and G. A. Bó
- 208 *IN VITRO* FERTILIZATION UNDER SIMULATED STRESS AND SUBSEQUENT *IN VITRO* EMBRYO PRODUCTION IN THE PIG
R. González and Y. Brandt
- 209 EFFECT OF HEAT STRESS ON DEVELOPMENT OF *IN VITRO*-FERTILIZED AND PARTHENOGENETIC BOVINE EMBRYOS
F. Paludo, M. M. Pereira, C. C. R. Quintao, L. T. Iguma, M. M. Gioso, J. H. M. Viana, and L. S. A. Camargo
- 210 CO-CULTURE WITH AUTOLOGOUS CUMULUS CELLS SUPPORTS THE INDIVIDUAL DEVELOPMENT OF SINGLY *IN VITRO*-MATURED AND FERTILIZED BOVINE OOCYTES
I. G. F. Goovaerts, J. L. M. R. Leroy, E. Merckx, S. Andries, and P. E. J. Bols
- 211 *IN VIVO* MATURATION AND *IN VITRO* FERTILIZATION OF ALPACA OOCYTES
W. Huanca, R. L. Condori, M. A. Chileno, J. Cainzos, J. J. Becerra, L. A. Quintela, and P. G. Herradon
- 212 EFFECT OF CONSECUTIVE SUPERSTIMULATORY TREATMENT-INDUCED FOLLICULAR WAVE SYNCHRONIZATION TO OPTIMIZE OOCYTE RETRIEVAL AND EMBRYO PRODUCTION BY OVUM PICKUP AND *IN VITRO* FERTILIZATION IN COWS
K. Imai, M. Ohtake, Y. Aikawa, S. Sugimura, M. Hirayama, Y. Hashiyada, S. Kobayashi, and K. Konishi

- 213 THE EFFECTS OF SERICIN SUPPLEMENTATION IN *IN VITRO* CULTURE MEDIUM ON THE DEVELOPMENT AND CRYOSURVIVAL OF BOVINE *IN VITRO*-MATURED–*IN VITRO*-FERTILIZED EMBRYOS
Y. Inaba, M. Hosoe, H. Teramoto, and M. Geshi
- 214 EFFECT OF LONG-DISTANCE TRANSPORTATION OF OVARIES ON THE DEVELOPMENT OF *IN VITRO*-MATURED–*IN VITRO*-FERTILIZED– *IN VITRO*-CULTURED BOVINE EMBRYOS
M. Kanae, K. Hisaichi, S. Jaswant, and D. Osamu
- 215 AN IMPROVED SYSTEM FOR THE *IN VITRO* PRODUCTION OF PORCINE EMBRYOS
J. M. Kelly, A. Weaver, D. O. Kleemann, L. M. Frazer, K. L. Kind, W. H. van Wettere, and S. K. Walker
- 216 PRONUCLEAR FORMATION AND DEVELOPMENTAL COMPETENCE OF MATURE PORCINE OOCYTES DERIVED FROM SMALL- AND MEDIUM-SIZED FOLLICLES
C. Kohata and H. Funahashi
- 217 EFFECTS OF PORCINE GRANULOCYTE-MACROPHAGE COLONY-STIMULATING FACTOR ON PORCINE *IN VITRO*-FERTILIZED EMBRYOS
S. S. Kwak, D. Biswas, and S. H. Hyun
- 218 ANTIBIOTIC-RESISTANT MICROBIAL CONTAMINATION (*ENTEROBACTER CLOACAE*) DERIVED FROM EGG YOLK, FROZEN SEMEN EXTENDER, IN PORCINE *IN VITRO*-FERTILIZED EMBRYOS
S. H. Jang, S. S. Kwak, D. Biswas, and S. H. Hyun
- 219 *IN VITRO* FERTILIZATION RATE OF MATURED PIG OOCYTES BY FROZEN-THAWED KOLBROEK PIG SPERM CELLS
M. H. Mapeka, K. C. Lehloenyana, M. L. Mphaphathi, and T. L. Nedambale
- 220 RELATIONSHIP BETWEEN FOLLICULAR FLUID METABOLOME AND BOVINE OOCYTE DEVELOPMENTAL COMPETENCE
S. Matoba, K. Bender, L. Brennan, P. Lonergan, and T. Fair
- 221 EFFECT OF STAGE OF CORPUS LUTEUM DEVELOPMENT ON THE *IN VITRO* PRODUCTION OF BOVINE EMBRYOS
S. Miyashita, K. Miyata, C. Tachibana, Y. Inaba, H. Koyama, and O. Dochi
- 222 COMPARISON OF COMMERCIAL *IN VITRO* EMBRYO PRODUCTION OF BRAHMAN DONORS UNDER BRAZILIAN VERSUS PANAMANIAN MANAGEMENT
J. R. S. Chen, L. F. Nasser, L. Penteado, M. Mendizabal, A. C. Basso, J. H. F. Pontes, M. Bionaz, and M. B. Wheeler
- 223 CHANGE IN THE DISTRIBUTION OF RNA IN BOAR SPERM DURING CULTURE IN A CAPACITATION MEDIUM CONTAINING CAFFEINE
Y. Okudaira and H. Funahashi
- 224 LOCALIZATION OF NITRIC OXIDE SYNTHASE ACTIVITY IN BUFFALO (*BUBALUS BUBALIS*) OOCYTES AND EMBRYOS
K. R. Babu, R. Sharma, K. P. Singh, A. George, M. S. Chauhan, S. K. Singla, R. S. Manik, and P. Palta
- 225 EFFECTS OF PEDIGREE, MEAT QUALITY, AND MEAT QUANTITY OF SLAUGHTERHOUSE DONOR COWS ON OOCYTE RECOVERY, EMBRYO DEVELOPMENT, AND PREGNANCY AFTER EMBRYO TRANSFER
Y. S. Park and H. D. Park

- 226 EVALUATION OF *IN VITRO* EMBRYO DEVELOPMENT OF BOVINE OOCYTES EXPERIMENTALLY EXPOSED TO *MYCOPLASMA BOVIS*
D. Pavao, M. Alves, R. Qureiroz, F. Souza, and M. D. Angelo
- 227 THE EFFECTS OF SEXED SEMEN ON EMBRYONIC DEVELOPMENT TO THE BLASTOCYST STAGE
W. Plummer, D. Beckett, A. Schaffner, B. Layport, J. Norman, C. Grimbleby, P. Wessinger, E. Pace, L. Kirscher, K. Matthews, and T. Dorshorst
- 228 EVALUATION OF EMBRYO VIABILITY AFTER PROLONGED TRANSPORT IN DIFFERENT MEDIA AND AT DIFFERENT TEMPERATURES
R. Z. Puelker, A. G. R. Pupulim, C. H. O. Constant, M. A. Andreazzi, and I. P. Emanuelli
- 229 EVALUATION OF OOCYTE QUALITY RECOVERED FROM GIR BREED COWS WITH SYNCHRONIZED FOLLICULAR WAVE ON *IN VITRO* EMBRYO PRODUCTION
L. T. Iguma, J. N. S. Sales, R. I. T. P. Batista, M. M. Pereira, C. C. R. Quintão, R. S. Verneque, L. S. A. Camargo, J. H. M. Viana, and P. S. Baruselli
- 230 OVUM PICKUP-*IN VITRO* PRODUCTION EFFICIENCY FOR CONSERVATION OF THE FLAMENGA CATTLE BREED
F. C. Zago, S. Gaudêncio Neto, L. H. Aguiar, L. F. Schutz, F. Forell, L. R. S. Marinho, J. Machado Jr., A. Mezzalira, and M. Bertolini

MALE PHYSIOLOGY

- 231 SEMINAL QUALITY IN WHOOPING CRANE (*GRUS AMERICANA*) IS AFFECTED BY STAGE OF BREEDING SEASON BUT NOT BY AGE OF INDIVIDUAL
M. E. Brown, A. Crosier, W. Lynch, S. J. Converse, J. Chandler, G. Olsen, J. French, D. E. Wildt, and N. Songsasen
- 232 INFLUENCE OF SEMINAL PLASMA ON THE SUSCEPTIBILITY OF DOG SPERM AGAINST DIFFERENT REACTIVE OXYGEN SPECIES
A. Dalmazzo, P. A. A. Góes, M. Nichi, R. O. C. Silva, J. R. C. Gurgel, E. G. A. Perez, C. C. Rocha, R. Simões, M. A. Peres, M. E. O. A. Assumpção, R. C. Barnabe, and V. H. Barnabe
- 233 EFFECTS OF A LONG-ACTING TRANQUILIZER ON SPERM MOTILITY OF NORTH AMERICAN BISON BULLS
G. Gratton, B. Toosi, M. Anzar, R. McCorkell, and C. Lessard
- 234 MORPHOLOGICAL CHARACTERIZATION OF TESTES FROM INSULIN RECEPTOR SUBSTRATE (IRS) 2-DEFICIENT MICE
R. J. Griffeth and D. J. Burks
- 235 MANGALARGA STALLION SPERM IS HIGHLY SUSCEPTIBLE TO THE HYDROXYL RADICAL
J. R. C. Gurgel, M. Nichi, E. G. A. Perez, P. A. A. Góes, A. Dalmazzo, R. O. C. Silva, C. C. Rocha, R. Simões, M. A. Peres, M. E. O. A. Assumpção, V. H. Barnabe, and R. C. Barnabe
- 236 PROTEIN TYROSINE PHOSPHORYLATION IN BOAR SPERM DURING CO-CULTURE WITH OVIDUCTAL EPITHELIAL CELLS
V. Luño, R. López-Úbeda, J. Gadea, and C. Matás
- 237 PROTEIN-TYROSINE PHOSPHORYLATION AND CALCIUM UPTAKE IN BOAR SPERM SUBPOPULATIONS AFTER DIFFERENT DISCONTINUOUS PERCOLL GRADIENT CENTRIFUGATIONS
R. López-Úbeda, V. Luño, L. Vieira, J. Gadea, and C. Matás

- 238 ASSOCIATION BETWEEN SPERM MORPHOLOGY AND *IN VITRO* EMBRYO PRODUCTION IN MICE
M. Vilariño, M. Crispo, A. Pinczak, and A. Menchaca
- 239 POSSIBLE MECHANISMS OF SPERM DAMAGE CAUSED BY HEAT STRESS IN EUROPEAN BULLS RAISED IN TROPICAL ENVIRONMENTS
M. Nichi, R. P. Bertolla, T. B. Soler, C. N. M. Cortada, R. M. Zuge, P. E. J. Bols, R. C. Barnabe, and V. H. Barnabe
- 240 FUNCTIONAL TRAITS OF CAT SPERM DURING DISTINCT MATURATION STATUS
E. G. A. Perez, M. Nichi, C. A. Baptista Sobrinho, P. A. A. Góes, A. Dalmazzo, J. R. Gurgel, C. C. Rocha, R. O. C. Silva, R. C. Barnabe, and V. H. Barnabe
- 241 EFFECT OF MATERNAL PERICONCEPTIONAL UNDERNUTRITION ON MALE OFFSPRING PHYSIOLOGY AND TESTICULAR DEVELOPMENT
A. Roséfort, N. Debus, G. Viudes, S. Camous, E. Pailhoux, P. Hassoun, and P. Chavatte-Palmer
- 242 EFFECTS OF TWO COMMERCIAL BOVINE SEMEN EXTENDERS FOR SHORT-TERM STORAGE ON MOTILITY PATTERN OF CHILLED BISON SEMEN
B. M. Toosi, G. Gratton, C. Lessard, and G. P. Adams
- 243 APOPTOTIC-LIKE CHANGES AND FERTILITY OF TRANSGENIC FOR HUMAN α 1,2-FUCOSYLTRANSFERASE GENE AND NONTRANSGENIC BOAR SPERMATOZOA
M. Trzcinska, M. Bryla, R. Slomski, and Z. Smorag

OOCYTE ACTIVATION

- 244 INVOLVEMENT OF Na^+/H^+ ANTIporter 1 IN EMBRYONIC DEVELOPMENT OF RAT OOCYTES ACTIVATED BY ETHANOL
J. Ito, K. Shudo, D. Sano, and N. Kashiwazaki
- 245 ANALYSIS OF CORTICAL GRANULE EXUDATE OBTAINED BY CHEMICAL OOCYTE ACTIVATION IN PIGS
R. Romar, M. J. Izquierdo-Rico, and H. Funahashi
- 246 EVIDENCE OF FOCAL ADHESION ASSEMBLY IN BOVINE OOCYTES
B. R. Sessions, H. Rutigliano, C. J. Davies, and K. L. White

OOCYTE MATURATION

- 247 ADENOSINE TRIPHOSPHATE CONTENT AND SUPEROXIDE DISMUTASE ACTIVITY IN SINGLE OOCYTES BEFORE AND AFTER *IN VITRO* MATURATION
M. Filioli Uranio, B. Ambruosi, A. M. Sardanelli, M. S. Paternoster, F. Amati, N. A. Martino, and M. E. Dell'Aquila
- 248 PRODUCTION OF FLAGGED RECOMBINANT BOVINE BMP15 TO IMPROVE BOVINE *IN VITRO* EMBRYO PRODUCTION SYSTEMS
G. Burns, P. F. Suchodolski, A. J. Pearks Wilkerson, and C. Long
- 249 EXPRESSION OF mRNA ENCODING EPIDERMAL GROWTH FACTOR-LIKE FACTORS IN BOVINE CUMULUS CELLS DURING *IN VITRO* MATURATION: EFFECTS OF TIME AND FOLLICLE-STIMULATING HORMONE
E. S. Caixeta, M. F. Machado, P. Ripamonte, P. F. Lima, A. C. S. Castilho, R. Bueno da Silva, C. M. Barros, C. A. Price, and J. Buratini Jr.

- 250 HUMAN EXHALED AIR CAN EFFECTIVELY SUPPORT *IN VITRO* MATURATION OF PORCINE OOCYTES AND SUBSEQUENT *IN VITRO* DEVELOPMENT
Z. B. Cao, L. C. Sui, S. F. Ji, J. W. Chen, T. Gui, Y. S. Li, Y. Liu, H. G. Cao, Y. Tao, X. R. Zhang, and Y. H. Zhang
- 251 SELECTION OF PREPUBERTAL SHEEP OOCYTES USING BRILLIANT CRESYL BLUE TEST
M. G. Catalá, D. Izquierdo, R. Romaguera, S. Hammami, M. Roura, and M. T. Paramio
- 252 EFFECT OF FOLLICLE-STIMULATING HORMONE ADDITION ON *IN VITRO* MATURATION AND CLEAVAGE OF ALPACA (*VICUGNA PACOS*) EMBRYOS
R. L. Condori, W. Huanca, M. Chileno, J. Cainzo, F. Valverde, J. J. Becerra, L. A. Quintela, and P. G. Herradon
- 253 OOCYTE PREMATURE MATURATION IN THE PRESENCE OF MILRINONE IMPROVES NUCLEAR BUT NOT CYTOPLASMIC MATURATION OF MACAQUE OOCYTES
E. C. Curnow, J. P. Ryan, D. M. Saunders, and E. S. Hayes
- 254 9-CIS RETINOIC ACID INHIBITS CUMULUS CELL APOPTOSIS DURING *IN VITRO* MATURATION OF BOVINE OOCYTES THROUGH INHIBITION OF AP-1 PATHWAY
G. K. Deb, S. R. Dey, J. I. Bang, S. J. Cho, T. H. Kwon, and I. K. Kong
- 255 SPERM NUCLEAR DECONDENSATION ABILITY OF *IN VITRO* MATURED CANINE OOCYTES
M. De los Reyes, J. Vergara, and J. Palomino
- 256 SYNERGISTIC EFFECT ON EMBRYO DEVELOPMENT AND EMBRYO QUALITY WHEN BOVINE DENUDED OOCYTES ARE CO-CULTURED WITH CUMULUS-OOCYTE COMPLEXES DURING *IN VITRO* MATURATION
S. R. Dey, G. K. Deb, J. I. Bang, S. J. Cho, B. H. Choi, and I. K. Kong
- 257 DETECTION OF MICROTUBULES BY POLARIZED LIGHT MICROSCOPY IN SHEEP AND GOAT OOCYTES
J. N. Caamaño, M. Catalá, R. Romaguera, C. Diez, M. Muñoz, D. Martín, R. Morató, S. Carrocera, T. Mogas, M. T. Paramio, and E. Gomez
- 258 ROLE OF PROGESTERONE AND ITS RECEPTORS ON DEVELOPMENTAL COMPETENCE OF OOCYTES IN CATTLE
I. M. Aparicio, M. Garcia-Herreros, L. C. O'Shea, C. Hensey, P. Lonergan, and T. Fair
- 259 Cdk7 AND CYCLIN H, BUT NOT Mat1, ARE INVOLVED IN MEIOTIC RESUMPTION OF PORCINE IMMATURE OOCYTE
W. Fujii, T. Nishimura, K. Kano, and K. Naito
- 260 *IN VITRO* DEVELOPMENTAL COMPETENCE OF PREPUBERTAL GOAT OOCYTES CULTURED IN GROWTH MEDIUM
S. Hammami, R. Romaguera, M. Roura, M. G. Català, R. Morató, T. Mogas, M. T. Paramio, and D. Izquierdo
- 261 INFLUENCE OF *IN VITRO* MATURATION ON EPIGENETIC MARKS AND GENE EXPRESSION IN BOVINE OOCYTES
J. Heinzmann, T. Hansmann, C. Wrenzycki, U. Zechner, T. Haaf, and H. Niemann
- 262 ISOBUTYLMETHYLXANTHINE REVERSIBLY SUPPRESSES SPONTANEOUS AND EQUINE CHORIONIC GONADOTROPIN/EPIDERMAL GROWTH FACTOR-STIMULATED MEIOSIS IN FELINE OOCYTES
J. R. Herrick

- 263 REGULATION OF SEVERAL TRANSCRIPTS DURING *IN VITRO* MATURATION IN PORCINE OOCYTES COLLECTED FROM DIFFERENT SIZE FOLLICLES
M. J. Izquierdo-Rico, R. Romar, C. Kohata, and H. Funahashi
- 264 MITOCHONDRIAL DNA COPY NUMBER IN OOCYTES OF PREPUBERTAL AND CYCLIC GILTS
P. Pawlak, E. Pers-Kamczyc, and D. Lechniak-Cieslak
- 265 INHIBITION OF CLASS III PHOSPHATIDYLINOSITOL-3-KINASE, BY 3-METHYLADENINE, REVERSIBLY ARRESTS PORCINE OOCYTES AT GERMINAL VESICLE STAGE
M. R. Park, M. K. Gupta, S. J. Uhm, S. T. Shin, Y. M. Han, and H. T. Lee
- 266 THE SHORT TIME TREATMENT WITH SODIUM BUTYRATE ON GERMINAL VESICLE STAGE OOCYTES IMPROVES OOCYTE QUALITY AND DEVELOPMENTAL COMPETENCE IN PIGS
L. M. Liu, F. Gao, M. Hua, J. Y. Guan, B. Tang, and Z. Y. Li
- 267 ULTRASTRUCTURAL CHARACTERISTICS OF NON-MATURED AND *IN VITRO* MATURED OOCYTES COLLECTED FROM FOLLICULAR, LUTEAL, AND INACTIVE OVARIES OF DOMESTIC CAT (*FELIS CATUS*) DURING BREEDING AND NON-BREEDING SEASON
L. R. Martins, C. B. Fernandes, B. W. Minto, F. C. Landim-Alvarenga, and M. D. Lopes
- 268 INFLUENCE OF DONOR AGE ON DEVELOPMENTAL COMPETENCE OF *IN VITRO* V. *IN VIVO* MATURED BOVINE OOCYTES OBTAINED BY REPEATED OVUM PICKUP FROM FOLLICLE-STIMULATING-HORMONE-STIMULATED AND NONSTIMULATED ANIMALS
M. Matthiesen, H. D. Reichenbach, F. A. Habermann, M. Reichenbach, G. J. Arnold, and E. Wolf
- 269 EXPRESSION PATTERN OF STRESS MARKER GENES IN BOVINE OOCYTES MATURED *IN VITRO* IN MEDIA WITH DIFFERENT HORMONE COMPOSITION
M. J. Cánepa and A. A. Mutto
- 270 MITOCHONDRIA AND REACTIVE OXYGEN SPECIES COLOCALIZATION IN *IN VIVO* AND *IN VITRO* MATURED OOCYTES FROM SUPEROVULATED ADULT EWES
B. Ambrosi, N. A. Martino, M. Filioli Uranio, F. Silvestre, F. Binetti, M. Caira, G. M. Lacalandra, and M. E. Dell'Aquila
- 271 VIABILITY OF OOCYTES FROM CANINE OVARIES GRAFTED IN THE PROXIMAL PORTION OF THE BODY SURFACE
T. Terazono, Y. Kaedei, Z. Namula, V. L. Vien, F. Tanihara, and T. Otoi
- 272 INTRACELLULAR NITRIC OXIDE LEVEL OF PORCINE OOCYTES IS NEGATIVELY CORRELATED WITH OOCYTE MATURATION RATE AND CUMULUS EXPANSION INDEX IN A CHEMICALLY DEFINED MEDIUM
T. Uozumi and H. Funahashi
- 273 CONSEQUENCE OF HIGH NONESTERIFIED FATTY ACID CONCENTRATIONS DURING BOVINE OOCYTE *IN VITRO* MATURATION ON mRNA TRANSCRIPT ABUNDANCE OF BLASTOCYSTS
V. Van Hoeck, P. Bermejo-Álvarez, D. Rizos, A. Gutierrez-Adan, S. Andries, P. E. J. Bols, and J. L. M. R. Leroy
- 274 EFFECT OF HOLDING ASPIRATED FLUID FROM IMMATURE EQUINE FOLLICLES ON OOCYTE MATURATION AND BLASTOCYST PRODUCTION AFTER INTRACYTOPLASMIC SPERM INJECTION
I. C. Velez, J. D. Norris, Y. H. Choi, S. Loux, and K. Hinrichs

- 275 EFFECT OF REACTIVE OXYGEN SPECIES DURING *IN VITRO* MATURATION ON PORCINE OOCYTE NUCLEAR MATURATION AND DEVELOPMENTAL COMPETENCE
Y. Yuan and R. Krishner
- 276 FIBROBLAST GROWTH FACTOR 2 PROMOTES BOVINE OOCYTE MEIOTIC MATURATION AND DEVELOPMENTAL COMPETENCE
K. Zhang, P. J. Hansen, and A. D. Ealy

SEXING

- 277 EFFECTS OF SEMINAL PLASMA ON SEX-SORTING BOVINE SPERM
C. A. Burroughs, R. W. Lenz, K. M. Evans, J. K. Graham, and G. E. Seidel
- 278 METHYLATION STATUS IN THE INTRAGENIC DIFFERENTIALLY METHYLATED REGION OF THE IGF2 LOCUS IN UNSORTED AND SEX-SORTED SPERM
J. O. Carvalho, V. A. Michalczechen-Lacerda, F. C. Rodrigues, R. Sartori, M. M. Franco, and M. A. N. Dode
- 279 *IN VITRO* DEVELOPMENT IN THREE CULTURE SYSTEMS OF BOVINE OOCYTES FERTILIZED WITH SEX-SORTED SPERM
B. Trigal, E. Gomez, M. Muñoz, J. N. Caamaño, S. Carrocera, D. Martin, J. Moreno, and C. Diez
- 280 BOVINE SPERM DNA FRAGMENTATION RATES AND EXTENDER PH: A DYNAMIC EXPERIMENTAL APPROACH
C. González-Marín, A. L. Travis, M. E. Kjelland, J. Gosálvez, C. López-Fernández, R. W. Lenz, and J. F. Moreno
- 281 EVALUATION OF *IN VITRO* EMBRYO PRODUCTION EFFICIENCY USING SEXED BULL SPERM SORTED WITH TWO TYPES OF CELL SORTER
H. Hayakawa and T.-I. Hirata
- 282 IDENTIFICATION OF SRY AND STEROIDOGENIC FACTOR-1 (SF1) GENES IN CANINE XY MALE-TO-FEMALE SEX DEVELOPMENTAL DISORDER
G. H. Jang, Y. H. Jeong, I. S. Hwang, Y. W. Jeong, S. H. Hyun, Y. W. Kim, T. Shin, E. B. Jeung, and W. S. Hwang
- 283 DNA FRAGMENTATION DYNAMICS AND POST-THAW MOTILITY OF WHITE-TAILED DEER SPERM
M. E. Kjelland, C. González-Marín, J. Gosálvez, C. López-Fernández, R. W. Lenz, K. M. Evans, and J. F. Moreno
- 284 *IN VITRO* FUNCTION OF FROZEN-THAWED BOTTLENOSE DOLPHIN (*TURSIOPS TRUNCATUS*) SPERM UNDERGOING SORTING AND RECRYOPRESERVATION
G. A. Montano, D. C. Kraemer, C. C. Love, T. R. Robeck, and J. K. O'Brien

SPERM INJECTION

- 285 THE EFFICIENCY OF INTRACYTOPLASMIC SPERM INJECTION VERSUS LASER-ASSISTED *IN VITRO* FERTILIZATION WITH FROZEN SPERM FOR RECOVERY TRANSGENIC C57BL/6 MOUSE STRAINS
A. C. Carstea, Z. Polgar, L. Kovacs, and A. Dinnyes
- 286 PRODUCTION OF NORMAL MICE USING LONG-TERM PRESERVED MOUSE SPERMATOZOA WITHOUT FREEZING
C. Li, E. Mizutani, T. Ono, and T. Wakayama

- 287 DEVELOPMENT OF DOMESTIC CAT EMBRYOS GENERATED BY INTRACYTOPLASMIC SPERM INJECTION EXPOSED TO IONOMYCIN ACTIVATION AND DIFFERENT CULTURE CONDITIONS
L. N. Moro and D. F. Salamone

STEM CELLS

- 288 INDUCING PLURIPOTENCY IN BOVINE SOMATIC STEM CELLS
M. K. Addison, G. T. Gentry Jr., R. A. Godke, and K. R. Bondioli
- 289 DERIVATION OF MOUSE EMBRYONIC STEM CELL FROM C57BL/6/EGFP STRAIN WITH FETAL CALF SERUM AND KNOCKOUT SERUM REPLACEMENT SUPPLEMENTATION MEDIUM
B. C. S. Campanha, C. S. Oliveira, D. M. Souza, C. P. Godoi, H. Fernandes, J. T. Ribeiro-Paes, J. M. Garcia, and M. F. G. Nogueira
- 290 GENERATION OF INDUCED PLURIPOTENT STEM CELLS FROM BOVINE FETAL FIBROBLAST CELLS BY DEFINED FACTORS
H. G. Cao, Y. Liu, H. Q. Yin, X. P. Sun, Y. S. Li, Y. Tao, Y. H. Zhang, and X. R. Zhang
- 291 ISOLATION AND CHARACTERIZATION OF MESENCHYMAL STEM CELLS DERIVED FROM HUMAN AMNIOTIC FLUID
S.-A. Choi, J.-H. Lee, K.-J. Kim, E.-Y. Kim, K.-S. Park, Y.-B. Park, X. Li, Y.-N. Ha, J.-Y. Park, and M.-K. Kim
- 292 GENERATION OF MOUSE INDUCED PLURIPOTENT STEM CELLS FROM VARIOUS GENETIC BACKGROUND BY SLEEPING BEAUTY TRANSPOSON-MEDIATED GENE TRANSFER
S. Muenthaisong, O. Ujhelly, E. Varga, A. C. Carstea, Z. Ivics, K. M. Pirity, and A. Dinnyes
- 293 MASS PRODUCTION OF *Nkx2.5*-POSITIVE CARDIAC PROGENITOR CELLS DERIVED FROM MOUSE EMBRYONIC STEM CELLS IN SLOW-TURNING LATERAL VESSEL FOR CELL TRANSPLANTATION AND DRUG TESTING
S. Rungarunlert, N. Klincumhom, C. Nemes, M. Techakumphu, M. K. Pirity, and A. Dinnyes
- 294 PRODUCTION AND CHARACTERIZATION OF PUTATIVE NUCLEAR TRANSFER EMBRYONIC STEM CELLS DERIVED FROM HANDMADE CLONED EMBRYOS USING EMBRYONIC STEM CELLS, LYMPHOCYTES, AND ADULT FIBROBLAST CELLS AS DONOR CELLS IN GOAT
R. Dutta, D. Malakar, K. Khate, and J. Akshay
- 295 THE SHAPE OF PORCINE NEURAL PROGENITOR CELL CELLULAR GENEALOGIES REVEALED BY TIME-LAPSE IMAGING
I. Faerge, A. Egeskov-Madsen, and P. Holm
- 296 PRODUCTION OF HEMIZYGOUS AND HOMOZYGOUS EMBRYONIC STEM CELL-DERIVED NEURAL PROGENITOR CELLS FROM THE TRANSGENIC ALZHEIMER GÖTTINGEN MINIPIG
V. J. Hall, J. Jakobsen, A. Gunnarsson, M. Schmidt, A. Lund Jørgensen, and P. Hyttel
- 297 DERIVATION AND CHARACTERIZATION OF THE TRANSGENIC SOMATIC CELL NUCLEAR TRANSFER-DERIVED BOVINE EMBRYONIC STEM CELLS
S. H. Jeong, H. S. Kim, H. Lee, K. J. Uh, S. H. Hyun, Y. W. Kim, T. Shin, E.-B. Jung, and W. S. Hwang

- 298 DIFFERENTIATION OF CANINE AMNIOTIC FLUID MESENCHYMAL STEM CELLS INTO NEURONAL PRECURSORS
E. Y. Kim, S. A. Choi, J. H. Lee, K. J. Kim, K. S. Park, Y. B. Park, Y. N. Ha, X. Li, J. Y. Park, and M. K. Kim
- 299 EPIGENETIC REPROGRAMMING OF PORCINE FIBROBLAST CELLS INDUCED BY STURGEON'S OOCYTE EXTRACT
S. Y. Kim, S. H. Park, M. R. Lee, H. J. Eun, T. S. Kim, S. B. Park, J. G. Yoo, C. S. Park, and J. H. Lee
- 300 ESTABLISHMENT AND CHARACTERIZATION OF RAT MESENCHYMAL STEM CELLS
T. H. Kim, B. G. Jeon, S. L. Lee, and G. J. Rho
- 301 IMPRINTED GENE EXPRESSION PATTERNS IN CULTURED PRIMORDIAL GERM CELLS DERIVED FROM PORCINE EMBRYOS BETWEEN DAY 25 AND 30
C. K. Lee, C. H. Park, K. J. Uh, J. K. Park, and H. S. Kim
- 302 IMPRINTED microRNA ARE DIFFERENTIALLY EXPRESSED IN ADULT MOUSE TESTES-DERIVED MALE GERM-LINE STEM CELLS
J. Y. Shin, Y. H. Jung, M. K. Gupta, S. J. Uhm, S. T. Shin, Y. M. Han, and H. T. Lee,
- 303 *IN VITRO* NEURONAL DIFFERENTIATION OF MESENCHYMAL STEM CELLS DERIVED FROM CANINE EAR SKIN
J. H. Lee, Y. M. Lee, G. H. Maeng, S. L. Lee, and G. J. Rho
- 304 RHYTHMIC BEATING OF HEART MUSCLE GENERATED FROM GOAT EMBRYONIC STEM CELLS
S. Garg, D. Malakar, R. Dutta, M. K. Jena, A. K. De, D. Kumar, and S. Sahu
- 305 CONSTRUCTION OF TRANSCRIPTION FACTOR GENES FOR REPROGRAMMING OF ADULT GOAT FIBROBLAST CELLS FOR PRODUCTION OF INDUCED PLURIPOTENT STEM CELLS
D. Kumar, D. Malakar, R. Dutta, S. Garg, S. Sahu, J. K. Kaushik, and A. K. Mohanty
- 306 *IN VITRO* CARDIOMYOGENIC AND NEUROGENIC DIFFERENTIATION OF MINIPIG BONE MARROW MESENCHYMAL STEM CELLS
B. Mohana Kumar, T. H. Kim, Y. M. Lee, G. H. Maeng, B. G. Jeon, S. A. Ock, and G. J. Rho
- 307 INVOLVEMENT OF THE CALCIUM SENSING RECEPTOR IN GROWTH AND PROLIFERATION OF STEM CELLS FROM EQUINE UMBILICAL CORD MATRIX
N. A. Martino, A. Lange Consiglio, F. Cremonesi, L. Valentini, M. Caira, A. C. Guaricci, B. Ambruosi, G. M. Lacalandra, R. L. Sciorsci, S. J. Reshkin, and M. E. Dell'Aquila
- 308 ISOLATION, DIFFERENTIATION, AND IMMUNOPHENOTYPIC CHARACTERIZATION OF MESENCHYMAL STEM CELLS DERIVED FROM EQUINE ADIPOSE TISSUE AND BONE MARROW
E. Iacono, B. Merlo, A. Spadari, G. Mari, F. Ricci, and P. Tazzari
- 309 DEVELOPMENT OF A CULTURE SYSTEM CAPABLE OF LONG-TERM MAINTENANCE OF BUFFALO (*BUBALUS BUBALIS*) EMBRYONIC STEM CELLS
R. Sharma, A. George, N. M. Kamble, K. P. Singh, S. K. Panda, M. S. Chauhan, S. K. Singla, R. S. Manik, and P. Palta
- 310 EFFECT OF TGF- β 1 ON THE SELF-RENEWAL OF BUFFALO (*BUBALUS BUBALIS*) EMBRYONIC STEM CELLS
N. M. Kamble, R. Sharma, A. George, S. K. Panda, M. S. Chauhan, S. K. Singla, R. S. Manik, and P. Palta

- 311 EXPRESSION OF PLURIPOTENT MARKER NUCLEOSTEMIN IN BUFFALO (*BUBALUS BUBALIS*) EMBRYOS AND EMBRYONIC STEM CELLS GENERATED THROUGH PARTHENOGENETIC ACTIVATION
K. P. Singh, R. Kaushik, R. Sharma, S. Kala, A. George, M. K. Singh, R. S. Manik, P. Palta, S. K. Singla, and M. S. Chauhan
- 312 ISOLATION, PROLIFERATION, AND CHARACTERIZATION OF MESENCHYMAL STEM CELLS FROM AMNIOTIC FLUID, AMNION, AND UMBILICAL CORD MATRIX IN THE DOG
L. Valentini, M. Filioli Uranio, A. Lange Consiglio, A. C. Guaricci, M. Caira, M. Ventura, A. L'Abbate, F. Cremonesi, and M. E. Dell'Aquila
- 313 UNSORTED, FRESHLY ISOLATED PORCINE ADIPOSE-DERIVED STEM CELLS ARE MORE EFFICACIOUS IN BONE HEALING COMPARED WITH PURIFIED CD34+ ADIPOSE-DERIVED STEM CELLS
M. Bionaz, T. Jensen, E. Monaco, Z. Dymon, A. J. Maki, W. L. Hurley, and M. B. Wheeler
- 314 ADIPOSE- AND BONE MARROW-DERIVED MESENCHYMAL STEM CELLS PRESENT LARGE SIMILARITIES IN TRANSCRIPTOME PRIOR TO AND DURING ADIPOGENIC AND OSTEOGENIC DIFFERENTIATION
E. Monaco, M. Bionaz, A. Lima, W. L. Hurley, and M. B. Wheeler
- 315 MELATONIN EFFECTS ON THE PROLIFERATION AND DIFFERENTIATION OF MOUSE EMBRYONIC STEM CELLS
Y.-M. Yoo and E.-B. Jeung
- 316 INDUCTION OF PIG INDUCED PLURIPOTENT STEM CELLS BY RECOMBINANT PROTEINS ENCODED BY DEFINED FACTORS
Y. H. Zhang, H. G. Cao, Y. S. Li, H. Q. Yin, X. P. Sun, T. Gui, S. F. Ji, Y. Tao, Y. Liu, and X. R. Zhang

SUPEROVULATION

- 317 PRELIMINARY REPORT ON THE USE OF A SLOW-RELEASE FORMULATION FOR ADMINISTRATION OF FOLLICLE-STIMULATING HORMONE IN 3 ASSISTED REPRODUCTION APPLICATIONS IN GOATS
H. Baldassarre, J. T. Pierson, S. Poulin, L. Sneek, D. Rogan, and D. K. Hockley
- 318 EFFICIENCY OF PROTOCOL P-36, ASSOCIATED WITH EQUINE CHORIONIC GONADOTROPIN OR LUTEINIZING HORMONE ADMINISTRATION, IN THE LAST DAY OF SUPERSTIMULATORY TREATMENT, IN NELLORE COWS
A. C. Oliveira, M. C. C. Mattos, M. R. Bastos, J. R. S. Gonçalves, L. H. Lunardi, R. S. Surjus, R. Sartori, and C. M. Barros
- 319 SUPEROVULATORY RESPONSE IN JAPANESE BLACK CATTLE BY A SINGLE SUBCUTANEOUS ADMINISTRATION OF PURE FOLLICLE-STIMULATING HORMONE DISSOLVED IN SALINE
S. Hiraizumi, N. Nishimoto, O. Ishiyama, H. Nishinomiya, T. Oikawa, F. Sano, N. Sakagami, M. Yamamoto, O. Nishino, K. Ooishi, T. Kurahara, and Y. Hashiyada
- 320 BASELINE AND SUPEROVULATION HYPERANDROGENISM AND FOLLICULAR DYNAMICS IN THE OSSABAW PIG SUGGEST AN ANIMAL MODEL FOR POLYCYSTIC OVARY SYNDROME
A. E. Newell-Fugate, J. N. Taibl, S. G. Clark, M. Alloosh, M. Sturek, and R. L. Krisher

- 321 OVARIAN SUPERSTIMULATION AND OOCYTE COLLECTION IN WOOD BISON, A THREAT-
ENED CANADIAN SPECIES
J. M. Palomino, R. B. McCorkell, M. R. Woodbury, M. P. Cervantes, B. M. Toosi, and G. P. Adams
- 322 INDUCTION OF SUPEROVULATION IN PROESTRUS DOGS USING SERUM GONADOTRO-
PIN OF PREGNANT MARES AND HUMAN CHORIONIC GONADOTROPIN
K. S. Park, K. J. Kim, S. A. Choi, J. H. Lee, E. Y. Kim, Y. B. Park, Y. N. Ha, X. Li, J. Y. Park, and M.
K. Kim
- 323 EFFICIENCY OF CLOPROSTENOL-INDUCED LUTEOLYSIS IN SUPEROVULATED COWS
J. H. M. Viana, M. S. B. Vargas, L. G. B. Siqueira, B. R. C. Alves, A. P. Oliveira, E. D. Souza, and L.
S. A. Camargo

TRANSGENESIS

- 324 NEGATIVE SELECTION DOES NOT FURTHER INCREASE THE EFFICIENCY OF A PRO-
MOTER TRAP
B. P. Beaton and K. D. Wells
- 325 GENERATION OF A CLONED GREEN FLUORESCENT PROTEIN (GFP) EXPRESSING TRANS-
GENIC SHEEP FOR MUSCLE STEM CELL GRAFT EXPERIMENTS
L. Boulanger, P. Chavatte-Palmer, D. Lebouhris, N. Daniel, Y. Heyman, L. Gall, N. Borenstein, and C.
Cotinot
- 326 CONSTRUCTION OF A SPLICING-DEPENDENT SELECTABLE MARKER FOR GENE TAR-
GETTING
S. Cernea and K. Wells
- 327 HIGH EFFICIENCY SWINE CLONING USING MONOGENIC AND POLYGENIC POOLS OF
GENETICALLY MODIFIED CELLS
D. F. Carlson, J. R. Dobrinsky, and S.C. Fahrenkrug
- 328 ANALYSIS OF FLUOROPHORE-EXPRESSING SPERMATOZOA FROM TRANSGENIC BOARS
PRODUCED BY SLEEPING BEAUTY TRANSPOSITION
W. Garrels, S. Holler, C. Struckmann, U. Taylor, C. Ehling, D. Rath, H. Niemann, Z. Ivics, and W. A.
Kues
- 329 GENETIC TARGETING OF THE PORCINE $\alpha 1$, 3-GALACTOSYLTRANSFERASE GENE IN
FETAL FIBROBLAST CELLS USING ZINC FINGER NUCLEASES
J. Hauschild, A. L. Queisser, J. W. Carnwath, G. Cost, Y. Santiago, E. Rebar, P. Gregory, H. Niemann,
and B. Petersen
- 330 REDUCED HYPERACUTE REJECTION BY TRIPLE TRANSGENIC EXPRESSION OF HUMAN
COMPLEMENT REGULATORY FACTORS (hDAF and hCD59) AND H-TRANSFERASE
Y. H. Jeong, G. H. Jang, I. S. Hwang, C. H. Park, H. J. Lee, Y. W. Jeong, S. H. Hyun, Y. W. Kim, T.
Shin, E.-B. Jeung, and W. S. Hwang
- 331 BLOOD ANTIGEN-COMPATIBILITY BETWEEN CLONED BEAGLES AND TRANSGENIC
CLONED BEAGLES
G. A. Kim, H. J. Oh, J. E. Park, M. J. Kim, E. J. Park, H. J. Kim, G. Jang, and B. C. Lee
- 332 INDUCIBLE RED FLUORESCENT PROTEIN (RFP) EXPRESSION IN PORCINE FIBROBLASTS
AND TRANSGENIC CLONED EMBRYOS USING PIGGYBAC TRANSPOSITION
S. J. Kim, O. J. Koo, S. J. Park, J. H. Moon, D. K. Kwon, J. T. Kang, M. N. Gomez, M. Atikuzzaman,
B. C. Lee, and G. Jang

- 333 OCT-4 EXPRESSION ANALYSIS IN F₀ AND F₁ PORCINE OG2 TRANSGENICS
M. Nowak-Imialek, W. A. Kues, B. Petersen, A. Lucas-Hahn, D. Herrmann, E. Lemme, M. Oropeza, J. W. Carnwath, and H. Niemann
- 334 CONSTRUCTION OF A GENETICALLY ENGINEERED PIG EXPRESSING GREEN FLUORESCENT PROTEIN (GFP)-LABELLED PROTEASOMES
C. W. O’Gorman, J. Zhao, M. S. Samuel, E. M. Walters, R. S. Prather, P. Sutovsky, M. Sutovsky, and K. D. Wells,
- 335 CYTOPLASMIC MICROINJECTION OF EXOGENOUS DNA IN *IN VITRO* AND *IN VIVO* DERIVED SHEEP EMBRYOS
F. Pereyra-Bonnet, A. Gibbons, M. Cueto, R. Bevacqua, L. Escobar, and D. Salamone
- 336 TRANSGENIC Stra8-EYFP PIGS: A MODEL FOR DEVELOPING MALE GERM CELL TECHNOLOGIES
J. R. Sommer, L. Jackson, S. Simpson, E. B. Collins, J. Piedrahita, and R. M. Petters
- 337 PRODUCTION OF TRANSGENIC SHEEP USING RECOMBINANT LENTIVIRUS MICROINJECTION OF *IN VIVO* PRODUCED EMBRYOS
K. Tessanne, C. Long, T. Spencer, C. Satterfield, and M. Westhusin
- 338 BACTERIAL ARTIFICIAL CHROMOSOME (BAC) VECTORS FACILITATE EFFICIENT GENE TARGETTING IN KIDNEY CELLS OF PIG
K. Wallner, A. Wuensch, K. Burkhardt, M. Kurome, B. Kessler, P. Fezert, A. Richter, H. Nagashima, N. Klymiuk, and E. Wolf
- 339 BIOENGINEERING OF THE MAMMARY GLAND OF LIVESTOCK: INCREASED PROPEPTIDE PROCESSING OF FACTOR IX IN THE MILK OF TRANSGENIC PIGS BY CO-EXPRESSION OF FURIN
J. Zhao, E. Walters, J. Calcaterra, J. Ross, L. Spate, M. Samuel, A. Rieke, C. Murphy, S. Butler, W. Velander, and R. Prather

POSTER SESSION AUTHOR INDEX

Author Index to Volume 23 Issue 1

- Aardema, H. 189
Abdoon, A. S. 160
Abele, E. 160
Adachi, N. 124
Adams, G. P. 183, 190, 219, 257
Adamsen, J. 130
Adan, A.-G. 192
Addison, M. K. 242
Agca, C. 190
Agca, Y. 190
Aguiar, L. H. 213
Ahn, H.-J. 191
Aidar, F. 180
Aikawa, Y. 173, 205
Akagi, S. 119, 124, 126, 132, 133, 137, 199
Akai, T. 173
Akiyoshi, T. 146
Akkoc, T. 190
Akshay, J. 244
Aksu, S. 190
Aktoprakligil Aksu, D. 190
Al Naib, A. 197
Al Yacoub, A. N. 141
Alberio, R. H. 149
Albornoz, M. 120, 121, 123
Alloosh, M. 256
Alonso, A. 144
Altmäe, S. 185
Alvarado, E. 182
Alvarez, R. H. 176
Alves, B. R. C. 258
Alves, M. 180, 212
Amaral, R. S. 181
Amati, F. 221
Ambruosi, B. 221, 233, 250
Ampuero, A. 161
An, J.-H. 200
Andrade, R. C. 188
Andreazzi, M. A. 213
Andries, S. 204, 234
Angelo, M. D. 212
Angulo, J. 191
Ansari-Pirsaraei, Z. 201
Anzar, M. 148, 215
Aoki, M. 124
Aoyagi, Y. 162
Aparicio, I. M. 157, 227
Arias Alvarez, M. 185
Arias, M. E. 123
Arnold, G. J. 81, 166, 232
Artunduaga, M. A. T. 183
Asghari, F. 201
Ashkar, F. 108
Asparrin, M. 182
Assumpção, M. E. O. A. 143, 151, 215, 216
Atabay, E. P. 156
Atikuzzaman, M. 169, 262
Ayres, H. 117
Azevedo, J. M. 193
Babu, K. R. 211
Baca Castex, C. 144
Bae, B.-S. 182
Bae, D. W. 121
Bae, H. K. 120
Bachr, A. 196
Bagis, H. 190
Baldassarre, H. 120, 121, 123, 255
Bang, J. I. 121, 225, 226
Baptista Sobrinho, C. A. 218
Barfield, J. P. 139
Barnabe, R. C. 143, 151, 152, 215, 216, 218
Barnabe, V. H. 143, 151, 152, 215, 216, 218
Barreto, J. B. 155
Barros, C. M. 174, 175, 191, 222, 255
Baruselli, P. S. 213
Basso, A. C. 210
Bastos, M. R. 110, 177, 178, 255
Bateman, H. L. 153
Batista, L. 180
Batista, R. I. T. P. 213
Bauer, B. K. 107, 146, 172
Baulain, U. 184
Beaton, B. P. 258
Becerra, J. J. 204, 224
Beckett, D. 212
Beck, J. 202
Bender, K. 209
Berisha, B. 160
Bermejo-Álvarez, P. 234
Bermejo-Alvarez, P. 192
Berruti, G. 108
Bertolini, L. R. 155
Bertolini, M. 124, 155, 213
Bertolla, R. P. 218
Besenfelder, U. 143
Betts, E. 181
Bevacqua, R. J. 107, 168
Bevacqua, R. 263
Bicudo, S. D. 117
Bijttebier, J. 202
Binetti, F. 233
Bionaz, M. 210, 253
Biswas, D. 165, 207, 208
Blake, S. M. 138
Block, J. 176
Bó, G. 163
Bó, G. A. 202
Boccia, L. 167, 168
Boecker, W. 196
Boileau, P. 154
Boiti, C. 185
Bols, P. E. J. 186, 204, 218, 234
Bondioli, K. R. 140, 163, 191, 242
Bonilla, A. Q. S. 165
Bordignon, V. 120, 121, 123
Borenstein, N. 259
Borges, A. M. 183
Borowicz, P. P. 161
Boulanger, L. 259
Boyer, G. 154
Brandão, F. Z. 188
Brandt, Y. 203
Brat, R. 154
Brecchia, G. 185
Brem, G. 143
Brennan, L. 209
Brevini, T. A. L. 108, 187
Brown, M. E. 214
Bruschi, J. H. 188
Bryla, M. 140, 142, 220
Buarpong, S. 153
Bueno da Silva, R. 222
Buratini, J., Jr 32, 191, 222
Burkhardt, K. 264
Burks, D. J. 216
Burns, G. 222
Burroughs, C. A. 236
Burvenich, C. 194
Butler, S. 265
Caamaño, J. N. 226, 237
Caetano, C. V. F. 111, 114
Cainzo, J. 224
Cainzos, J. 204
Caira, M. 233, 250, 252
Caixeta, E. S. 222
Calcaterra, J. 265
Callesen, H. 125, 130
Camacho, J. 161
Camargo, L. S. A. 122, 203, 213, 258
Camous, S. 219
Campanha, B. C. S. 242
Campbell, K. H. S. 145
Cánepa, M. J. 232
Cano, A. 149
Cao, H. G. 170, 223, 243, 254
Cao, Z. B. 170, 173, 223

- Carambula, S. 176
 Cardoso, P. B. S. 152
 Carlson, D. F. 260
 Carneiro, I. S. 155
 Carnwath, J. W. 260, 262
 Carrocera, S. 226, 237
 Carstea, A. C. 240, 243
 Carter, F. 162
 Carvalho, J. O. 237
 Carvalho, R. R. 179
 Carwell, D. B. 140, 163
 Casanova, D. 111
 Castaneira, C. 144
 Castilho, A. C. S. 191, 222
 Catalá, M. 226
 Catalá, M. G. 223
 Catalá, M. G. 228
 Cernea, S. 259
 Cervantes, M. P. 183, 257
 Chandler, J. 214
 Chashnidel, Y. 201
 Chauhan, M. S. 135, 172, 211, 251, 252
 Chavatte-Palmer, P. 64, 154, 219, 259
 Chen, J. R. S. 210
 Chen, J. W. 173, 223
 Cheong, H. T. 120, 187
 Chikuni, K. 137
 Chileno, M. A. 204
 Chileno, M. 224
 Cho, G. J. 116
 Cho, K. H. 116
 Cho, S. J. 121, 225, 226
 Cho, Y. G. 116
 Choi, B. H. 226
 Choi, I. 145
 Choi, K.-C. 192, 193, 201
 Choi, S. A. 246, 257
 Choi, S.-A. 243
 Choi, Y. H. 122, 235
 Chon, R. H. 129
 Christenson, R. K. 177
 Chun, Y. 128, 136
 Clark, S. G. 159, 256
 Clemente, M. 199
 Coelho, S. G. 183
 Colato, C. 120, 121, 123
 Cole, K. 110
 Colleoni, S. 127
 Collins, E. B. 264
 Combe, A. 108
 Condori, R. L. 204, 224
 Constant, C. H. O. 213
 Converse, S. J. 214
 Coppieters, W. 197
 Cornillie, P. 194
 Cortada, C. N. M. 218
 Cost, G. 260
 Cotinot, C. 259
 Coutinho da Silva, M. A. 110
 Cremer, T. 94
 Cremonesi, F. 250, 252
 Crenshaw, M. 194
 Crichton, E. G. 148
 Crispo, M. 217
 Crocomo, L. F. 147, 173
 Crosier, A. 214
 Crusco, S. E. 152
 Cruz, L. C. 156
 Cuello, C. 150
 Cueto, M. 263
 Curnow, E. C. 224
 Cushman, R. A. 177
 Cutaia, L. 163
 da Silva, V. M. F. 181
 Dahirel, M. 154
 Dalmazzo, A. 143, 151, 152, 215, 216, 218
 Dalvit, G. 144
 D'Angelo, M. 180
 Dang-Nguyen, T. Q. 199
 Daniel, N. 259
 Davies, C. J. 221
 De, A. K. 249
 De Blasi, M. 167, 168
 de Castro, T. 163
 De Clercq, K. 180
 de Frutos, C. 149
 De Leeuw, I. 180
 De los Reyes, M. 225
 de Morais, H. 188
 de Sousa, R. V. 132
 de Souza, J. C. 188
 de Spiegelaere, W. 194
 Deb, G. K. 121, 225, 226
 Debus, N. 219
 Deldar, H. 201
 Delk, K. 181
 Dell'Aquila, M. E. 221, 233, 250, 252
 Demant, M. 166
 Deshmukh, R. S. 125
 Dey, S. R. 225, 226
 Di Croce, F. A. 111, 119
 Di Francesco, S. 167, 168
 Diao, Y. F. 184
 Dias, L. M. K. 189
 Diaz, A. 161
 Diaz, H. 161
 Diederich, M. 184
 Diez, C. 226, 237
 Dinnyes, A. 144, 240, 243, 244
 Dobrinsky, J. R. 260
 Dochi, O. 118, 209
 Dode, M. A. N. 193, 237
 Dorshorst, T. 212
 dos Santos-Neto, P. C. 114, 115
 Dresser, B. L. 142, 148, 150
 Duchi, R. 127
 Dumas, C. 148, 150
 Duran, P. G. 156
 Dutta, R. 244, 249
 Dymon, Z. 253
 Ealy, A. D. 164, 176, 236
 Eberlin, M. N. 160
 Eduardo, H. P. 191
 Egerszegi, I. 144
 Egeskov-Madsen, A. 245
 Ehling, C. 260
 El-Beyrouthi, N. 120, 121
 El-Gayar, M. 141
 Emanuelli, I. P. 174, 175, 213
 Escobar, L. 263
 Esperon, E. 178
 Estrada, C. 178
 Etcharren, V. 144
 Eun, H. J. 129, 247
 Evangelista, J. J. F. 175
 Evans, A. C. O. 1
 Evans, K. M. 236, 239
 Faerge, I. 245
 Fahrenkrug, S. C. 260
 Fair, T. 157, 162, 197, 209, 227
 Favetta, L. A. 108
 Favoreel, H. 180
 Favoreto, M. G. 176
 Fayrer-Hosken, R. A. 181
 Felmer, R. F. 123
 Feltrin, C. 124, 155
 Fernandes, C. B. 231
 Fernandes, C. 185
 Fernandes, H. 242
 Fernandez-Martin, R. 158, 168
 Fernandez-Martín, R. 107
 Ferreira, A. R. 193
 Ferreira, C. R. 160
 Ferreira, H. N. 160
 Feugang, J. M. 194
 Fezert, P. 264
 Figueiredo, J. R. 40
 Filioli Uranio, M. 233, 252
 Filioli Uranio, M. M. 221
 Filliers, M. 194
 Fischer, B. 154
 Folger, J. K. 1
 Fonseca, E. 157
 Fonseca, J. F. 117, 188
 Ford, J. J. 177
 Forde, N. 162, 199
 Forell, F. 213
 Fortune, J. E. 15
 Franco, M. M. 132, 193, 237
 Frazer, L. M. 206

- Freire, R. R. 155
 Freitas, V. J. F. 188
 Freking, B. A. 177
 French, J. 214
 Fröhlich, T. 81
 Fröhlich, T. 166
 Fu, L. 199
 Fujii, W. 227
 Fujimaki, K. 126
 Fujiwara, A. 126
 Fujiwara, H. 162
 Fukunari, K. 132
 Funahashi, H. 113, 118, 207, 210, 221, 229, 234
 Funakoshi, D. 179
- Gadea, J. 216, 217
 Gadella, B. M. 189
 Gajda, B. 140, 142, 159
 Galiguís, J. 142
 Gall, L. 259
 Galli, C. 127
 Gambini, A. 166
 Gandolfi, F. 108, 187
 Gao, F. 231
 Gao, Y. 155
 Garcia, J. M. 242
 Garcia-Garcia, R. M. 185
 Garcia-Herreros, M. 157, 227
 García-Pintos, C. 114, 115
 Garg, S. 249
 Garrels, W. 260
 Gasparrini, B. 167, 168
 Gaudêncio Neto, S. 213
 Gauly, M. 141
 Gentry, G. T., Jr 140, 163, 191, 242
 George, A. 135, 211, 251, 252
 Geshi, M. 126, 133, 164, 199, 205
 Giasseti, M. I. 164
 Gibbons, A. 263
 Gil, M. A. 150
 Gilchrist, R. B. 23
 Gioso, M. M. 203
 Godke, R. A. 140, 150, 163, 191, 242
 Godoi, C. P. 242
 Góes, P. A. A. 143, 151, 152, 215, 216, 218
 Golding, M. C. 200
 Goldwasser, M. 159
 Gomes, G. C. 111, 114
 Gomez, E. 226, 237
 Gómez, M. C. 142, 148, 150
 Gomez, M. N. 169, 262
 Gomis, J. 150
 Gonçalves, J. R. S. 177, 255
 Gonçalves, R. F. 160
 González, R. 203
 González-Marín, C. 238, 239
- Goossens, K. 194
 Goovaerts, I. G. F. 204
 Gosálvez, J. 238, 239
 Gozzo, F. C. 160
 Grad, I. 142
 Graham, J. K. 145, 236
 Gratton, G. 215, 219
 Grazul-Bilska, A. T. 161
 Green, J. A. 138
 Gregoire, A. 182
 Gregory, P. 260
 Greyling, J. P. C. 170
 Griffeth, R. J. 216
 Grimbleby, C. 212
 Guan, J. Y. 231
 Guardieiro, M. M. 110
 Guaricci, A. C. 250, 252
 Guenther, J. N. 178
 Gui, T. 173, 223, 254
 Gunnarsson, A. 245
 Gupta, M. K. 230, 248
 Gurgel, J. R. C. 143, 151, 215, 216
 Gurgel, J. R. 218
 Gutierrez-Adan, A. 149, 199, 234
 Guzey, Y. Z. 168
- Ha, A. N. 121
 Ha, Y. N. 246, 257
 Ha, Y.-N. 243
 Haaf, T. 184, 228
 Habermann, F. A. 232
 Hall, V. J. 245
 Hall, V. 155
 Hamilton, C. K. 108
 Hammami, S. 223, 228
 Han, R. X. 184
 Han, Y. M. 230, 248
 Han, Y.-J. 200
 Hanada, H. 137
 Hanafusa, Y. 124
 Hansen, P. J. 165, 174, 176, 236
 Hansmann, T. 228
 Hanstedt, A. 160
 Haraguchi, S. 119, 126, 199
 Harris, J. 119
 Hartman, D. L. 122
 Hashiyada, Y. 119, 164, 173, 205, 256
 Hasler, J. F. 180
 Hassoun, P. 219
 Hattori, H. 173
 Hauschild, J. 260
 Havlicek, V. 143
 Hayakawa, H. 238
 Hayashi, K.-G. 195
 Hayes, E. S. 224
 Heinzmann, J. 184, 228
 Henry, M. 151
 Hensey, C. 227
- Herradon, P. G. 204, 224
 Herrera, C. 131
 Herrera, E. Y. 149
 Herrick, J. R. 229
 Herrmann, D. 262
 Heyman, Y. 259
 Hill, R. A. 163
 Hinrichs, K. 122, 235
 Hiraizumi, S. 256
 Hirako, M. 124, 126, 164
 Hirata, T.-I. 238
 Hirayama, M. 173, 205
 Hiriart, M. I. 107, 168
 Hisaichi, K. 206
 Hockley, D. K. 255
 Holler, S. 260
 Holm, P. 245
 Holtz, W. 141
 Hong, S. G. 134
 Hope, K. 112
 Hosoe, M. 195, 205
 Hosokawa, Y. 132
 Hua, M. 231
 Huaman, E. 182
 Huaman, H. 161
 Huan, Y. J. 133
 Huanca, T. 161
 Huanca, W. 161, 204, 224
 Hufana-Duran, D. 156
 Humblot, P. 197
 Hurley, W. L. 253
 Hwang, I. S. 120, 239, 261
 Hwang, K.-A. 193
 Hwang, K.-C. 200
 Hwang, S. 156, 200
 Hwang, W. S. 128, 134, 239, 246, 261
 Hyttel, P. 125, 155, 245
 Hyun, S. H. 128, 134, 165, 207, 208, 239, 246, 261
 Hyun, S.-H. 182, 195
- Iacono, E. 250
 Ideta, A. 162
 Iguma, L. T. 122, 203, 213
 Im, G.-S. 156
 Imai, K. 173, 199, 205
 Imakawa, K. 162
 Inaba, Y. 119, 164, 199, 205, 209
 Ireland, J. J. 1
 Ireland, J. L. H. 1
 Ishida, S. 118
 Ishii, T. 198
 Ishiyama, O. 256
 Ishizaki, H. 124
 Isom, S. C. 138
 Ito, J. 126, 220
 Ivics, Z. 243, 260

Izquierdo, D. 223, 228
 Izquierdo-Rico, M. J. 221, 229

Jaakma, Ü. 112
 Jaakma, Ü. W. 185
 Jackson, L. 264
 Jacobson, C. C. 122
 Jakobsen, J. 245
 Jalakas, M. 112
 Jammes, H. 64
 Jang, D. M. 187
 Jang, G. 134, 158, 169, 261, 262
 Jang, G. H. 239, 261
 Jang, S. H. 208
 Jarazo, J. 166
 Jaswant, S. 206
 Jena, M. K. 249
 Jensen, T. 253
 Jeon, B. G. 247, 249
 Jeon, I.-S. 200
 Jeon, Y.-B. 165
 Jeong, S. H. 128, 246
 Jeong, Y. H. 134, 239, 261
 Jeong, Y. W. 128, 134, 239, 261
 Jeung, E. B. 239
 Jeung, E.-B. 128, 134, 165, 191, 192, 195, 196, 201, 254, 261
 Ji, M. R. 187
 Ji, S. F. 173, 223, 254
 Jiang, D. D. 133
 Jiang, J. 171
 Jimenez-Krassel, F. 1
 Jin, D. I. 184
 Johnson, A. E. 112
 Johnson, M. L. 161
 Johnson, S. E. 164
 Jung, E. J. 128
 Jung, E.-B. 246
 Jung, E.-M. 195, 196
 Jung, T. K. 134
 Jung, Y. H. 248
 Junien, C. 64

Kaart, T. 112
 Kaedei, Y. 115, 126, 233
 Kala, S. 252
 Kamble, N. M. 135, 251
 Kamimura, S. 179
 Kan, M. 146
 Kanae, M. 206
 Kanai, Y. 156
 Kandil, O. M. 160
 Kaneda, M. 119, 126, 133, 199
 Kang, H. G. 113
 Kang, J. T. 169, 262
 Kang, S. 139
 Kano, K. 227
 Kariya, Y. 124

Karlanian, F. 166
 Kashiwazaki, N. 126, 220
 Kaushik, J. K. 249
 Kaushik, R. 172, 252
 Kaya, A. 198
 Kehrlé, A. 111, 114
 Kelly, J. M. 206
 Kessler, B. 127, 196, 264
 Khate, K. 244
 Kim, B. H. 134
 Kim, B. 169
 Kim, E. Y. 246, 257
 Kim, E.-Y. 200, 243
 Kim, G. A. 134, 158, 261
 Kim, G.-H. 165
 Kim, H. J. 261
 Kim, H. R. 184
 Kim, H. S. 246, 247
 Kim, I. H. 113
 Kim, J. Y. 120
 Kim, K. J. 246, 257
 Kim, K.-J. 243
 Kim, M. J. 134, 158, 261
 Kim, M. K. 246, 257
 Kim, M.-K. 243
 Kim, N. 139
 Kim, S. J. 169, 262
 Kim, S. W. 186
 Kim, S. Y. 129, 247
 Kim, S.-D. 182
 Kim, T. H. 247, 249
 Kim, T. S. 129, 247
 Kim, Y. W. 128, 134, 239, 246, 261
 Kim, Y.-K. 196
 Kimura, H. 116
 Kimura, K. 176
 Kind, K. L. 206
 King, W. A. 108
 Kirscher, L. 212
 Kitahara, G. 179
 Kizil, S. H. 190
 Kjelland, M. E. 238, 239
 Kleemann, D. O. 206
 Kleim, H. 160
 Klincumhom, N. 244
 Klymiuk, N. 127, 196, 264
 Kobayashi, S. 173, 205
 Kodama, R. 115
 Kohata, C. 207, 229
 Kojima, T. 176
 Kōks, S. 185
 Kong, I. K. 121, 225, 226
 Konishi, K. 173, 205
 Koo, O. J. 134, 169, 262
 Koura, M. 152
 Kovacs, L. 240
 Koyama, H. 118, 209
 Kraemer, D. C. 240

Kragh, P. M. 130
 Krisher, R. L. 256
 Krisher, R. 235
 Kruger, M. 181
 Krzysztofowicz, E. 142
 Kubo, M. 124
 Kues, W. A. 260, 262
 Kues, W. 184
 Kumar, D. 249
 Kurahara, T. 256
 Kurome, M. 127, 196, 264
 Kurykin, J. 112
 Kuzmany, A. 143
 Kwak, S. S. 207, 208
 Kwon, D. K. 169, 262
 Kwon, T. H. 225
 Kwon, Y. S. 121
 Kyuwa, S. 198

La Rosa, I. 158
 L'Abbate, A. 252
 Lacalandra, G. M. 233, 250
 Lad, H. 185
 Laguna-Barraza, R. 149
 Lagutina, I. 127
 Lana, A. M. Q. 183
 Landim-Alvarenga, F. C. 147, 173, 231
 Landry, R. D. 171
 Langbeen, A. 186
 Lange Consiglio, A. 250, 252
 Laurincik, J. 125
 Laurincikova, N. 125
 Layport, B. 212
 Lazzari, G. 127
 Lebouhris, D. 259
 Lechniak-Cieslak, D. 230
 Le Bourhis, A. D. 197
 Lee, B. C. 134, 158, 169, 261, 262
 Lee, B. 169
 Lee, C. K. 247
 Lee, D.-K. 200
 Lee, E. 139
 Lee, H. C. 113
 Lee, H. J. 134, 261
 Lee, H. T. 230, 248
 Lee, H. 246
 Lee, H.-C. 156, 200
 Lee, J. H. 129, 246, 247, 248, 257
 Lee, J. Y. 128
 Lee, J. 128, 136
 Lee, J.-H. 243
 Lee, K. B. 109
 Lee, M. R. 129, 247
 Lee, S. G. 128, 134
 Lee, S. L. 129, 186, 247, 248
 Lee, W. J. 129
 Lee, W. 128, 136
 Lee, Y. M. 186, 248, 249

- Lee, Y. S. 187
 Lehloeny, K. C. 170, 208
 Leibo, S. P. 139, 142
 Lemes, A. P. 110
 Lemme, E. 262
 Lenz, R. W. 236, 238, 239
 Leon, S. 182
 Leroy, J. L. M. R. 186, 204, 234
 Lessard, C. 215, 219
 Li, C. 138, 241
 Li, D. 183
 Li, H. 133
 Li, J.-C. 113
 Li, J. 125, 130
 Li, N. 171
 Li, R. 130
 Li, X. 243, 246, 257
 Li, Y. S. 170, 173, 223, 243, 254
 Li, Z. Y. 231
 Liang, L. 199
 Liang, Y. Y. 147
 Lim, D. 156
 Lima, A. 253
 Lima, P. F. 222
 Lima-Neto, J. F. 147, 173
 Liu, L. M. 231
 Liu, Y. 130, 170, 223, 243, 254
 Liu, Z. H. 133
 Lonergan, P. 1, 157, 162, 192, 197, 199, 209, 227
 Long, C. R. 171, 200
 Long, C. 109, 222, 264
 Longobardi, V. 167, 168
 Lopes, M. D. 231
 Lopes, P. S. 145
 López-Fernández, C. 238, 239
 López-Úbeda, R. 216, 217
 Lopez-Vidriero, I. 199
 Lorenzo, P. L. 185
 Losinno, L. 131, 144
 Loureiro, B. 176
 Loux, S. 235
 Love, C. C. 240
 Lu, F. 171
 Lucas-Hahn, A. 125, 262
 Lucy, M. C. 165
 Lunardi, L. H. 255
 Lund Jørgensen, A. 245
 Luño, V. 216, 217
 Lynch, W. 214
- Macaulay, A. 108
 Machado, G. M. 193
 Machado, J., Jr 213
 Machado, M. F. 222
 Machado, M. 124
 Machado, R. 173
 Maculan, R. 179
- Madureira, E. H. 111, 114
 Maeng, G. H. 129, 248, 249
 Maes, D. 202
 Maffei, S. 108
 Magalhães, L. C. O. 147, 173
 Mahoete, N. 170
 Maia, A. L. R. S. 188
 Majas, L. 112
 Maki, A. J. 159, 253
 Malakar, D. 244, 249
 Malard, P. F. 124
 Mamo, S. 197
 Manik, R. S. 135, 172, 211, 251, 252
 Mansouri-Attia, N. 162
 Mao, J. 131
 Mapeka, M. H. 208
 Mapletoft, R. J. 148, 190
 Mari, G. 250
 Marinho, L. R. S. 213
 Marino, C. T. 189
 Martin, D. 237
 Martinez, A. C. 176
 Martinez, A. 178
 Martinez, E. A. 150
 Martino, N. A. 221, 233, 250
 Martins, C. M. 180
 Martins, Júnior A. 147
 Martins, L. R. 231
 Martín, D. 226
 Masenya, M. B. 144
 Maside, C. 150
 Matás, C. 216, 217
 Matoba, S. 209
 Matsuda, J. 152
 Matsukawa, K. 119, 132
 Matsuyama, S. 176
 Matthews, K. 212
 Matthiesen, M. 232
 Mattos, M. C. C. 177, 178, 255
 Maturana Filho, M. 111, 114
 Mazilli, M. 187
 McCorkell, R. B. 257
 McCorkell, R. 215
 McCue, P. M. 139
 Mehta, J. P. 199
 Meinecke-Tillmann, S. 160
 Mellano, J. C. 123
 Mellano, M. A. 120
 Mellano, A. 120
 Mellano, F. 120, 121
 Mellano, J. C. 120, 121
 Mellano, J. I. 121, 123
 Mellano, M. A. 121, 123
 Mellano, M. L. 120, 121, 123
 Mellano, P. H. 120, 121, 123
 Meltsas, A. 121, 123
 Memili, E. 198
- Menchaca, A. 114, 115, 163, 217
 Mendizabal, M. 210
 Merckx, E. 204
 Merlo, B. 250
 Meschiatti, M. A. P. 110
 Mezzalira, A. 213
 Michalczechen-Lacerda, V. A. 132, 237
 Miglino, M. A. 157
 Miguez, P. H. P. 111, 114
 Miles, J. R. 177
 Millan, P. 185
 Minto, B. W. 231
 Miragaya, M. 131, 144
 Miyashita, S. 209
 Miyata, K. 209
 Mizutani, E. 119, 133, 199, 241
 Moawad, A. R. 145
 Mogas, T. 226
 Mogas, T. 228
 Mohammadi-Sangcheshmeh, A. 201
 Mohana Kumar, B. 186, 249
 Mohanty, A. K. 249
 Monaco, E. 253
 Montano, G. A. 240
 Moon, J. H. 169, 262
 Moraes, E. A. 145
 Moraes, M. E. A. 175
 Morató, R. 226, 228
 Moreno, J. F. 238, 239
 Moreno, J. 237
 Moro, L. N. 241
 Morovic, M. 125
 Mossa, F. 1
 Moura, A. A. A. 175
 Moura, L. C. O. 151
 Mourão, G. B. 177
 Mphaphathi, M. L. 144, 208
 Mu, Y. S. 133
 Muenthaisong, S. 243
 Mullaart, E. 197
 Munoz, G. A. 123
 Muñoz, M. 226, 237
 Munyai, P. H. 144
 Muraki, M. 198
 Murphy, C. N. 107, 146, 172
 Murphy, C. 265
 Muruvi, W. 15
 Mutschler, W. 196
 Mutto, A. A. 232
 Muzaffar, M. 135, 172
- Na, R. H. 199
 Nagai, T. 126, 133, 147, 199
 Nagashima, H. 127, 196, 264
 Naito, K. 227
 Nakajima, N. 126
 Nakamura, Y. 137, 162
 Namula, Z. 115, 126, 233

- Nasser, L. F. 210
 Nauwynck, H. 180, 202
 Navarette-Santos, A. 154
 Nedambale, T. L. 144, 170, 208
 Nemes, C. 244
 Neto, J. B. S. 155
 Neves, M. M. 151
 Newell-Fugate, A. E. 256
 Newsom, E. M. 165
 Nichi, M. 143, 151, 152, 181, 215, 216, 218
 Nicolau, S. S. 189
 Niemann, H. 125, 184, 228, 260, 262
 Nirasawa, K. 137
 Nishimoto, N. 256
 Nishimura, T. 227
 Nishino, O. 256
 Nishinomiya, H. 256
 Nobre, T. M. M. 155
 Noguchi, Y. 152
 Nogueira, M. F. G. 174, 175, 242
 Noh, E.-H. 200
 Norman, J. 212
 Norris, J. D. 122, 235
 Nowak-Imialek, M. 262
 Núñez, R. 163
 Nunez, T. 182
- O'Brien, J. K. 240
 Ock, S. A. 249
 Oe, M. 137
 Oestrup, E. 125
 Oestrup, O. 125
 O'Gaora, P. 199
 O'Gorman, C. W. 263
 O'Gorman, C. 138
 Oh, H. J. 134, 158, 261
 Oh, K. B. 156
 O'Hara, L. 197
 Ohnishi-Kameyama, M. 137
 Ohtake, M. 173, 205
 Oikawa, T. 256
 Okazaki, T. 117, 146
 Okudaira, Y. 210
 Olby, N. 56
 Oliveira, A. C. S. 177
 Oliveira, A. C. 255
 Oliveira, A. P. 258
 Oliveira, A. 157
 Oliveira, C. A. 181, 189
 Oliveira, C. M. 157
 Oliveira, C. S. 242
 Oliveira, L. G. 117
 Oliveira, L. J. 162, 165
 Oliveira, M. E. F. 117
 Oliveira, T. A. 177, 178
 Oliver, W. T. 177
- Olivera, R. 107, 137, 166
 Olsen, G. 214
 Onal, A. G. 168
 Ongaratto, F. L. 202
 Ono, T. 241
 Ooishi, K. 256
 Orlandi, C. M. B. 160
 Oropeza, M. 262
 Osamu, D. 206
 O'Shea, L. C. 227
 Østrup, O. 125, 130
 Otoi, T. 115, 126, 233
 Ozawa, M. 164, 165, 174
- Pace, E. 212
 Pacheco Filho, P. I. M. 152
 Padilla, L. R. 112
 Paes de Barros, M. B. 189
 Pailhoux, E. 219
 Palazzi, E. 180
 Palomino, J. M. 183, 257
 Palomino, J. 225
 Palta, P. 135, 172, 211, 251, 252
 Paludo, F. 203
 Panda, S. K. 135, 251
 Paramio, M. T. 223, 226, 228
 Park, C. H. 134, 247, 261
 Park, C. K. 120, 187
 Park, C. S. 129, 184, 247
 Park, E. J. 134, 158, 261
 Park, H. D. 211
 Park, J. E. 134, 158, 261
 Park, J. K. 247
 Park, J. Y. 246, 257
 Park, J. 128, 136
 Park, J.-Y. 243
 Park, K. S. 246, 257
 Park, K.-S. 243
 Park, M. R. 230
 Park, S. B. 247
 Park, S. H. 129, 247
 Park, S. J. 169, 262
 Park, S.-B. 156, 200
 Park, Y. B. 246, 257
 Park, Y. S. 116, 211
 Park, Y.-B. 243
 Parnpai, R. 147
 Parrilla, I. 150
 Paschoal, D. M. 147, 173
 Pascualini, S. 131
 Paternoster, M. S. 221
 Pavao, D. 212
 Pavão, D. 180
 Pawlak, P. 230
 Paz, D. A. 158
 Pearks Wilkerson, A. J. 171, 222
 Pedersen, H. 130
 Peelman, L. J. 194
- Peixer, M. A. S. 124
 Pendarvis, K. 194
 Pennarossa, G. 108, 187
 Pennington, K. 176
 Penteadó, L. 210
 Peoples, M. 109
 Pereira, M. M. 122, 203, 213
 Peres, M. A. 143, 151, 215, 216
 Pereyra-Bonnet, F. 107, 263
 Perez, E. G. A. 143, 151, 152, 215, 216, 218
 Pers-Kamczyc, E. 230
 Petersen, B. 125, 260, 262
 Petrovicova, I. 125
 Petters, R. M. 264
 Phermthai, T. 147
 Piedrahita, J. 264
 Piedrahita, J. A. 56
 Pierson, J. T. 255
 Pierson, R. A. 190
 Pilau, E. J. 160
 Pimentel, J. R. V. 111, 114
 Pinczak, A. 217
 Pintelon, I. 186
 Pinto, C. R. F. 110
 Pinto, M. 144
 Pinto, T. L. C. 188
 Pires, R. M. L. 176
 Purity, K. M. 243
 Purity, M. K. 244
 Pitts, N. I. 181
 Plummer, W. 212
 Polgar, Z. 240
 Ponce, D. 182
 Ponsart, C. 197
 Pontes, J. H. F. 210
 Pope, C. E. 142, 148, 150
 Poulin, S. 255
 Prata, A. B. 110
 Prather, R. S. 107, 131, 138, 146, 172, 263
 Prather, R. 265
 Prentice, J. R. 148
 Pribenszky, C. 48
 Price, C. A. 32, 222
 Pryor, J. H. 200
 Puelker, R. Z. 191, 213
 Pupulim, A. G. R. 213
 Purup, S. 130
- Queiroz, L. M. V. 124
 Queiroz, R. 180
 Queisser, A. L. 260
 Quiñones Martorello, A. 149
 Quintans, C. 131
 Quintao, C. C. R. 122, 203
 Quintão, C. C. R. 213
 Quintela, L. A. 204, 224

Quispe, D. 161
 Qureiroz, R. 212

 Radic, T. 196
 Rahman, M. M. 108, 187
 Ramos Ibeas, P. 185
 Ramos, M. 202
 Rascado, T. S. 147, 173
 Rath, D. 157, 260
 Razza, E. M. 175, 191
 Razza, E. 174
 Rebar, E. 260
 Rebellar, P. G. 185
 Redmer, D. A. 161
 Reichenbach, H. D. 232
 Reichenbach, M. 232
 Reinhardt, R. 184
 Reinmaa, E. 185
 Reischl, J. 141
 Resende, A. M. 179
 Reshkin, S. J. 250
 Revora, M. 131
 Reynolds, L. P. 161
 Rho, G. J. 129, 186, 247, 248, 249
 Ribeiro-Paes, J. T. 242
 Ricci, F. 250
 Richter, A. 264
 Rieke, A. 265
 Rigali, F. 131
 Rio, J. H. 123
 Rios, D. B. 155
 Rios, G. 149
 Ripamonte, P. 222
 Riveros, J. L. 123
 Rizos, D. 149, 192, 199, 234
 Robeck, T. R. 240
 Roca, J. 150
 Rocha, C. C. 143, 151, 215, 216, 218
 Rodovalho, N. C. 180
 Rodrigues, A. P. R. 40
 Rodrigues, F. C. 132, 237
 Rodrigues, J. L. 124
 Rodrigues, M. P. 152
 Rodrigues, P. G. 179
 Rodriguez, P. 202
 Roelen, B. A. J. 189
 Rogan, D. 190, 255
 Rohrbach, N. 119
 Roibas da Torre, B. 134
 Rolka, M. 159
 Rolland, A. 154
 Romaguera, R. 223, 226, 228
 Romar, R. 221, 229
 Romek, M. 142, 159
 Romo, S. 178
 Romualdo, P. L. 145
 Roper, D. 119
 Rosas, F. C. W. 181

 Roséfort, A. 219
 Ross, J. 265
 Roura, M. 223, 228
 Rubessa, M. 167, 168
 Rumpf, R. 132
 Rungarunlert, S. 244
 Rutigliano, H. 221
 Ryan, J. P. 224
 Ryan, P. L. 194

 Saadeldin, I. M. 134, 169
 Saenz, J. R. 150
 Sagirkaya, H. 190
 Saha, A. P. 135
 Sahu, S. 249
 Sakagami, N. 256
 Sakamoto, Y. 116
 Sakatani, M. 179
 Sakr, O. G. 185
 Salamone, D. F. 107, 158, 166, 168, 241
 Salamone, D. 137, 263
 Sales, J. N. S. 122, 213
 Salumets, A. 185
 Samuel, M. S. 263
 Samuel, M. 265
 Sanchez-Osorio, J. 150
 Sano, D. 220
 Sano, F. 256
 Santana, G. M. 124
 Santiago, Y. 260
 Santos, F. A. P. 110
 Santos, I. C. C. 180
 Santos, R. R. 40
 Saraiva, S. A. 160
 Sarapik, A. 185
 Sardanelli, A. M. 221
 Sartori, R. 110, 177, 178, 193, 237, 255
 Sartori, V. C. 160
 Satrapa, R. A. 191
 Satterfield, C. 264
 Saturnino, H. M. 183
 Saunders, D. M. 224
 Saw, S. 172
 Saxton, A. M. 111
 Schaffner, A. 212
 Schalkwyk, L. C. 185
 Schams, D. 160
 Scheetz, D. 1
 Schieker, M. 196
 Schilling, E. 196
 Schmidt, M. 245
 Schrick, F. N. 111, 119
 Schutz, L. F. 213
 Sciorsci, R. L. 250
 Scott, B. R. 140, 163
 Seidel, G. E., Jr 139
 Seidel, G. E. 236
 Selokar, N. L. 135

 Serapiao, R. V. 122
 Sessions, B. R. 221
 Shahidi, M. 201
 Sharma, R. 135, 211, 251, 252
 Shi, D. 171
 Shimada, M. 117, 146
 Shin, J. Y. 248
 Shin, S. T. 230, 248
 Shin, T. 128, 134, 239, 246, 261
 Shudo, K. 220
 Silva, C. F. 191
 Silva, J. R. V. 40
 Silva, M. C. 151, 188
 Silva, R. O. C. 143, 151, 215, 216, 218
 Silvestre, F. 233
 Simões, R. 143, 151, 215, 216
 Simpson, S. 264
 Singh, J. 148, 183, 190
 Singh, K. P. 172, 211, 251, 252
 Singh, M. K. 172, 252
 Singla, S. K. 135, 172, 211, 251, 252
 Siqueira, L. G. B. 258
 Slomski, R. 220
 Smith, G. W. 1, 109
 Smorag, Z. 142, 159, 220
 Sneek, L. 255
 Snoeck, P. P. N. 151
 Sobrinho, C. A. B. 152
 Soler, T. B. 218
 Somfai, T. 119, 126, 133, 147, 173, 199
 Sommer, J. R. 264
 Song, K. 128, 136
 Songsasen, N. 112, 214
 Soomets, U. 185
 Souza, C. E. A. 175
 Souza, D. M. 242
 Souza, E. D. 258
 Souza, F. 180, 212
 Souza, J. C. 179
 Souza, J. M. G. 188
 Spadari, A. 250
 Spate, L. D. 107, 138, 146, 172
 Spate, L. 131, 265
 Spencer, T. 264
 Spollen, W. G. 138
 Spuri, R. 188
 Stinshoff, H. 160
 Strejcek, F. 125
 Struckmann, C. 260
 Sturek, M. 256
 Suárez Novoa, M. V. 167, 168
 Suchodolski, P. F. 222
 Sudano, M. J. 147, 173
 Sugimura, S. 173, 205
 Sui, L. C. 173, 223
 Sun, X. P. 243, 254
 Surjus, R. S. 110, 255
 Suto, M. 124

- Sutovsky, M. 263
 Sutovsky, P. 263
 Suzuki, O. 152
 Swanson, W. F. 153
 Syudo, K. 126
- Tachibana, C. 209
 Tagami, T. 137
 Taibl, J. N. 256
 Takahashi, H. 124, 164
 Takahashi, M. 179
 Takahashi, S. 118, 132
 Takahashi, T. 195
 Takahashi, Y. 156, 198
 Takeda, K. 137
 Tang, B. 231
 Tani, C. 179
 Tani, M. 179
 Tanihara, F. 115, 126, 233
 Tanisawa, M. 118
 Tao, Y. 170, 223, 243, 254
 Tas Caputcu, A. 190
 Tasai, M. 137
 Taylor, U. 260
 Tazzari, P. 250
 Techakumphu, M. 153, 244
 Teixeira, P. P. M. 117
 Teramoto, H. 205
 Terazono, T. 233
 Teshima, H. 146
 Tessanne, K. 109, 200, 264
 Tharasanit, T. 153
 Thieme, R. 154
 Toda, S. 116
 Tomokawa, K. 179
 Toosi, B. M. 219, 257
 Toosi, B. 215
 Torres, C. A. A. 145, 188
 Tovar, G. 178
 Tracy, L. 131
 Travis, A. L. 238
 Tribulo, A. 202
 Trigal, B. 237
 Tripurani, S. K. 109
 Trzcinska, M. 140, 220
 Tsuchiya, K. 162
- Uchio-Yamada, K. 152
 Ueda, M. 116
 Uh, K. J. 246, 247
 Uhm, S. J. 230, 248
 Ujhelly, O. 243
 Umesiobi, D. O. 144
 Uozumi, T. 234
 Ushizawa, K. 195
- Vajta, G. 48, 130
 Valentim, R. 180
 Valentini, L. 250, 252
 Vallet, J. L. 177
 Valverde, F. 224
 Van Hoeck, V. 234
 Van Soom, A. 180, 194, 202
 van Wettere, W. H. 206
 Vandaele, L. 180, 194
 Vanelli, A. 108, 187
 Varga, E. 243
 Vargas, M. S. B. 258
 Vazquez, J. M. 150
 Vejlsted, M. 125
 Velandar, W. 265
 Velez, I. C. 122, 235
 Velthut, A. 185
 Ventura, M. 252
 Vergara, J. 225
 Verneque, R. S. 213
 Viana, J. H. M. 122, 188, 203, 213, 258
 Viau, P. 181, 189
 Vicente, W. R. R. 117
 Vichera, G. 137
 Vick, M. M. 153
 Vieira, L. 217
 Vien, V. L. 115, 126, 233
 Vilariño, M. 217
 Virgo, J. 181
 Viudes, G. 219
 Vivanco, W. 182
 Viviani, L. 131
 Vos, P. L. A. M. 189
- Wakayama, T. 241
 Walker, S. K. 206
 Wallner, K. 264
 Walters, E. M. 131, 138, 263
 Walters, E. 265
 Wang, W. 173
 Wang, X. 198
 Watanabe, S. 119, 126, 132, 133, 137, 199
 Weaver, A. 206
 Wells, K. D. 138, 258, 263
 Wells, K. 259
 Werner, T. 75
 Wesselingh, W. 180
 Wessinger, P. 212
 Westhusin, M. 109, 264
 Wheeler, M. 124
 Wheeler, M. B. 159, 210, 253
 White, K. L. 221
 Whitworth, K. M. 131, 138
 Whyte, J. J. 138
- Wildt, D. E. 112, 214
 Wilkening, S. 143, 160
 Wilkerson, J. 119
 Willard, S. T. 194
 Williamson, G. L. 200
 Wiltbank, M. C. 178
 Wolf, E. 127, 166, 196, 232, 264
 Woo, J.-S. 156
 Woodard, J. R. 159
 Woodbury, M. R. 257
 Wrenzycki, C. 143, 160, 228
 Wuensch, A. 127, 196, 264
- Yamaguchi, M. 118
 Yamaguchi, T. 162
 Yamamoto, M. 256
 Yamashita, K. 118
 Yang, B. K. 120, 187
 Yang, B.-C. 156, 200
 Yang, C. J. 128
 Yang, H. 192, 196, 201
 Yang, M. Y. 15
 Yang, Q. E. 164
 Yao, J. 109
 Yapura, M. J. 190
 Yasuda, T. 164
 Yeon, S. 136
 Yi, B.-R. 201
 Yin, H. Q. 243, 254
 Yonezawa, C. 132
 Yong, H. 182
 Yoo, J. G. 247
 Yoo, Y.-M. 254
 Yoshikawa, Y. 198
 You, J. 139
 Young, C. 119
 Young, J. M. 110
 Yuan, Y. 235
- Zago, F. C. 213
 Zakhartchenko, V. 94, 127
 Zanenga, C. A. 180
 Zecconi, A. 187
 Zechner, U. 228
 Zeng, C. M. 160
 Zhang, K. 164, 236
 Zhang, M. L. 173
 Zhang, S. 171
 Zhang, X. R. 170, 173, 223, 243, 254
 Zhang, Y. H. 170, 173, 223, 243, 254
 Zhang, Y. L. 173
 Zhang, Z. 171
 Zhao, J. 131, 138, 263, 265
 Zhu, J. 133, 145
 Zuge, R. M. 218

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2011 RECIPIENT

IETS DISTINGUISHED SERVICE AWARD



The recipient of the IETS Distinguished Service Award is a person who is expected to have made many contributions over a number of years to areas that are fundamental to our society. These areas can be described in different ways, but one good place to look is the IETS by-laws under the heading “Purposes.” There it reads, “The Society shall further the science of embryo production, development and transfer,” and then a number of specific points are mentioned. There are many ways to fulfill these purposes, and Torben Greve, who is the recipient of this year’s Distinguished Service Award, has found his way of doing it. This is why we will honor him today. Greve is from Denmark, and he has been an IETS member almost since the society’s start in 1974. He has attended almost every annual conference since then. Furthermore, Greve has been a board member of the IETS and served as president from 1983 to 1984. Through the years Greve has added to the value of the IETS in several of the ways mentioned as the society’s purposes. A few of them will be mentioned now. Superovulation, embryo handling, and embryo transfer in cattle was a focus area of Greve’s research from his early years at the veterinary university in Copenhagen. Practical problems and considerations were key issues, and Greve’s experiments were performed in close collaboration with practice. Greve created a fundament for the introduction and further development of embryo technologies in cattle and other farm animals over the next 20 years. In such a broad field, covering several technologies and most farm animal species, some areas or disciplines become favorites, and for Greve it has always been the clinical and the surgical part and having hands and eyes on the embryos. Practical application and promoting the effective research has thus been a natural part of Greve’s focus. A significant part of Greve’s work has been to provide scientific and educational information. Greve has contributed to more than 200 articles and book chapters in the scientific literature and to many scientific conferences and meetings where he has been an invited speaker, session chairman, or active participant. Education of veterinary students and veterinary colleagues as well as making more general information available to the public has also taken a fair part of Greve’s time. The extent of these activities, in Denmark, the Nordic countries, the European Union, and internationally, reflects both the high level of Greve’s scientific knowledge and his high standards in the way he passes on his messages. In all contexts, Greve is respected for his scientific knowledge and for his positive attitude and willingness to discuss difficult issues, such as ethical aspects of the controversy in handling mammalian embryos. Another important aspect of Greve’s work has been his involvement in the work of many research students, PhDs, postdocs, or other colleagues who have spent time at the university in Copenhagen under Greve’s supervision and guidance. Many used that time to establish their own careers in research—several of you are here today. The fact that Denmark has been so well represented at many of the IETS conferences over the last 20 years can also be credited to Greve. He has encouraged his students to come, has given priority to the necessary funding for their travels, and has offered his students important first contacts with his scientific colleagues and friends around the world—a kick-start for a young student and something never to forget. This is a prime example of Greve’s high standards of education. Many people have found Copenhagen and Greve’s laboratory to be pleasant places to visit and work, filled with good research and a good atmosphere. The most serious research work can be very well combined with a good laugh. Over the years Greve has received much recognition for his scientific achievements, and he has also been awarded several academic honors, as well as several research prizes. Today, it is my pleasure and honor to add to these achievements on behalf of the IETS. Torben Greve is a true scientist who has made many contributions over the last 20 to 25 years in the areas that are fundamental to our society and that are recognized worldwide. Through his work and way of working, he has committed himself to IETS goals and objectives throughout the years. As such, Torben Greve is a most worthy recipient of the 2011 IETS Distinguished Service Award.

SPECIAL EVENTS

OPEN MEETING OF THE HEALTH AND SAFETY ADVISORY COMMITTEE

Sunday, January 9, 2011

18:00 – 20:00

Floral Ballroom

WELCOME RECEPTION

Sunday, January 9, 2011

20:00

Wyndham Orlando Resort

The Welcome Reception will take place on January 9, 2011, at 20:00. Wines, cocktails, and hors d'oeuvres will be served at the Palms Ballroom and Palms Ballroom foyer.

OPEN MEETING OF THE DOMESTIC ANIMAL BIOMEDICAL

EMBRYOLOGY COMMITTEE

Monday, January 10, 2011

18:00 – 20:00

Floral Ballroom

OPEN MEETING OF THE COMPANION ANIMALS, NON-DOMESTIC &

ENDANGERED SPECIES COMMITTEE

Monday, January 10, 2011

18:00 – 19:00

Azalea

PRACTITIONERS' FORUM – RECENT ADVANCES IN SUPEROVULATION AND EMBRYO

PRODUCTION

Tuesday, January 11, 2011

10:30 – 12:30

Floral Ballroom

9TH IETS ANNUAL RUNNING COMPETITION

Tuesday, January 11, 2011

16:30 – 17:30

Meet near the registration desk. The course will take participants around the beautiful Wyndham Orlando Resort. We look forward to seeing you participate in this year's fun run.

CLOSING PARTY

Tuesday, January 11, 2011

19:00 – 2:00

Come and join us for some delicious food, conversation, and dancing. There will be music for all those wishing to stay late and dance. (Tickets are required.)

EXHIBIT ROOM LAYOUT

IETS ANNUAL CONFERENCE

JANUARY 8 - 12, 2011
 WYNDHAM RESORT
 ORLANDO, FLORIDA

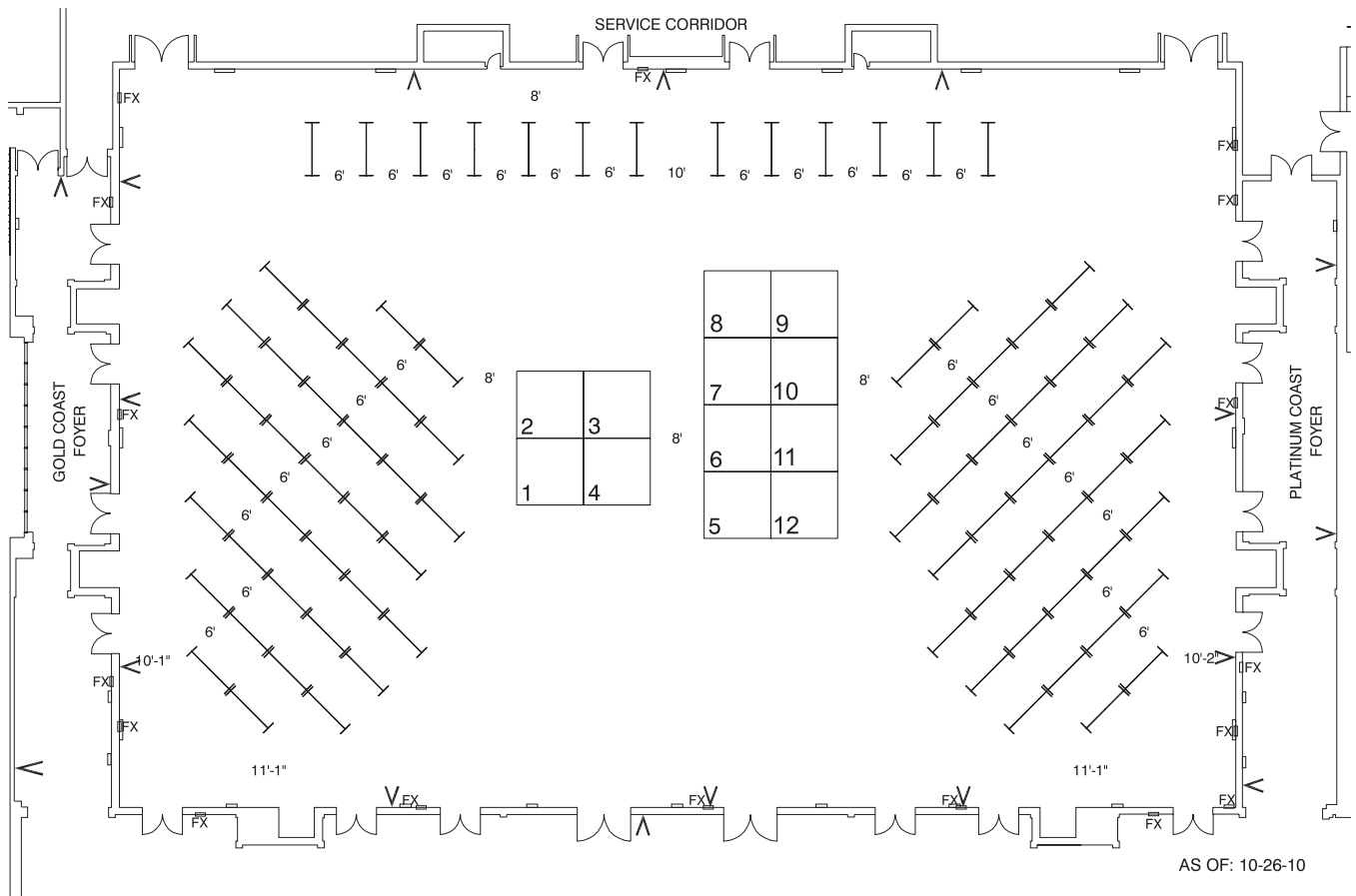


EXHIBIT DIRECTORY

BOOTH LISTING BY NUMBER

Booth#	Company
#1.....	Cryo-Innovation LTD
#2.....	IVM Technologies
#3.....	ICPbio Reproduction
#4.....	Hamilton Thorne Inc.
#5.....	Bioniche Animal Health
#6.....	IETS

Booth#	Company
#7.....	
#8.....	PETS Inc.
#9.....	Biogenics
#10.....	Csiro Publishing
#11.....	Minitube of America
#12.....	Minitube of America

ALPHABETICAL LISTING OF COMPANIES

Biogenics

2797 Napa Valley Corporate Drive
Napa, CA 94558
USA
www.biogenics.com
Booth #: 9

A pioneer in product improvement and innovation, Biogenics understands the technical complexities of products used in cryopreservation, cryobiology, and assisted reproductive technology. Because of our long experience with these sophisticated products including IVF and embryo transfer instruments, supplies and equipment, we offer our customers the kind of unparalleled support that is available only from the most trusted expert.

Bioniche Animal Health

231 Dundas Street East
Belleville, ON K8N 5J2
Canada
www.bioniche.com
Booth #: 5

A Canadian Animal Health business which is responsible for researching, developing, manufacturing and marketing animal health biopharmaceutical products worldwide. The Company's animal health products are marketed directly in Canada, the United States, Australia and Europe and through selected distributors in the rest of the world.

Bioniche Animal Health Inc. operates marketing, production and research facilities in Belleville, Ontario; marketing and manufacturing facilities in Athens, Georgia and in Pullman, Washington in the United States; marketing and manufacturing facilities in Armidale, Australia; and a sales and marketing office in Ireland.

Cryo-Innovation Ltd.

25 Uri u.
Budapest, 1014
Hungary
www.cryo-innovation.com
Booth #: 1

Cryo-Innovation Ltd., as a Hungarian R&D company, focuses on accommodating stable innovative solutions into Assisted Reproductive Technologies, both animal and human. Company headquarters and labs are located in Budapest, while research is conducted in co-operations world wide.

CSIRO Publishing

PO Box 1139
Collingwood Victoria 3066
Australia
www.publish.csiro.au/
Booth #: 10

CSIRO Publishing

CSIRO Publishing operates as an independent science and technology publisher with a global reputation for quality products and services. Our internationally recognized publishing program covers a range of scientific disciplines, including agriculture, the plant and animal sciences, and environmental management. Our product range includes journals, books, magazines and CD-ROMs.

Hamilton Thorne Bioscience Inc.

100 Cummings Ctr.
Suite 465E
Beverly, MA 01915
USA
www.hamiltonthorne.com
Booth #: 4

Hamilton Thorne presents the XYClone laser system for assisted reproductive technologies, transgenic animal production, embryonic stem cell excision, and nuclear transfer. We are also introducing the PrimoVision remote time-lapse embryo monitoring system.

ICPbio Reproduction

PO Box 39
Spring Valley, WI 54767
Phone: 877-978-5827
www.icpbio.com
Booth #: 3

ICPbio Reproduction is a global supplier of embryo transfer products including flushing and embryo handling media for the equine, bovine and ovine embryo transfer industry and veterinarians. ICPbio also manufactures and distributes the Ovagen brand FSH for super ovulation of ovine and bovine for embryo transfer procedures.

IETS

2441 Village Green Place
Champaign, IL 61822
www.iets.org
Booth #: 6

The International Embryo Transfer Society was formed in 1974 in Denver, Colorado, USA to serve as a professional forum for the exchange of information among practitioners, scientists, educators, regulatory officials, livestock breeders, suppliers of drugs and equipment, and students. The purpose of the IETS is to further the science of animal embryo transfer by promoting more effective research, disseminating scientific and educational information, fostering high standards of education, maintaining high standards of ethics, and cooperating with other organizations having similar objectives

IMV Technologies

11725 95th Avenue North
Maple Grove, MN 55369
www.imvusa.com
Booth #: 2

Known worldwide for the quality of its craftsmanship and manufacture, IMV Technologies has for many years been taking up the most noble of challenges in the field of assisted reproduction biotechnologies. Through artificial insemination techniques for animals and the application of our technology we both contribute to and participate in the improvement of species and the preservation of our genetic heritage.

Innovators by nature, we constantly develop new know-how for artificial insemination techniques, embryo transfer, bio-repositories and blood banking, all of which have multiple applications for human kind.

Minitube of America

PO Box 930187
419 Venture Ct.
Verona, WI 53593
www.minitube.com
Booth #: 11 & 12

Minitube is the leader in research, development, manufacturing and distribution of products and services for assisted reproduction in bovine, porcine, equine, and other species. Supported by a staff of engineers and software developers, Minitube continues to advance the capabilities of automated laboratory equipment for embryo and semen evaluation, procession, and preservation.

PETS, Inc

Box 188
Canton TX 75103
USA
www.pets-inc.com
Booth #: 8

PETS has been a world leading embryo transfer supply company for the bovine and equine industries for over 2 decades. Our goal all this time has been your success and we work every day to achieve this with quality service and quality E.T. supplies and equipment such as emCare, Vigro, emCon, EZ Way, Wesco, ECM and many more. Come visit with us for more details.

PRECONFERENCE SYMPOSIUM

ADVANCES IN BOVINE REPRODUCTION AND EMBRYO TECHNOLOGY

WYNDHAM ORLANDO RESORT, ORLANDO, FLORIDA

January 8, 2011

8:00 – 17:00

Introduction

Jose Santos, University of Florida; Cliff Lamb, University of Florida

Understanding the relationship between the follicle and embryo

Jo L. Leroy, University of Antwerp

Mechanism of uterine defense and control of uterine disease in cattle

Stephen Leblanc, University of Guelph

Controlling the dominant follicle

Milo Wiltbank, University of Wisconsin

Timed ET programs for management of donor and recipient cows

Pietro Baruselli, University of São Paulo

Influence of progesterone on oocyte quality and embryo development in cows

Pat Lonergan, University College Dublin

The role of cytokines and growth factors to improve pregnancy in IVF-ET programs

Jeremy Block, University of Florida

Dietary manipulations to improve embryonic survival in cattle

William Thatcher, University of Florida

What technologies are needed in the future of bovine reproduction and ET—Roundtable

Don Bennink, North Florida Holsteins; Brad Stroud, Embryo Service; Mel DeJarnette, Select Sires Inc.

Conclusion

Jose Santos, University of Florida; Cliff Lamb, University of Florida



2ND DABE WORKSHOP

PLASTICITY, FATE CONTROL, AND THERAPEUTIC SAFETY OF STEM CELLS

Wyndham Orlando Resort, Orlando, Florida
January 8, 2011, 13.00 h

13.00 – 13.15: Fulvio Gandolfi
Welcome and opening remarks

13.15 – 13.45: Fausto Cremonesi and Anna Lange-Consiglio

Equine amniotic derived stem cells: Progress and perspectives

Fetal adnexa such as umbilical cord, amnion, and amniotic fluid have been recently suggested as ideal sources of different stem cell lineages, due to the noninvasive nature of the isolation procedure, the large tissue mass to harvest cells with high efficiency, and the differentiation potentials. Moreover, especially in human medicine, the low ethical implications make these sources of stem cells very attractive for regenerative therapies and biotechnological applications. In the complexity of stem cell origin and definition, a background of the fundamental processes of initial embryo development is illustrated, because the peculiar fitting of the fetal extraembryonic-derived stem cells on the continuum of stem cell ontogeny suggests that these cells may preserve some of the characteristics of the primitive embryonic layers where they originate from. Indeed, many studies reported so far indicate that these stem cells exhibit several features of embryonic stem cells: expressing embryonic markers, sharing similar proliferation capability, and displaying a negligible immunogenicity. However, their differentiation potential, either *in vivo* or *in vitro*, is intermediate between the pluripotent embryonic stem cells and the multipotent adult stem cells. Nonembryonic but plastic stem cells have opened new perspectives for developmental biology and for regenerative medicine, not only in humans but also in animals. In this update, we report the state of the art of fetal adnexa-derived stem cells from domestic animals and analyze applications and expectations in veterinary medicine.

13.45 – 14.15: Heiner Nieman

Production of Oct4/GFP transgenic pigs: A new large-animal model for reprogramming

The domesticated pig has emerged as an important tool in biomedical research, including the development of novel surgical techniques, advancement of xenotransplantation, creation of important disease models, and preclinical testing of novel cell therapies. However, germline-competent pluripotent porcine stem cells have not yet been derived from any origin. This is a major drawback for using the pig as a model in regenerative medicine. The transcription factor Oct4 is essential for maintenance of pluripotency and critical for reprogramming somatic cells to a pluripotent state. We have produced transgenic pigs carrying the 18 kb genomic sequence of the murine Oct4 gene fused to the enhanced green fluorescent protein (EGFP) cDNA to allow monitoring of Oct4 expression by EGFP fluorescence. Eleven viable transgenic piglets were produced by somatic cell nuclear transfer (SCNT), and germline-specific expression of the EGFP reporter construct was confirmed. Enhanced green fluorescent protein fluorescence was detected in the inner cell mass and trophectoderm of blastocysts, and germ cells and testicular cells. Reprogramming approaches of fibroblasts from these animals by (i) SCNT and (ii) fusion with pluripotent murine embryonic stem cells and by (iii) viral

transduction with human OCT4, SOX2, KLF4 and cMYC cDNA resulted in Oct4-EGFP reactivation and was compatible with monitoring the kinetics and maintenance of pluripotency in porcine cells. Results indicate that these Oct4-EGFP transgenic pigs facilitate studies on derivation and characterization of pluripotent cells in this important domesticated animal and will improve efficiency and safety of cell therapies.

14.15 – 14.45: Catharina De Schauwer and Ann Van Soom

Markers of stemness in equine mesenchymal stem cells: A plea for uniformity

Mesenchymal stem cells (MSC) represent a promising population for cell-based therapies in veterinary medicine. In spite of the advances in the knowledge of adult stem cells during the past few years, the identification of MSC still remains a difficult issue. In human medicine, the Mesenchymal and Tissue Stem Cell Committee of the International Society for Cellular Therapy (ISCT) has proposed three criteria to define MSC. First, these cells must be plastic-adherent when maintained in standard culture conditions. Second, MSC must express CD73, CD90, and CD105 and lack expression of CD34, CD45, CD14 or CD11b, CD79 α or CD19 and MHC class II antigens. Third, MSC must differentiate into osteoblasts, adipocytes, and chondroblasts *in vitro*. The successful culture and differentiation of equine MSC from different sources such as bone marrow, fat tissue, umbilical cord blood, or Wharton's Jelly has been reported by several research groups, but a complete characterization of these equine MSC by means of immunophenotypic markers, as advocated by the ISCT, remains very difficult. The lack of a single specific marker for MSC and the present limited availability of monoclonal anti-horse antibodies are major complicating factors for the progress of this type of research. Because commercial antibodies that recognize the equine epitopes are at present only available for CD44 and MHC-II, different clones of antibodies need to be tested for all other markers in a search for cross reactivity. Furthermore, the expression of some markers for adult stem cells may differ between species, so we propose to define a set of CD markers that can be uniformly applied for the identification of equine MSC.

14.45 – 15.15: Randall Prather and Mingtao-Zhao

The multipotentiality of skin-derived stem cells in pigs

Multipotent skin-derived progenitor (SKP) cells can generate both neural and mesodermal progeny, representing neural crest-derived progenitors during embryogenesis through adulthood. The SKP cells develop into spheres in suspension and can differentiate into fibroblast-like cells (SFC) in adhesive culture with serum. Concomitantly they gradually lose the neural potential but retain certain mesodermal potential. Transcriptional characterization of porcine SKP spheres and SFC found the down-regulated genes are mostly involved in intrinsic programs such as the *Dicer* pathway and asymmetric cell division, whereas up-regulated genes are likely to participate in extrinsic signaling pathways such as ErbB signaling, MAPK signaling, ECM-receptor reaction, Wnt signaling, cell communication, and TGF-beta signaling pathways. We speculate that these potential signaling pathways may play an important role in regulating the cell fate transition between SKP spheres and SFC *in vitro*. Further experiments evaluating the stemness of neural/progenitor cells showed that the differentially expressed genes between SKP spheres and neurospheres are mainly involved in ECM-receptor interaction and the TGF- β signaling pathway and that leukemia inhibitory factor (LIF) or MEK inhibitors result in a distinctive effect on the stemness and differentiation genes of SKP spheres and neurospheres. Thus the cell-intrinsic genetic program may contribute to the innate stemness of SKP spheres and neurospheres in a similar local microenvironment. Finally, chimeras with porcine SKP cells can produce both neural and mesodermal progeny *in vivo*. Further studies will be needed to determine if these cells can contribute to the germline. If they can contribute to the germline, then they might be used in a manner similar to mouse embryonic stem cells, i.e., for use in genetic modification of pigs or to test the ability of these cells to be used therapeutically.

15.15 – 15.45: Coffee break

15.45 – 16.15: Caroll Keefer

Mechanical phenotyping of embryonic stem cells

Elasticity and visco-elasticity are mechanical properties of cells that directly reflect cellular composition, internal structure (cytoskeleton), and external interactions (cell–cell or cell–surface). A variety of techniques involving probing, pulling, or deforming cells have been used to characterize these mechanical properties. With continuing advances in the technology, it may be possible to establish mechanical phenotypes that can be used to identify cells at specific points of differentiation and dedifferentiation with direct applications to therapeutics and diagnostics.

16.15 – 16.45: Vanessa Hall and Poul Hyttel

Development of porcine neural progenitor stem cells for studying and treating Alzheimer’s disease

The pig is an excellent biomedical model that can be used to study human disease due to its similar physiology, anatomy, and size to humans. We have recently developed porcine neural progenitor cells that display multipotent characteristics and can be cultured for an extended period *in vitro*. These cells form both neurons and glia upon directed differentiation. Furthermore, we are developing *in vitro* differentiation protocols that may be useful for future cell transplantation into animal models of Alzheimer’s disease. We are also establishing neural progenitor cell lines from the transgenic Alzheimer pig, which may provide a useful *in vitro* cell tool for studying mechanisms relating to amyloid precursor protein accumulation. The development of both wildtype and transgenic cells provides a unique opportunity for studying both disease mechanisms and for potential future treatment of the disease.

16.45 – 17.15: Matt Wheeler

Strategies for regeneration of the bone using porcine adult adipose-derived mesenchymal stem cells

Regeneration and reconstruction in the craniofacial region must satisfy the cosmetic needs as well as the functional requirements of the patient. The craniofacial structures protect vital organs, such as the brain and the eye, and provide support to the masticatory apparatus. Mesenchymal stem cells from bone marrow are one current source of adult stem cells for craniofacial therapeutic purposes; however, the magnitude and accessibility of subcutaneous adipose tissue in humans make it an attractive alternative source for mesenchymal stem cells. Numerous *in vitro* studies have been conducted to determine how these cells act *in vitro*, but it is imperative to determine the vast abilities of these cells *in vivo*. The objective of this study was to evaluate *in vivo* migration and bone healing ability after transplanting adipose-derived stem cells in a swine model. The clinical implications of such results are significant for treating many diseases in which inflammation or defects exist, such as cardiac disease, neurological disease, or traumatic injuries to both soft and hard tissue. If the adult stem cells can be harvested from fat and encouraged to produce bone or cartilage and then be reinserted into defects, treatment protocols for trauma victims can be developed that would reduce the need for alternate harvesting techniques for bone.

17.15 – 17.45: Fulvio Gandolfi and Tiziana Brevini

Porcine cardiac progenitor cells: A promising biomedical model

Different cardiac stem/progenitor cells have been recently identified in the postnatal heart. In particular, cardiac mesoangioblasts are self-renewing progenitors with high spontaneous cardiac differentiation that

can be expanded *in vitro* to numbers suitable for systemic delivery, and, upon transplantation, regenerate the infarcted heart and new myocardium. Most of the information available is confined to the mouse, the clinical relevance of which is limited by the enormous diversities between the mouse and the human. Considering the potential future application of these cells for human regenerative therapy, we propose the pig as a complementary model, due to its well-known morphological and functional affinity with the human. We describe the isolation, expansion, and *in vitro* proliferation ability of pig mesoangioblasts. We performed their molecular characterization and assessed their differentiation plasticity. The results obtained indicate that cardiac mesoangioblasts can be isolated in the porcine species, can stably proliferate in culture for many passages, and represent a relevant animal model for cardiac regenerative medicine.

17.45 – 18.00: Concluding remarks

LUTALYSE®

brand of dinoprost tromethamine sterile solution

Caution: Federal law restricts this drug to use by or on the order of a licensed veterinarian.

For intramuscular use for estrous synchronization, treatment of unobserved (silent) estrus and pyometra (chronic endometritis) in cattle; for abortion of feedlot and other non-lactating cattle; for parturition induction in swine; and for controlling the timing of estrus in estrous cycling mares and clinically anestrous mares that have a corpus luteum.

INDICATIONS AND INSTRUCTIONS FOR USE

LUTALYSE is effective only in those cattle having a corpus luteum, i.e., those which ovulated at least five days prior to treatment. Future reproductive performance of animals that are not cycling will be unaffected by injection of LUTALYSE.

For Intramuscular Use for Estrous Synchronization in Beef Cattle and Non-Lactating Dairy Heifers. LUTALYSE is used to control the timing of estrus and ovulation in estrous cycling cattle that have a corpus luteum.

Inject a dose of 5 mL LUTALYSE (25 mg PGF_{2α}) intramuscularly either once or twice at a 10 to 12 day interval.

With the single injection, cattle should be bred at the usual time relative to estrus.

With the two injections, cattle can be bred after the second injection either at the usual time relative to estrus or at about 80 hours after the second injection of LUTALYSE.

Estrus is expected to occur 1 to 5 days after injection if a corpus luteum was present. Cattle that do not become pregnant to breeding at estrus days 1 to 5 after injection will be expected to return to estrus in about 18 to 24 days.

2. For Intramuscular Use for Unobserved (Silent) Estrus in Lactating Dairy Cows with a Corpus Luteum. Inject a dose of 5 mL LUTALYSE (25 mg PGF_{2α}) intramuscularly. Bred cows as they are detected in estrus. If estrus has not been observed by 80 hours after injection, breed at 80 hours. If the cow returns to estrus breed at the usual time relative to estrus.

Management Considerations: Many factors contribute to success and failure of reproduction management, and these factors are important also when time of breeding is to be regulated with LUTALYSE Sterile Solution. Some of these factors are:

a. Cattle must be ready to breed – they must have a corpus luteum and be healthy;

b. Nutritional status must be adequate as this has a direct effect on conception and the initiation of estrus in heifers or return of estrous cycles in cows following calving;

c. Physical facilities must be adequate to allow cattle handling without being detrimental to the animal;

d. Estrus must be detected accurately if timed AI is not employed;

e. Semen of high fertility must be used;

f. Semen must be inseminated properly.

A successful breeding program can employ LUTALYSE effectively, but a poorly managed breeding program will continue to be poor when LUTALYSE is employed unless other management deficiencies are remedied first.

Cattle expressing estrus following LUTALYSE are receptive to breeding by a bull. Using bulls to breed large numbers of cattle in heat following LUTALYSE will require proper management of bulls and cattle.

3. For Intramuscular Use for Treatment of Pyometra (chronic endometritis) in Cattle. Inject a dose of 5 mL LUTALYSE (25 mg PGF_{2α}) intramuscularly. In studies conducted with LUTALYSE, pyometra was defined as presence of a corpus luteum in the ovary and uterine horns containing fluid but not a conceptus based on palpation per rectum. Return to normal was defined as evacuation of fluid and return of the uterine horn size to 40 mm or less based on palpation per rectum at 14 and 28 days. Most cattle that recovered in response to LUTALYSE recovered within 14 days after injection. After 14 days, recovery rate of treated cattle was no different than that of nontreated cattle.

4. For Intramuscular Use for Abortion of Feedlot and Other Non-Lactating Cattle. LUTALYSE is indicated for its abortifacient effect in feedlot and other non-lactating cattle during the first 100 days of gestation. Inject a dose of 25 mg intramuscularly. Cattle that abort will abort within 35 days of injection. Commercial cattle were palpated per rectum for pregnancy in six feedlots. The percent of pregnant cattle in each feedlot less than 100 days of gestation ranged between 26 and 85, 65% or more of the pregnant cattle were less than 100 days of gestation. The abortion rates following injection of LUTALYSE increased with increasing doses up to about 25 mg. As examples, the abortion rates, over 7 feedlots on the dose titration study, were 22%, 50%, 71%, 50% and 78% for cattle up to 100 days of gestation when injected IM with LUTALYSE doses of 0.1, 0.3, 1.0, 2.0, 5.0, 10.0, 20.0, 40.0, 80.0 and 160.0 mg/mL, respectively. The statistical predicted relative abortion rate based on the dose titration data, was about 95% for the 5 mL (25 mg) LUTALYSE dose for cattle injected up to 100 days of gestation.

Swine: For intramuscular use for parturition induction in swine. LUTALYSE Sterile Solution is indicated for parturition induction in swine when injected within 3 days of normal predicted farrowing. The response to treatment varies by individual animals with a mean interval from administration of 2 mL LUTALYSE (10 mg dinoprost) to parturition of approximately 30 hours. This can be employed to control the time of farrowing in sows and gilts in late gestation.

Management Considerations: Several factors must be considered for the successful use of LUTALYSE Sterile Solution for parturition induction in swine. The product must be administered at a relatively specific time (treatment earlier than 3 days prior to normal predicted farrowing may result in increased piglet mortality). It is important that adequate records be maintained on (1) the average length of gestation period for the animals on a specific location, and (2) the breeding and projected farrowing dates for each animal. This information is essential to determine the appropriate time for administration of LUTALYSE.

Mares: LUTALYSE Sterile Solution is indicated for its luteolytic effect in mares. This luteolytic effect can be utilized to control the timing of estrus in estrous cycling and clinically anestrous mares that have a corpus luteum in the following circumstances:

1. **Controlling Time of Estrus of Estrous Cycling Mares:** Mares treated with LUTALYSE during diestrus 14 or more days after ovulation will return to estrus within 2 to 4 days in most cases and ovulate 8 to 12 days after treatment. This procedure may be utilized as an aid to scheduling the use of stallions.

2. **Difficult-to-Breed Mares:** In extended diestrus there is failure to exhibit regular estrous cycles, which is different from true anestrus. Many mares described as anestrous during the breeding season have serum progesterone levels consistent with the presence of a functional corpus luteum.

A proportion of "barren", maiden, and lactating mares do not exhibit regular estrous cycles and may be in extended diestrus. Following abortion, early fetal death and resorption, or as a result of "pseudopregnancy", there may be serum progesterone levels consistent with a functional corpus luteum.

Treatment of such mares with LUTALYSE usually results in regression of the corpus luteum followed by estrus and/or ovulation. In one study with 122 Standardbred and Thoroughbred mares in clinical anestrus for an average of 58 days and treated during the breeding season, behavioral estrus was detected in 81 percent at an average time of 31 days after injection with 5 mg LUTALYSE. Ovulation occurred an average of 7.0 days after treatment. Of those mares bred, 59% were pregnant following an average of 1.4 services during that estrus.

Treatment of "anestrous" mares, which abort subsequent to 36 days of pregnancy, may not result in return to estrus due to presence of functional endometrial cups.

USE SAFETY (HUMAN WARNINGS)
Not for human use. Women of childbearing age, asthmatics, and persons with bronchial and other respiratory problems should exercise extreme caution when handling this product. In the early stages, women may be unaware of their pregnancies. Dinoprost tromethamine is readily absorbed through the skin and can cause abortion. Accidental spillage on the skin should be washed off immediately with soap and water.

RESIDUE INFORMATION
No milk discard or preslaughter drug withdrawal period is required for labeled uses in cattle. No preslaughter drug withdrawal period is required for labeled uses in swine. Use of this product in excess of the approved dose may drug residues. Not for horses intended for human consumption.

ANIMAL SAFETY (WARNINGS)
Serious localized osteolitic infections associated with injection of LUTALYSE have been reported. In rare instances, such infections have resulted in death. Aggressive antibiotic therapy should be employed at the first sign of infection at the injection site whether localized or diffuse.

PRECAUTIONS
• Do not administer intravenously (IV) as this route may potentiate adverse reactions.
• No val stopper should be entered more than 20 times. For this reason, the 100 mL bottle should only be used for cattle, swine, or mares.
• As with all parenteral products, careful aseptic technique should be used to decrease the possibility of post-injection bacterial infections. The val stopper should be cleaned and disinfected prior to needle entry. Only sterile needles should be used and the same needle should not be used more than once.
• Nonsteroidal anti-inflammatory drugs inhibit prostaglandin synthesis; therefore this class of drugs should not be administered concurrently.

Cattle: Do not administer to pregnant cattle, unless abortion is desired. Cattle administered a prostaglandin would be expected to have a reduced response to LUTALYSE Sterile Solution.

Swine: Do not administer to sows and/or gilts prior to 3 days of normal predicted farrowing as an increased number of stillbirths and perinatal mortality may result.

Mares: LUTALYSE Sterile Solution is ineffective when administered prior to day 5 after ovulation. Pregnancy status should be determined prior to treatment since LUTALYSE has been reported to induce abortion and parturition when sufficient doses were administered. Mares should not be treated if they suffer from either acute or subacute disorders of the vascular system, gastrointestinal tract, respiratory system, or reproductive tract.

ADVERSE REACTIONS
Cattle: Limited salivation has been reported in some instances.

Swine: The most frequently observed side effects were erythema and pruritus, slight incoordination, nesting behavior, hunching, urination, defecation, abdominal muscle spasms, tail movements, hyperaemia or dyspnea, increased vocalization, salivation, and at the 100 mg (100) dose only, possible vomiting. These side effects are transitory, lasting from 10 minutes to 3 hours, and were not detrimental to the health of the animal.

Mares: The most frequently observed side effects are sweating and decreased rectal temperature. However, these have been transient in all cases observed and have not been detrimental to the animal. Other reactions seen have been increase in heart rate, increase in respiration rate, some abdominal discomfort, locomotor incoordination, and lying down. These effects are usually seen within 15 minutes of injection and disappear within one hour. Mares usually continue to eat during the period of expression of side effects. One anaphylactic reaction of several hundred mares treated with LUTALYSE Sterile Solution was reported but was not confirmed.

NADA #126-901, Approved by FDA
U.S. Patent No. 6,187,818

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Division of Pfizer Inc.
New York, NY 10017

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327-33

INTERNATIONAL REGULATIONS AND REQUIREMENTS FOR THE IMPORT/EXPORT OF REPRODUCTIVE BIOMATERIALS: EMBRYOS, SEMEN, AND TISSUES

SPONSORED BY
THE IETS COMMITTEE ON COMPANION ANIMALS, NON-DOMESTIC AND
ENDANGERED SPECIES (CANDES)

WEDNESDAY, JANUARY 12, 2011, WYNDHAM ORLANDO RESORT,
ORLANDO, FLORIDA

The goal of this workshop will be to present and discuss the current status of biosafety issues when transporting biomaterials from CANDES as well as humans and livestock for use in biomedical research, embryo production in vivo and in vitro, and artificial insemination. Members of IETS and experts working at regulatory agencies and in relevant research will provide presentations that will cover a variety of topics that will include tissues used for cloning and, eventually, stem cell research. The workshop will cover issues such as the potential for disease transmission via reproductive biomaterials and methods to reduce those risks, the current status of international regulatory agencies in their biosafety guidelines for the import/export of these biomaterials, and suggestions for research or actions to overcome some of the hurdles that currently hamper use of reproductive biomaterials in biomedical and conservation science research. No proceedings articles will be provided; however, the IETS Committee on CANDES will prepare a publication summarizing the results of the workshop in a 2011 issue of the Embryo Transfer Newsletter. The proposed topics and suggested speakers for the program are listed as follows:

Introduction: *Dr. Nucharin Songsasen, Smithsonian's National Zoological Park, IETS CANDES Secretary*

Moderators: *Dr. Gabriela Mastromonaco, Metro Toronto Zoo, IETS CANDES Subcommittee Chair and Dr. Jason Herrick, University of Illinois, IETS CANDES Research Subcommittee Co-Chair*

Session I: International regulations for the transport of embryos, semen, and tissues from domestic and non-domestic livestock

08:00 – 08:45: USDA-APHIS guidelines and regulations regarding the transport of reproductive tissues versus live animals

Dr. Linda Penfold, White Oak Conservation Center, IETS CANDES Subcommittee Co-Chair and Dr. William White, USDA-APHIS, Foreign Animal Disease Diagnostic Laboratory

08:45 – 09:00: Discussion

09:00 – 09:45: OIE and international guidelines and regulations regarding the transport of reproductive tissues versus live animals

Dr. Larry Delver, VM Agriculture Consulting Ltd., Canada, IETS Health & Safety Committee (HASAC) Regulatory Subcommittee Chair and Dr. Pascale Chavatte-Palmer, INRA, France, IETS HASAC Chair, OIE Representative

09:45 – 10:00: Discussion

10:00 – 10:30: Break

10:30 – 11:15: Biosafety issues and mitigations regarding the use of tissues for cloning

Dr. Irinia Polejaeva, Viagen Inc., IETS HASAC member; Dr. Keqin Gregg, Viagen Inc.; and Dr. Duane C. Kraemer, Texas A&M University, IETS CANDES member

11:15 – 11:30: Discussion

11:30 – 12:15: Risks and methods for reducing risks of transmitting infectious pathogens when transporting reproductive biomaterials

Dr. Ann Van Soom, Ghent University, IETS HASAC Research Subcommittee Chair and Dr. Naida Loskutoff, Omaha's Center for Conservation and Research, IETS CANDES Chair

12:15 – 12:30: Discussion

12:30 – 14:00: Lunch

Session II: International guidelines and regulations for the import/export of reproductive tissues from rare or endangered livestock breeds and non-domestic species

14:00 – 14:45: Current trends and disease risk assessments for the development of biobanks for tissues from a diverse array of taxa, including rare domestic and non-domestic livestock

Dr. Bill Holt, Zoological Society of London, IETS CANDES Health & Safety Co-Chair

14:45 – 15:00: Discussion

15:00 – 15:30: Convention on International Trade in Endangered Species (CITES) and US Endangered Species Act (ESA) regulations regarding the transport of tissues from listed species

Dr. Mike Carpenter, US Fish & Wildlife Service, Division of Management Authority (CITES), Branch of Permits

15:30 – 16:00: Break

16:00 – 17:00: Panel discussion with representatives from USDA-APHIS, IETS HASAC, US Fish and Wildlife Service and CITES

Panel:

Dr. William White, USDA-APHIS, Foreign Animal Disease Diagnostic Laboratory;

Dr. Larry Delver, VM Agriculture Consulting Ltd., Canada, IETS Health & Safety Committee (HASAC) Regulatory Subcommittee Chair;

Dr. Pascale Chavatte-Palmer, INRA, France, IETS HASAC Chair, OIE Representative;

Dr. Ann Van Soom, Ghent University, IETS HASAC Research Subcommittee Chair;

Dr. Mike Carpenter, US Fish & Wildlife Service, Division of Management Authority (CITES), Branch of Permits

The focus will be on suggestions as to how to approach regulatory agencies for guidance to standardize regulatory requirements for reproductive biomaterial transport and for possible methods needed for relaxing certain regulations that currently affect biomedical and conservation research programs—similar to the OIE’s acceptance of the Embryo Appendices in the Animal Health Code based on the efforts of the IETS HASAC.

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