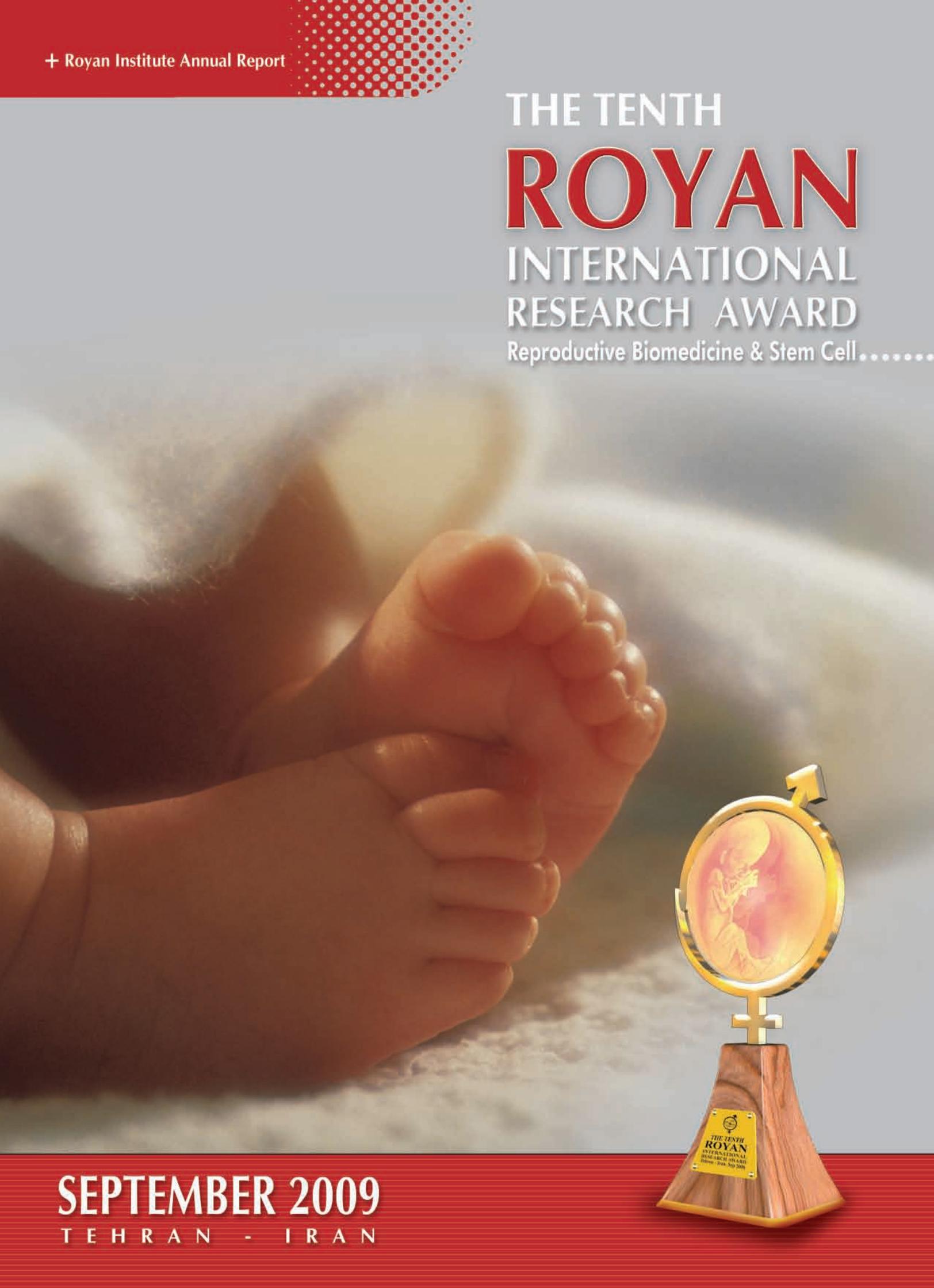


THE TENTH  
**ROYAN**  
INTERNATIONAL  
RESEARCH AWARD  
Reproductive Biomedicine & Stem Cell.....



**SEPTEMBER 2009**  
TEHRAN - IRAN

THE ELEVENTH  
**ROYAN**  
INTERNATIONAL RESEARCH AWARD  
REPRODUCTIVE BIOMEDICINE & STEM CELL

**Deadline for Application: April 20, 2010**



**&**

**Kazemi Prize**

*One decade of Royan International Research Award.  
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SEPTEMBER 2010  
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In the name of  
**GOD**

The Tenth  
**ROYAN**  
INTERNATIONAL RESEARCH AWARD



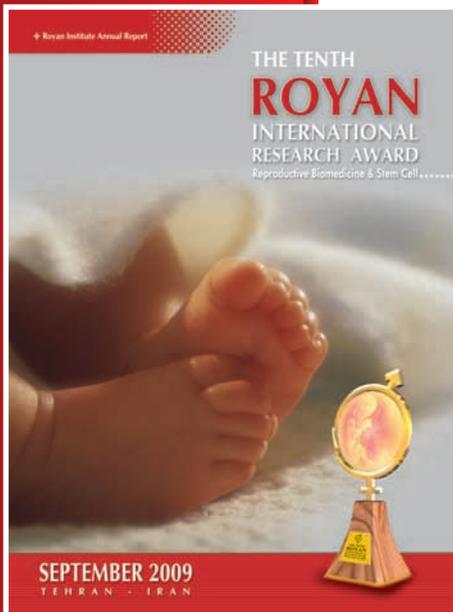
**Dr. Saeid Kazemi Ashtiani**  
*The Late Founder of ROYAN Institute*



ROYAN  
Institute

Iranian Academic Center for  
Education, Culture and Research  
(ACECR)

ACECR



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## Foreword |



Iran's research and development in reproduction, as well as the cellular and molecular fields have been a source of pride for all Iranians worldwide, especially in recent decades. These healths related fields have attracted a significant part of the world's financial and scientific attention. Royan's Annual International Research Award and Congress, currently in its 10th year, is a good opportunity for all academic people working in research centers, universities and clinics to exchange their knowledge and experiences in these fields.

As the time passes, reproductive health and cell based research are becoming more and more important, not only in scientific development but also for human application. Particularly the area of "reproductive health" which is leading to healthier children can be considered as a human right, and on the other hand, millions of patients suffering from incurable diseases worldwide are desperately waiting for any new results from stem cells, which hopefully can find either cure for their disease or a relief from their pain. No doubt, with the great effort of these scientists and God's grace, the next generations will encounter less life threatening diseases and be free from mental and emotional stress.

Thank God, I am proud to see the continuous and untiring efforts of researchers at Royan Institute, ACECR, along with other researchers in the world working diligently on this difficult path, and I ask God for their health and success.



# Introduction |



Dear Colleagues

Ten years experience in holding the Royan International Award makes it an important event in both reproductive biomedicine and stem cell research worldwide. The ever-increasing desire of national and international scientists to participate in this award indicates its acceptability amongst them. It is our honor to become acquainted with prominent scientists and establish a suitable research collaboration with them through this event. A few days ago I noticed that an article related to one of these collaborations has been accepted to be published and it will be the first report in that field. This is our pleasure, because one of the main goals of this award is this type of international scientific collaboration.

This year the award secretary has received 253 titles from 41 countries. According to strict criteria, 145 national and international prominent juries have reviewed each project and its related papers. Finally, winners in the following five areas: female endocrinology and infertility, male infertility, genetics, embryology and stem cell have been selected. Unfortunately in the field of epidemiology there was no elite project to be chosen as an award winner. Also, at the national level, three projects which received the highest credits will be awarded.

I would like to express my thanks from those scientists who participated in the Royan International Award. Additionally, I would like to thank the prominent scientists who undertook their best efforts to review the projects submitted for this award. Beyond holding the award in an agreeable condition every year, there is always our executive committee members who I must give my sincerest appreciation for their efforts.



## ROYAN Awards



Royan International Research Award was founded by late director of Royan Institute, Dr Saeid Kazemi Ashtiyani with the aim of encouraging the researchers, appreciation of their efforts and to prepare a friendly scientific atmosphere for researchers to exchange their knowledge and experiences. Kazemi had wonderful ideas to bring researchers together and motivate them to increase their efforts and perform high level researches that one of them was research award. Royan's staff lost their beloved director in January 2006 by heart attack, may he rest in peace.

This annual award is continuing its duty every year and become better and better. Increasing the scientific level and number of the submitted papers is a good evidence for that. The research papers are put in a hairsplitting jury system which relies on Award's international scientific board with special thanks to its honorable members. Each year five prominent researches with outstanding help in solving problems in reproduction and stem cell fields, are announced, appreciated and rewarded.

As comparing the researches in different fields is very difficult and finding best researchers among them with variations in methods, implements and results is almost impossible, from this year five same prizes are distributed between five winners. Each winner is selected from one of the following fields: female infertility, andrology, embryology, genetics and stem cell biology and technology.

The scope of subjects are:

Winners are rewarded by a certificate, award's symbol and \$5000 cash.

### The **First** Royan International Research Award | September 2000



#### **International Winners:**

- **First Place:** *Mohamed Mitwally*, Canada  
Comparison of an Aromatase Inhibitor with Clomiphene Citrate for Induction of Ovulation
- **Second Place:** *Ali Ahmady*, Canada  
Cell and Molecular Investigation of the Fertilizing Ability of Dead Sperm.
- **Third Place:** *Wei-hau Wang*, USA  
Spindle Observation in Living Human Eggs with Pollaries Microscope and Its Use in Assisted Human Reproduction



- **Fourth Place:** *Simon Marina Avendano*, Spain.  
HIV-Seropositive Can Be Fathers without Infecting the Women or Child
- **Fifth Place:** *Jaffar Ali*, Qatar  
Formulation of a Protein-Free Medium for Human Assisted Reproduction.

**Iranian Winners:**

- *Mohammad Hossein Nasr-Esfahani*  
Sperm Chromatin Status and Male Infertility
- *Mahnaz Ashrafi*  
Effect of Metformin on Ovulation and Pregnancy Rate in Women with Clomiphene Resistant PCOs
- *Mohammad Ebrahim Parsanezhad*  
Section of the Cervical Septum Doesn't Impair Reproductive Outcome

**The Second Royan International Research Award | September 2001**

Received Papers: **78**

**International Winners:**

- **First Place:** *Ri-Cheng Chian*, Canada  
A New Treatment for Women with Infertility Due to Polycystic Ovarian Syndrome: Immature Oocyte Retrieval Followed In-Vitro Maturation
- **Second Place:** *Ma'asouma Makhseed*, Kuwait  
The Possible Immunological Basis of Repeated Pregnancy Loss
- **Third Place:** *Esmail Behboodi*, USA  
Production of Goats by Somatic Cell Nuclear Transfer
- **Fourth Place:** *Sayeed Unisa*, India  
Reproductive, Demographic and Behavioral Causes of Infertility in India
- **Fifth Place:** *Ahmed Mohammed Saleh*, Saudi Arabia  
Effect of Laparoscopic Ovarian Drilling on Serum Vascular Endothelial Growth Factor (VEGF), and on Insulin Response to Oral Glucose Tolerance Test in Women with PCOs



September 2001

**Iranian Winners:**

- *Hossein Baharvand*, Royan Institute  
Improvement of Blastocyst Development In-Vitro and Overcoming the Blastocyst Collapse and Its Effective Factor(s) in Sequential Culture Media
- *Marzieh Nojomi*, Iran Medical University  
Epidemiology of Infertility in the West of Tehran 2000-2001
- *Gholamreza Pourmand*, Tehran Medical University  
Effect of Renal Transplantation on Sperm Quality and Sex Hormones Level



## The **Third** Royan International Research Award | September 2002

Received Papers: **212**

### **International Winners:**

- **First Place:** *Marco Filicori*, Italy  
Novel Approaches to Ovulation Induction: The Critical Role of Luteinizing Hormone Activity in Regulating Folliculogenesis.
- **Second Place:** *Klaus G. Steger*, Canada  
Influence of Histone-Protamine-Exchange on Male Infertility
- **Third Place:** *Franck Pellestor*, France  
Chromosomal Investigations in Human Gametes: Study of the Interchromosomal Effect in Sperm of Chromosomal Rearrangement Carriers and Mechanisms of Non Disjunction in Oocytes
- **Fourth Place:** *Ghazala S. Basir*, Hong Kong  
The Effect of High Estradiol Levels on Endometrial Development in Assisted Reproduction Technology: Evaluation of Sonographic Doppler Haemodynamic and Morphometric Parameters
- **Fifth Place:** *Mohamed Ali Bedaiwy*, USA  
Transplantation of Intact Frozen-Thawed Mammalian Ovary with Vascular Anastomosis: A Novel Approach



### **Iranian Winners:**

- *Saeed Alborzi*  
Laparoscopic Salpingoovulysis. Is There Any Place for Second Look Laparoscopy
- *Saeed Rahbar*  
Laser Assisted Hatching in Young Women Significantly Increases Pregnancy and Implantation Rates
- *Shir Ahmad Sarani*  
Morphological Evidence for the Implantation Window in Human Luminal Endometrium  
Special Winner in Reproductive Health:
- *V. I. Sodestrom- Anttila*, Finland  
Embryo Donation-Outcome & Attitude Among Embryo Donors & Recipient.

## The **Fourth** Royan International Research Award | September 2003

Received Papers: **222**

### **International Winners:**

- **First Place:** *Yong-Mahn Han*, South Korea  
Abnormal Structural Integrity and Reprogramming in the Cloned Embryos
- **Second Place:** *Lucille E. Voullaire*, Australia



Chromosome Abnormality In Human Embryos Diagnosed Using Comparative Genomic Hybridization: Its Relationship to Infertility

- **Third Place:** *Mauro Maccarrone*, Italy  
Low Fatty Acid Amide Hyrolase and Anandamide Levels Are Associated with Failure to Achieve an Ongoing Pregnancy after IVF and Embryo Transfer
- **Fourth Place:** *Ali Honaramooz*, USA  
Sperm From Neonatal Mammalian Testes Grafted In Mice
- **Fifth Place:** *Jan M.R. Gerris*  
Elective Single Embryo Transfer Halves the Twinning Rate without Decrease in the Total Ongoing Pregnancy Rate of an AVF/ICSI Program



**Iranian Winners:**

- *Mohammad E. Parsanezhad*  
Ovarian Stromal Blood Flow Changes After Laparoscopic Ovarian Cauterization in Women with Polycystic Ovary Syndrome
- *Mojdeh Salehnia*  
Vitrification of Ovarian Tissue
- *Jaleh Zolghadri*  
Successful Pregnancy Outcome With IUI in Patients with Unexplained Recurrent Miscarriage, Whose Male Partners Have Low Score Hypo-Osmotic Swelling Test

**The Fifth Royan International Research Award | September 2004**

Received Papers: **199**

**International Winners:**

- **Second Place:** *Alfonso Guitierrez-Adan*, Spain  
Long Term Effect of In Vitro Culture of Mouse Embryos with Serum on mRNA Expression of Imprinting Genes, Development and Behavior
- **Second Place:** *Maciej K. Kurpisz*, Poland  
Reactive Oxygen Species and “Male Factor” of Infertility
- **Third Place:** *Michel von wolf*, Germany  
Glucose Transporter Proteins (GLUT) in Human Endometrial-Expression, Regulation and Function Through out the Menstrual Cycle and in Early Pregnancy
- **Fourth Place:** *Sophie Lambard*, France  
Human Male Gamete Quality: Place of Aromatase and Estrogens
- **Fifth Place:** *Naojiro Minami*, Japan  
A Novel Maternal Effect Gene, Oogenesis: Involvement in Zygotic Gene Activation and Early Embryonic Development in the Mouse



**Iranian Winners:**

- *Seyed Javad Mowla*  
Catsper Gene Expression in Postnatal Development of Mouse Testis and in Subfertile Men with Deficient Sperm Motility
- *Mohammad A. Khalili*  
Restoration of Spermatogenesis by Adenoviral Gene Transfer into Injured Spinal Cords of Rats
- *Mojdeh Salehnia*  
Ultrastructural, Histochemical and Morphometric Studies of Mouse Reproductive Tract after Ovarian Induction

**The Sixth Royan International Research Award | September 2005**

Received Papers: **198**

**International Winners:**

- **First Place:** *Kathyjo Ann Jackson, USA*  
Therapeutic potential of stem cells
- **Second Place:** *Carmen Belen Martinez-Madrid, Belgium*  
Ficoll Density Gradient Method for Recovery of Isolated Human Ovarian Primordial Follicles
- **Third Place:** *Federico Alejandra Calegari, Germany*  
Tissue-Specific Manipulating of Gene Expression of Mouse Embryos Using in Utero Electroporation
- **Fourth Place:** *Maryam Kabir-salmani, Japan*  
Different Roles of  $\alpha_5\beta_1$  and  $\alpha_v\beta_3$  Integrins in the IGF-I-Induced Migration of the Human Extravillous Trophoblast Cells
- **Fifth Place:** *Zhenmin Lei, USA*  
Testicular Phenotype in Luteinizing Hormone Knockout Animals and the Effect of Testosterone Replacement Therapy





**Iranian Winners:**

- *Seyed Javad Mowla*  
The Profile of Gene Expression Changes During the Neural Differentiation of Bone Marrow Stromal Cells (BMSCs)
- *Jaleh Zolghadr*  
Pregnancy Outcome Following Laparoscopic Tubal Ligation of Hydrosalpinx Tube in Patients with Early Recurrent Abortion  
Finally this year we got more papers and the jury procedure was more difficult. The papers were very near together in scientific level, so, a hairsplitting jury procedure was needed to find out the best of them.

**The Seventh Royan International Research Award | September 2006**

Received Papers: **221**

**International Winners:**

- **First Place:** *James Affram Adjaye*, Germany  
A) Whole-Genome Approaches for Large-Scale Gene Identification and Expression Analysis in Mammalian Preimplantation Embryos & B) Primary Differentiation in the Human Blastocyst: Comparative Molecular Portraits of Inner Cell Mass and Trophectoderm Cells
- **Second Place:** *Tian-hua Huang*, China  
Detection and Expression of Hepatitis B Virus X Gene in One and Two-Cell Embryos from Golden Hamster Oocytes In-Vitro Fertilized with Human Spermatozoa Carrying HBV DNA
- **Third Place:** *Adrian Richard Eley*, UK  
Opoptosis of Ejaculated Human Sperm Is Induced by Co-Incubation with Chlamydia Trachomatis Lipopolysaccharide
- **Fourth Place:** *Lone Schmidt*, Denmark  
Does Infertility Cause Marital Benefit? An Epidemiological Study of 2250 Women and Men in Fertility Treatment
- **Fifth Place:** *Louis Chukwuemeka Ajonuma*, Hong Kong  
Molecular and Cellular Mechanisms Underlying Abnormal Fluid Formation in the Female Reproductive Tract: The Critical Role of Cystic Fibrosis Transmembrane Conductance Regulators.



**Iranian Winners:**

- *Mohammad Reza Baghban Eslami Nejad*  
Polarized Culture Systems and Their Effects on Embryo Development
- *Mansoureh Movahedin*  
New Approaches to Assess the Success and Enhance the Efficiency of Male Germ Cell Transplantation in the Mouse
- *Ashraf Alleyassin*  
Comparison of Unilateral and Bilateral Transfer of Injected Oocytes into Fallopian Tubes: A Prospective Randomized Clinical Trial



## The Eighth Royan International Research Award

September 2007

Received Papers: **248**

### **International Winners:**

Best research project in stem cell field

- *Chiba Shigeru*, Japan  
Role of Notch Signaling in Normal and Neoplastic Hematopoietic Stem Cells and Clinical Application of Notch Signal Modifiers

Best research project in reproductive genetics field

- *Françoise Dantzer*, France  
Poly (ADP-Ribose) Polymerase-2 Contributes to the Fidelity of Male Meiosis I and Spermiogenesis

Best research project in female fertility field

- *Seyed Mohammad Moazzeni*, Iran  
Dendritic Cells and Pregnancy: A Bidirectional Relationship to Protect the Semiallogenic Fetus

Best research project in embryology field

- *Bjorn Johannes Oback*, New Zealand  
Nuclear Donor Choice, Sperm Mediated Activation and Embryo Aggregation: A Multi-Pronged Approach to Sequentially Improve Cattle Cloning Efficacy

Best research project in andrology field

- *Reddanna Pallu*, India  
Role of Cyclooxygenases in Male Reproduction



### **Iranian Winners:**

- *Ramin Radpour*  
Novel Mutations and (TG)M(T)N Polymorphism in Iranian Males with Congenital Bilateral Absence of the Vas Deferens
- *Mohammad Ebrahim Parsanezhad*  
Hysteroscopic Metroplasty of the Complete Uterine Septum, Duplicate Cervix, and Vaginal Septum
- *Mehri Azadbakht*  
Apoptosis in Mouse Embryos Co-Cultured with Polarized or Non-Polarized Uterine Epithelial Cells Using Sequential Culture Media.



## The Ninth Royan International Research Award | August 2008

Received Papers: **202**

### **International Winners:**

Best research project in stem cell field

- *Su-Chun Zhang*, USA  
Human Embryonic Stem Cells As A Tool Of Discovery

Best research project in reproductive genetics field

- *Smita Mahale*, India  
Structural, Functional and Molecular Aspects of Follicle Stimulating Hormone Receptor: Applications in Designing Receptor Targets and Management of Female Infertility

Best research project in female fertility field

- *Federico Prefumo*, Italy  
Uterine Doppler Investigations And Trophoblast Biology In Early Pregnancy

Best research project in female fertility field

- *Saeed Alborzi*, Iran  
Laparoscopic Metroplasty In Bicornuate And Didelphic Uterus

Best research project in embryology field

- *Leen.Vanhoutte*, Belgium  
Nuclear And Cytoplasmic Maturation Of In Vitro Matured Human Oocytes After Temporary Nuclear Arrest By Phosphodiesterase 3-Inhibitor

Best research project in andrology field

- *T.O.Ogata*, Japan  
Haplotype Analysis Of The Estrogen Receptor Alpha Gene In Male Genital And Reproductive Abnormalities



### **Iranian Winners:**

- *Ali Fathi*  
The Molecular Mechanisms Controlling Embryonic Stem Cells (Escs) Proliferation And Differentiation
- *Fardin Fathi*  
Characterizing Endothelial Cells Derived From The Murine Embryonic Stem Cell Line CCE



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001	<b>Alarez-Buylla, Arturo</b>	<b>USA</b>	Epithelial Compartments of Adult Neural Stem Cells.
002	<b>Allam, Jean-Pierre</b>	<b>Germany</b>	High Percentage of Apoptotic Spermatozoa in Ejaculates From Men with Chronic Genital Tract Inflammation
003	<b>Anand, Taruna</b>	<b>India</b>	Cysteamine Supplementation of in Vitro Maturation Medium, in Vitro Culture Medium or Both Media Promotes in Vitro Development of Buffalo (Bubalus Bubalis) Embryos
004	<b>Asthana, Deshratn</b>	<b>USA</b>	Analysis of Immunological Markers Associated with Pregnancy and HIV-1 Infection: Relevance in Perinatal Transmission in HIV-1-Infected Pregnant Women with Low Plasma Viral Load
005	<b>Aybek, Hülya</b>	<b>Turkey</b>	The Effects of Diabetes Mellitus, Age, and Vitamin E on Testicular Oxidative Stress.
006	<b>Baekelandt, Veerle</b>	<b>Belgium</b>	Noninvasive and Quantitative Monitoring of Adult Neuronal Stem Cell Migration in Mouse Brain Using Bioluminescence Imaging
007	<b>Baradar Khoshfetrat, Ali</b>	<b>Japan</b>	Characterization of Chondrocyte Behaviors Affecting Quality of Cultured Cartilage
008	<b>Barata, Eduardo</b>	<b>Portugal</b>	Chemical Communication in the Reproduction of Blenny Fish: Origin and Function of Male Pheromones, and Endocrine Control of Production
009	<b>Bárcena, José Antonio</b>	<b>Spain</b>	Changes in the Proteome of Functional and Regressing Corpus Luteum During Pregnancy and Lactation in the Rat
010	<b>Barekati, Zeinab</b>	<b>Iran</b>	Previous Maternal Chemotherapy By Cyclophosphamide (Cp) Causes Numerical Chromosome Abnormalities in Preimplantation Mouse Embryos
011	<b>Basu, Basudha</b>	<b>India</b>	Serotonin in Pre-Implantation Mouse Embryos Is Localized to the Mitochondria and Can Modulate Mitochondrial Potential
012	<b>Bera, Tapan</b>	<b>USA</b>	A Primate-Specific Gene Family POTE Is Expressed Differentially in Undifferentiated Embryonic Stem Cells and Might Play a Role in Lineage-Specific Stem Cell Differentiation.
013	<b>Bhojwani, Sanjay</b>	<b>Germany</b>	Adversely Affected Actin-Catenin-Cadherin System and Reduced Intercellular Contacts Hamper the Developmental Competence of Bovine Nuclear Transfer Embryos
014	<b>Blaszowska, Joanna</b>	<b>Poland</b>	Prenatal Toxicity of Ascaris Pepsin Inhibitor in Mice
015	<b>Bosveld, Floris</b>	<b>Netherlands</b>	Establishment of Cell Fate During Early Drosophila Embryogenesis Requires Transcriptional Mediator Subunit Dmed31.
016	<b>Brucker, Sara</b>	<b>Germany</b>	Neovagina Creation in Vaginal Agenesis: Development of a New Laparoscopic Vecchietti-Based Procedure and Optimized Instruments in a Prospective Comparative Interventional Study in 101 Patients
017	<b>Budik, Sven</b>	<b>Austria</b>	Significance of Aquaporins and Sodium Potassium Atpase Subunits for Expansion of the Early Equine Conceptus.
018	<b>Cakmak, yusuf</b>	<b>Turkey</b>	Point- and Frequency-Specific Response of the Testicular Artery to Abdominal Electroacupuncture in Humans
019	<b>Carpino, Amalia</b>	<b>Italy</b>	Leptin and Leptin Receptor in Pig Spermatozoa: Evidence of Their Involvement in Sperm Capacitation and Survival
020	<b>Castaldo, Clotilde</b>	<b>Italy</b>	CD117-Positive Cells in Adult Human Heart Are Localized in the Subepicardium, and Their Activation Is Associated with Laminin-1 and Alpha-6 Integrin Expression
021	<b>Celebi, Muzaffer</b>	<b>USA</b>	Blocking E-Selectin Inhibits Ischaemia-Reperfusion-Induced Neutrophil Recruitment to the Murine Testis
022	<b>Cepni, Ismail</b>	<b>Turkey</b>	Expression and Comparison of Gap Junction Protein Connexin 37 in Granulosa Cells Aspirates From Follicles of Poor Responder and Non Poor Responder Patients
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024	<b>Chen, Min</b>	<b>China</b>	Effect of 43°C Treatment on Expression of Heat Shock Proteins 105, 70 and 60 in Cultured Monkey Sertoli Cells
025	<b>Chen, Chie-Pein</b>	<b>Taiwan</b>	Trafficking of Multipotent Mesenchymal Stromal Cells From Maternal Circulation Through the Placenta Involves VEGFR-1 and Integrins
026	<b>Chi, Hee-Jun</b>	<b>Korea</b>	Protective Effect of Antioxidant Supplementation in Sperm-Preparation Medium Against Oxidative Stress in Human Spermatozoa



No	Name	Country	Title
027	<b>Chieffi, Paolo</b>	<b>Italy</b>	Detection of High Mobility Group Proteins A1 and A2 Represents a Valid Diagnostic Marker in Post-Puberal Testicular Germ Cell Tumors
028	<b>Chieffi, Paolo</b>	<b>Italy</b>	PATZ1 Gene Has a Critical Role in the Spermatogenesis and Testicular Tumours
029	<b>Choi, Inpyo</b>	<b>Korea</b>	Osteopontin Promotes the Development of Natural Killer Cells From Hematopoietic Stem Cells
030	<b>Ciepiela, Przemyslaw</b>	<b>Poland</b>	Comparison of Embryological and Clinical Outcome in GnRh Antagonist Vs. GnRh Agonist Protocols for in Vitro Fertilization in PCOS Non-Obese Patients. a Prospective Randomized Study
031	<b>Claahsen-van der Grinten, Hedi</b>	<b>Netherlands</b>	Testicular Adrenal Rest Tumours in Patients with Congenital Adrenal Hyperplasia Can Cause Severe Testicular Damage
032	<b>Coprav, Sjef</b>	<b>Netherlands</b>	Differentiation of Neural Stem Cells Into Oligodendrocytes: Involvement of the Polycomb Group Protein Ezh2.
033	<b>Cosma, Maria Pia</b>	<b>Italy</b>	Periodic Activation of Wnt/Beta-Catenin Signaling Enhances Somatic Cell Reprogramming Mediated By Cell Fusion
034	<b>De Zwart, Loeckie</b>	<b>Belgium</b>	The Ontogeny of Drug Metabolizing Enzymes and Transporters in the Rat
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036	<b>Delbaere, Ilse</b>	<b>Belgium</b>	Perinatal Outcome of Twin Pregnancies in Women of Advanced Age
037	<b>D'Hooghe, Thomas</b>	<b>Belgium</b>	Endometrial and Peritoneal Expression of Aromatase, Cytokines, and Adhesion Factors in Women with Endometriosis
038	<b>D'Hooghe, Thomas</b>	<b>Belgium</b>	Global Gene Analysis of Late Secretory Phase, Eutopic Endometrium Does Not Provide the Basis for a Minimally Invasive Test of Endometriosis
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040	<b>Dirican, Enver</b>	<b>Turkey</b>	Clinical Outcome of Magnetic Activated Cell Sorting of Non-Apoptotic Spermatozoa Before Density Gradient Centrifugation for Assisted Reproduction
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043	<b>Durakbasi-Dursun, Hatice</b>	<b>Turkey</b>	REPRODUCTIVE BIOLOGY a New Approach to Chromosomal Abnormalities in Sperm From Patients with Oligoasthenoteratozoospermia: Detection of Double Aneuploidy in Addition to Single Aneuploidy and Diploidy By Five-Color Fluorescence in Situ Hybridization Using One Probe Set
044	<b>Elgindy, Eman</b>	<b>Egypt</b>	Anti-Müllerian Hormone: Correlation of Early Follicular, Ovulatory and Midluteal Levels with Ovarian Response and Cycle Outcome in Intracytoplasmic Sperm Injection Patients
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048	<b>Fathi, Fardin</b>	<b>Iran</b>	Characterization and Genetic Manipulation of Human Umbilical Cord Vein Mesenchymal Stem Cells: Potential Application in Cell-Based Gene Therapy
049	<b>Fauzia, Haq Nawaz</b>	<b>Pakistan</b>	Infertility and Polycystic Ovarian Syndrome: a Study of Association Between Body Mass Index and Intrafamily Marriages
050	<b>Fauzia, Haq Nawaz</b>	<b>Pakistan</b>	Does Use of Metformin Throughout Pregnancy Improve Pregnancy Outcome in Women with Polycystic Ovarian Syndrome? a Study From Aga Khan University Karachi, Pakistan
051	<b>Fenkci, Semin</b>	<b>Turkey</b>	Serum Total L-Carnitine Levels in Non-Obese Women with Polycystic Ovary Syndrome
052	<b>Ferrero, Simone</b>	<b>Italy</b>	Peritoneal Fluid Macrophages in Endometriosis: Correlation Between the Expression of Estrogen Receptors and Inflammation
053	<b>Flament, Stephane</b>	<b>France</b>	Freemartin in the Amphibian Pleurodeles Waltl: Parabiosis Between Individuals From Opposite Sex Triggers Both Germ and Somatic Cells Alterations During Female Gonad Development.
054	<b>Franco Jr, Jose</b>	<b>Brazil</b>	Significance of Large Nuclear Vacuoles in Human Spermatozoa: Implications for ICSI
055	<b>Fukui, Atsushi</b>	<b>USA</b>	Intracellular Cytokine Expression of Peripheral Blood NK Cell Subsets in Women with Recurrent Spontaneous Abortions and Implantation Failures
056	<b>Garagna, Silvia</b>	<b>Italy</b>	A Mitochondrial Mechanism Is Involved in Apoptosis of Spermatoocytes That Escape Pachytene Arrest in Mouse Robertsonian Heterozygotes.



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057	<b>Gastal, Eduardo</b>	<b>USA</b>	Importance of the Mare As An Experimental Model for Study of Ovarian Function in Woman.
058	<b>Gastal, Eduardo</b>	<b>USA</b>	Ovarian and Uterine Blood Flow and Perfusion: the Mare As a Research Model for Studies in Women.
059	<b>Gavalas, Anthony</b>	<b>Greece</b>	Novel Effectors of Directed and Ngn3 Mediated Differentiation of Mouse Embryonic Stem Cells Into Endocrine Pancreas Progenitors
060	<b>Gdoura, Radhouane</b>	<b>Tunisia</b>	Screening for Bacterial Pathogens in Semen Samples From Infertile Men with and Without Leukocytospermia
061	<b>Glinianaia, Svetlana</b>	<b>UK</b>	Congenital Anomalies in Twins: a Register-Based Study
062	<b>Gloria-Bottini, Fulvia</b>	<b>Italy</b>	The Effect of Genetic and Seasonal Factors on Reproductive Success
063	<b>Goel, Sandeep</b>	<b>Japan</b>	Multipotency of Cultured Germ Cells Isolated From Neonatal Pig Testis
064	<b>Golmohammadi, Mohammad</b>	<b>Iran</b>	Comparative Analysis of the Frequency and Distribution of Stem and Progenitor Cells in the Adult Mouse Brain
065	<b>Gonzalez Gonzalez, Cristina</b>	<b>Spain</b>	Improvement in Strategies for the Non-Invasive Prenatal Diagnosis of Huntington Disease
066	<b>Gonzalez-Bulnes, Antonio</b>	<b>Spain</b>	Systemic and Intraovarian Follicular Dominance Effects During Controlled Ovarian Stimulation
067	<b>Granese, Roberta</b>	<b>Italy</b>	Bladder Endometriosis Laparoscopic Treatment and Follow-Up
068	<b>Grasselli, francesca</b>	<b>Italy</b>	Reactive Oxygen Species and Antioxidant Defences in Swine Follicular Fluids
069	<b>Gritti, Angela</b>	<b>Italy</b>	Efficient in Vitro Labeling of Human Neural Precursor Cells with Superparamagnetic Iron Oxide Particles: Relevance for in Vivo Cell Tracking. Stem Cells
070	<b>Guo, Sun-Wei</b>	<b>China</b>	Patterns of and Factors Potentially Influencing the Age At First Surgery for Women with Ovarian Endometriomas
071	<b>Hackethal, Andreas</b>	<b>Germany</b>	Uterine Compression U-Sutures in Primary Postpartum Hemorrhage After Cesarean Section: Fertility Preservation with a Simple and Effective Technique
072	<b>Halasz, Melinda</b>	<b>Hungary</b>	What Harbours the Cradle of Life? the Progesterone-Dependent Immunomodulation
073	<b>Hardingham, Timothy</b>	<b>UK</b>	Notch Signaling Through Jagged-1 Is Necessary to Initiate Chondrogenesis in Human Bone Marrow Stromal Cells, But Must Be Switched Off to Complete Chondrogenesis.
074	<b>Helige, Christine</b>	<b>Austria</b>	Trophoblastic Invasion in Vitro and in Vivo: Similarities and Differences
075	<b>Heng, Boon</b>	<b>Singapore</b>	Loss of Viability During Freeze-Thaw of Intact and Adherent Human Embryonic Stem Cells with Conventional Slow-Cooling Protocols Is Predominantly Due to Apoptosis Rather Than Cellular Necrosis.
076	<b>Heng, Boon</b>	<b>Singapore</b>	Differentiated Fibroblastic Progenies of Human Embryonic Stem Cells for Toxicology Screening.
077	<b>Hong-Shan, Ge</b>	<b>China</b>	Exposure to Human Chorionic Gonadotropin During in Vitro Maturation Does Not Improve the Maturation Rate and Developmental Potential of Immature Oocytes From Patients with Polycystic Ovary Syndrome
078	<b>Hori, Yuichi</b>	<b>Japan</b>	Enrichment of Putative Pancreatic Progenitor Cells From Mice By Sorting for Prominin1 (CD133) and Pdgfrβ
079	<b>Horikawa, Takashi</b>	<b>Japan</b>	The Frequency of Ovulation From Diseased Ovaries Decreased After Laparoscopic Cystectomy in Infertile Women with Unilateral Endometrioma in Natural Cycle
080	<b>Hornung, Daniela</b>	<b>Germany</b>	L1 Cell Adhesion Molecule (L1CAM) As a Pathogenetic Factor in Endometriosis
081	<b>Houchen, Courtney</b>	<b>USA</b>	Identification of a Novel Putative Gastrointestinal Stem Cell and Adenoma Stem Cell Marker, Doublecortin and Cam Kinase-Like-1, Following Radiation Injury and in Adenomatous Polyposis Coli/Multiple Intestinal Neoplasia Mice.
082	<b>Huang, Tian-Hua</b>	<b>China</b>	Study on Recombinant Protein 6His-Mizumo and Plasmid Pcxn2-Mizumo As a Potential Immunocontraceptive Antigen
083	<b>Huber, Susanne</b>	<b>Austria</b>	Month of Birth and Reproductive Performance of Women: Data From the Southern Hemisphere
084	<b>Huppertz, Berthold</b>	<b>Austria</b>	Placental Origins of Preeclampsia: Challenging the Current Hypothesis
085	<b>Ibarreta, Dolores</b>	<b>Spain</b>	Provision and Quality Assurance of Preimplantation Genetic Diagnosis in Europe
086	<b>Izadyar, Fariborz</b>	<b>USA</b>	Generation of Multipotent Cell Lines From Distinct Population of Male Germ Line Stem Cells
087	<b>Jaishankar, Amritha</b>	<b>USA</b>	Human Embryonic and Mesenchymal Stem Cells Express Different Nuclear Proteomes
088	<b>Jedrzejczak, Piotr</b>	<b>Poland</b>	Prediction of Spontaneous Conception Based on Semen Parameters.
089	<b>Johnson, Larry</b>	<b>USA</b>	Role of Sertoli Cell Number and Function on Regulation of Spermatogenesis
090	<b>Kabir-salmami, Maryam</b>	<b>Iran</b>	Adhesion Molecules At the Embryo-Maternal Interface
091	<b>Kalani, Mohammad Yashar</b>	<b>USA</b>	Wnt-Mediated Self-Renewal of Neural Stem/Progenitor Cells.



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092	<b>Kalthur</b> , Guruprasad	<b>India</b>	Effect of Cryopreservation on Sperm DNA Integrity in Patients with Teratospermia
093	<b>Kattal</b> , Namita	<b>USA</b>	Role of Coculture in Human In-Vitro Fertilization (IVF): a Meta-Analysis
094	<b>Kelly</b> , Gregory	<b>Canada</b>	Mouse G-Protein Gamma3 Expression in the Developing CNS and Neural Crest Cell Derivatives.
095	<b>Khalifa</b> , Tarek	<b>Germany</b>	Factors Affecting Chromatin Stability of Bovine Spermatozoa
096	<b>Khan</b> , Khaleque	<b>Japan</b>	Toll-Like Receptor 4 (TLR4)-Mediated Growth of Endometriosis By Bacterial Endotoxin and Human Heat-Shock Protein 70 (Hsp70)
097	<b>Kobayashi</b> , Hiroshi	<b>Japan</b>	Ovarian Endometrioma -- Risks Factors of Ovarian Cancer Development --
098	<b>Koundouros</b> , Savvas	<b>Cyprus</b>	A Novel Stimulation Protocol
099	<b>Kucuk</b> , Tansu	<b>Turkey</b>	“Chromohysteroscopy” for Evaluation of Endometrium in Recurrent in Vitro Fertilization Failure
100	<b>Kucuk</b> , Tansu	<b>Turkey</b>	Growth Hormone Co-Treatment Within a GnRH Agonist Long Protocol in Patients with Poor Ovarian Response: a Prospective, Randomized, Clinical Trial
101	<b>Kucuk</b> , Tansu	<b>Turkey</b>	Effect of Heat-Induced Hypermotility on Pregnancy Rate in Intrauterine Insemination for Male Factor Infertility Associated with Asthenospermia: a Prospective, Randomized, Controlled Study
102	<b>Kumar</b> , Priyadarsini	<b>USA</b>	Identification and Spatial Distribution of Glycine Receptor Subunits in Human Sperm
103	<b>Kumbak</b> , Banu	<b>Turkey</b>	In Vitro Fertilization in Patients with Endometriomas: Comparison with Basal Simple Ovarian Cysts
104	<b>Lampiao</b> , Fanuel	<b>South Africa</b>	Insulin and Leptin Enhance Human Sperm Motility, Acrosome Reaction and Nitric Oxide Production
105	<b>Lan</b> , Zi-Jian	<b>USA</b>	0610009K11Rik, a Testis-Specific and Germ Cell Nuclear Receptor-Interacting Protein
106	<b>Lang-Olip</b> , Ingrid	<b>Austria</b>	Human Fetal Placental Endothelial Cells Have a Mature Arterial and a Juvenile Venous Phenotype with Adipogenic and Osteogenic Differentiation Potential
107	<b>Laurent</b> , Louise	<b>USA</b>	Comprehensive MicroRNA Profiling Reveals a Unique Human Embryonic Stem Cell Signature Dominated By a Single Seed Sequence
108	<b>Lazennec</b> , Gwendal	<b>France</b>	Adult Multipotent Stromal Cells and Cancer: Risk or Benefit?
109	<b>Lee</b> , Hong Kyu	<b>Korea</b>	Betacellulin and Nicotinamide Sustain PDX1 Expression and Induce Pancreatic Beta Cell Differentiation in Human Embryonic Stem Cells
110	<b>Li</b> , Weiyi	<b>China</b>	The Effect of Vasocation Intestinal Peptide on Immune Privilege of the Rat Testis
111	<b>Li</b> , Rong	<b>China</b>	Local Injury to the Endometrium in Controlled Ovarian Hyperstimulation Cycles Improves Implantation Rates
112	<b>Li</b> , Zandong	<b>China</b>	Effects of 17beta-Estradiol on Distribution of Primordial Germ Cell Migration in Male Chicks
113	<b>Li</b> , Tao-Sheng	<b>Japan</b>	TGF-Beta Induced Differentiation of Bone Marrow Stem Cells Into Cardiomyocytes
114	<b>Lim</b> , In Kyoung	<b>Korea</b>	TIS21/(BTG2) Negatively Regulates Estradiol-Stimulated Expansion of Hematopoietic Stem Cells By Derepressing Akt Phosphorylation and Inhibiting Mtor Signal Transduction
115	<b>Liu</b> , Yi	<b>China</b>	Dental Stem Cells-Based Tissue Regeneration in a Large Animal Model
116	<b>Liu</b> , Shing-Hwa	<b>Taiwan</b>	A Novel Human Stem Cell-Co-Culture System That Maintains the Survival and Function of Culture Islet-Like Cell Clusters
117	<b>Lloyd</b> , Rhiannon	<b>UK</b>	Temporal Dynamics of Ram Sperm Binding and Survival During 48-H Coculture with Oviducal Epithelial Cells
118	<b>Lopez</b> , Luis	<b>Argentina</b>	Identification and Characterization of Myosin From Testicular Peritubular Myoid Cells.
119	<b>Lu</b> , Jente	<b>USA</b>	Dielectrophoresis Reveals Biological Differences in Stem Cell Subpopulations
120	<b>Luisi</b> , Stefano	<b>Italy</b>	High Serum Concentration of Total Inhibin in Polycystic Ovary Syndrome
121	<b>Lysy</b> , Philippe	<b>Belgium</b>	Leukemia Inhibitory Factor Contributes to Hepatocyte-Like Differentiation of Human Bone Marrow Mesenchymal Stem Cells
122	<b>Magelssen</b> , Henriette	<b>Norway</b>	Parenthood Probability and Pregnancy Outcome in Patients with a Cancer Diagnosis During Adolescence and Young Adulthood
123	<b>Mahdi</b> , Djahida	<b>Algeria</b>	Relationship Between Follicle Growth and Circulating Gonadotrophin Levels During Postnatal Development of Sheep
124	<b>Mahdi</b> , Abbas	<b>India</b>	Role of Mucuna Pruriens in Treatment of Male Infertility
125	<b>Majumder</b> , Gopal	<b>India</b>	Role of the Major Ecto-Phosphoprotein in Sperm Flagellar Motility Using a Cell Electroporation Method
126	<b>Marra</b> , Kacey	<b>USA</b>	Characterization of Transplanted Green Fluorescent Protein+ Bone Marrow Cells Into Adipose Tissue
127	<b>Mattle</b> , Verena	<b>Austria</b>	Unmasking Polycystic Ovarian Disease By Pulsatile GnRH Therapy



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128	<b>McGehee, Robert</b>	<b>USA</b>	Expression of P107 and P130 During Human Adipose-Derived Stem Cell Adipogenesis
129	<b>Melgar, Silvia</b>	<b>Sweden</b>	Intra-Colonic Administration of the TLR7 Agonist R-848 Induces An Acute Local and Systemic Inflammation in Mice
130	<b>Metafora, Salvatore</b>	<b>Italy</b>	Anti-Apoptotic Seminal Vesicle Protein IV Inhibits Cell-Mediated Immunity
131	<b>Mettler, Liselotte</b>	<b>UK</b>	A Safety and Efficacy Study of a Resorbable Hydrogel for Reduction of Post-Operative Adhesions Following Myomectomy
132	<b>Mhaouty-Kodja, Sakina</b>	<b>France</b>	A New Signalling Pathway for Myometrial Alpha Adrenergic Receptors and Mechanisms of Parturition
133	<b>Mifune, Yutaka</b>	<b>Japan</b>	Local Delivery of Granulocyte Colony Stimulating Factor-Mobilized CD34-Positive Progenitor Cells Using Bioscaffold for Modality of Unhealing Bone Fracture
134	<b>Miñana, Maria Dolores</b>	<b>Spain</b>	Identification of Hemangioblasts in the Adult Human Adipose Tissue
135	<b>Mirahmadian, Mahroo</b>	<b>Iran</b>	Association of Tumor Necrosis Factor-Alpha and Interleukin-10 Gene Polymorphisms in Iranian Patients with Pre-Eclampsia
136	<b>Modo, Michel</b>	<b>UK</b>	Effect of Inflammatory Cytokines on Major Histocompatibility Complex Expression and Differentiation of Human Neural Stem/Progenitor Cells.
137	<b>Mohammadi, Ali akbar</b>	<b>Iran</b>	A Comparison Study of Different Methods Used to Separate Epidermal Cells for Autologous Transplantation
138	<b>Monteleone, Patrizia</b>	<b>Italy</b>	Follicular Fluid VEGF Levels Directly Correlate with Perifollicular Blood Flow in Normoresponder Patients Undergoing IVF
139	<b>Morandi, Fabio</b>	<b>Italy</b>	Immunogenicity of Human Mesenchymal Stem Cells in Hla-Class I Restricted T Cell Responses Against Viral or Tumor-Associated Antigens
140	<b>Morato, Roser</b>	<b>Spain</b>	Effects of Pre-Treating in Vitro-Matured Bovine Oocytes with the Cytoskeleton Stabilizing Agent Taxol Prior to Vitrification
141	<b>Moreno, Norma</b>	<b>Mexico</b>	A System to Evaluate the Quality of Frozen Embryos Through Short-Term Culture.
142	<b>Morton, Cynthia</b>	<b>USA</b>	The Impact of Race As a Risk Factor for Symptom Severity and Age At Diagnosis of Uterine Leiomyomata Among Affected Sisters
143	<b>Mowla, Seyed javad</b>	<b>Iran</b>	OCT4 Spliced Variants Are Differentially Expressed in Human Pluripotent and Nonpluripotent Cells
144	<b>Mozdarani, Hossein</b>	<b>Iran</b>	Reduction of Induced Transgenerational Genomic Instability in Gametes Using Vitamins E and C, Observed As Chromosomal Aneuploidy and Micronuclei in Preimplantation Embryos
145	<b>Nadri, Samad</b>	<b>Iran</b>	A Protocol for Isolation and Culture of Mesenchymal Stem Cells From Mouse Bone Marrow
146	<b>Nandi, Sumanta</b>	<b>India</b>	Biochemical Characterization of Ovine Follicular Fluid and Identification and Functional Characterization of a Novel Follicular Fluid Peptide
147	<b>Nardi, Nance</b>	<b>Brazil</b>	In Search of the in Vivo Identity of Mesenchymal Stem Cells
148	<b>Nasrabadi, Davood</b>	<b>Iran</b>	Proteomic Analysis of Monkey Embryonic Stem Cell During Differentiation
149	<b>Nawroth, Frank</b>	<b>Germany</b>	What Can We Expect If We Measure Hormones in Eumenorrhoeic Infertile Patients?
150	<b>Niu, Yuyu</b>	<b>China</b>	Impairments in Embryonic Genome Activation in Rhesus Monkey Somatic Cell Nuclear Transfer Embryos
151	<b>Noguchi, Hirofumi</b>	<b>Japan</b>	Cell Surface Heparan Sulfate Proteoglycans Mediate the Internalization of PDX-1 Protein
152	<b>Nozadcharoudeh, Hojjatollah</b>	<b>Sweden</b>	Distinct and Overlapping Patterns of Cytokine Regulation of Thymic and Bone Marrow-Derived NK Cell Development I
153	<b>O'Connor, Michael</b>	<b>Canada</b>	Alkaline Phosphatase-Positive Colony Formation Is a Sensitive, Specific, and Quantitative Indicator of Undifferentiated Human Embryonic Stem Cells
154	<b>Ohta, Hiroshi</b>	<b>Japan</b>	Inducing Male Germ Cell Differentiation and Functional Assessment of Male Gametes
155	<b>Olivares, Carla</b>	<b>Argentina</b>	Effects of a Selective Cyclooxygenase-2 Inhibitor on Endometrial Epithelial Cells From Patients with Endometriosis
156	<b>OO, Wai-sum</b>	<b>China</b>	Adrenomedullin in Male and Female Reproduction
157	<b>Orazizadeh, Mahmoud</b>	<b>Iran</b>	Effects of Dexamethasone (Dex) on Apoptosis in the Mouse Testicular Germ Cells
158	<b>Ostojic, Sasa</b>	<b>Croatia, Slovenia</b>	Genetic Predisposition to Idiopathic Recurrent Spontaneous Abortion: Contribution of Genetic Variations in Igf2 and H19 Imprinted Genes
159	<b>Özdemirler Erata, Gül</b>	<b>Turkey</b>	The Role of Heat Shock Protein 70 (Hsp 70) in Male Infertility: Is It a Line of Defense Against Sperm DNA Fragmentation?
160	<b>Pace, Gianna</b>	<b>Italy</b>	Ejaculatory Duct Obstruction Caused By a Right Giant Seminal Vesicle with An Ipsilateral Upper Urinary Tract Agenesis: An Embryologic Malformation



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161	<b>Palep-Singh</b> , Manisha	<b>UK</b>	Plasma Homocysteine Concentrations and the Single Nucleotide Polymorphism in the Methionine Synthase Gene (MTR 2756A > G): Associations with the Polycystic Ovary Syndrome -An Observational Study
162	<b>Pang</b> , Zhanjun	<b>CHina</b>	Interleukin-10 May Participate in Regulating Trophoblast Invasion in Human Placentae Throughout Gestation
163	<b>Papaioannou</b> , Virginia	<b>USA</b>	The Oocyte Population Is Not Renewed in Transplanted or Irradiated Adult Ovaries
164	<b>Parmegiani</b> , Lodovico	<b>Italy</b>	Freezing Within 2 H From Oocyte Retrieval Increases the Efficiency of Human Oocyte Cryopreservation When Using a Slow Freezing/Rapid Thawing Protocol with High Sucrose Concentration
165	<b>Perez-Medina</b> , Tirso	<b>Spain</b>	Torsion of the Fallopian Tube and Acute Pelvic Pain: An Unusual Presentation of Genital Tuberculosis
166	<b>Pfister</b> , Daniela	<b>Austria</b>	Flatworm Stem Cells and the Germ Line: Developmental and Evolutionary Implications of Macvsa Expression in Macrostomum Lignano
167	<b>Polak</b> , Ester	<b>Argentina</b>	Human Parthenogenetic Blastocysts Derived From Noninseminated Cryopreserved Human Oocytes
168	<b>Ponnazhagan</b> , Selvarangan	<b>USA</b>	Therapeutic Potential of Mesenchymal Stem Cells Producing IFN- $\alpha$ in a Mouse Melanoma Lung Metastasis Model
169	<b>Ratajczak</b> , Mariusz	<b>USA</b>	Evidence That Very Small Embryonic Like (Vsel) Stem Cells Are Mobilized Into Peripheral Blood
170	<b>Reddy</b> , Kudumula	<b>India</b>	Identification of Genes Regulated By An Interaction Between Av $\beta$ 3 Integrin and Its Ligand Vitronectin in Murine Decidua
171	<b>Reis</b> , Camila	<b>Brazil</b>	Spindle Imaging: a Marker for Embryo Development and Implantation
172	<b>Rodriguez-Burgos</b> , Antonio	<b>Spain</b>	Developmental Delay and Other Anomalies in the Offspring From Hens Immunized Against Soluble and Foreign Chick Embryo Antigens
173	<b>Rogenhofer</b> , Nina	<b>Germany</b>	Enzyme Linked Immunosorbent Assay (ELISA) As Screening Method for Anti-Paternal Allo-Antibodies in Patients with Recurrent Pregnancy Loss (RPL).
174	<b>Roh</b> , Sangho	<b>Korea</b>	Kinetin Enhances In Vitro Development of Parthenogenetic and Nuclear Transfer Porcine Embryos
175	<b>Sá</b> , Rosália Maria	<b>Portugal</b>	Cytological and Expression Studies and Quantitative Analysis of the Temporal and Stage-Specific Effects of Follicle-Stimulating Hormone and Testosterone During Cocultures of the Normal Human Seminiferous Epithelium
176	<b>Sachdeva</b> , Geetanjali	<b>India</b>	Molecular Assessment of the Uterine Milieu During Implantation Window in Humans and Non-Human Primates
177	<b>Safarinejad</b> , Mohammad Reza	<b>Iran</b>	Long Term Effects of Sulfur Mustard Gas on the Sperm DNA Integrity in Sulfur Mustard Gas Casualties' Men, Assessed By Sperm Chromatin Structure Assay
178	<b>Safarinejad</b> , Mohammad Reza	<b>Iran</b>	The Effects of Intensive, Long-Term Treadmill Running on Reproductive Hormones, Hypothalamus–Pituitary–Testis Axis, and Semen Quality: a Randomized Controlled Study
179	<b>Safarinejad</b> , Mohammad Reza	<b>Iran</b>	Evaluation of the Safety and Efficacy of Sildenafil Citrate for Erectile Dysfunction in Men with Multiple Sclerosis: a Double-Blind, Placebo Controlled, Randomized Study
180	<b>Safarinejad</b> , Mohammad Reza	<b>Iran</b>	Evaluation Safety and Efficacy of Bremelanotide, a Melanocortin Receptor Agonist, in Female Subjects with Arousal Disorder: a Double Blind Placebo-Controlled, Fixed Dose, Randomized Study
181	<b>Safarinejad</b> , Mohammad Reza	<b>Iran</b>	The Effect of the Mode of Delivery on the Quality of Life, Sexual Functioning and Sexual Satisfaction in Primiparous Women and Their Husbands
182	<b>Safarinejad</b> , Mohammad Reza	<b>Iran</b>	Population Based Study on Major Reproductive Problems in Iran.
183	<b>Safarinejad</b> , Mohammad Reza	<b>Iran</b>	Evidence Based Medicine on the Pharmacologic Management of Premature Ejaculation
184	<b>Safarinejad</b> , Mohammad Reza	<b>Iran</b>	Male Endocrine Profile and Fertility Status in Multiple Sclerosis and Thalassemia Major
185	<b>Safarinejad</b> , Mohammad Reza	<b>Iran</b>	Safety and Efficacy of Sildenafil in Treatment of Neurogenic and Psychogenic Erectile Dysfunction
186	<b>Safarinejad</b> , Mohammad Reza	<b>Iran</b>	Pharmacologic Management of Peyronie's Disease
187	<b>Safarinejad</b> , Mohammad Reza	<b>Iran</b>	The Role of Serotonin and Selective Serotonin Reuptake Inhibitors on Disturbed Endocrine Profile, Sexual Function and Semen Parameters
188	<b>Safarinejad</b> , Mohammad Reza	<b>Iran</b>	Pharmacologic Management of Idiopathic Male Infertility



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189	<b>Salehnia</b> , Mojdeh	<b>Iran</b>	In Vtro Maturation and Development of Isolated Follicles Derived From Vitrified and Non-Vitrified Ovarian Tissue
190	<b>Sampath</b> , Prabha	<b>USA</b>	Beyond Transcription: Translational Control in Embryonic Stem Cells
191	<b>Saraswat</b> , Lucky	<b>UK</b>	Caesarean Section and Tubal Infertility: Is There An Association?
192	<b>Sauer</b> , Heinrich	<b>Germany</b>	Peroxisome Proliferator-Activated Receptor Alpha Agonists Enhance Cardiomyogenesis of Mouse ES Cells By Utilization of a Reactive Oxygen Species-Dependent Mechanism.
193	<b>Scarfi</b> , Sonia	<b>Italy</b>	Cyclic ADP-Ribose-Mediated Expansion and Stimulation of Human Mesenchymal Stem Cells By the Plant Hormone Abscisic Acid
194	<b>Schmidt</b> , Ed	<b>USA</b>	Syngeneic Immune-Dependent Abortions in Mice Suggest Paternal Alloantigen-Independent Mechanisms
195	<b>Secco</b> , Mariane	<b>Brazil</b>	Multipotent Stem Cells From Umbilical Cord: Cord Is Richer Than Blood!
196	<b>Selwood</b> , Lynne	<b>Australia</b>	Novel Immunocontraceptive Targets in Mammals: Uterine Secretions and the Conceptus; a Marsupial Approach
197	<b>Sentilhes</b> , Loïc	<b>France</b>	Fertility and Pregnancy Outcomes Following Uterine Devascularization for Postpartum Hemorrhage
198	<b>Shah</b> , Riaz	<b>India</b>	Production of Handmade Cloned Buffalo Embryos and Establishment of Pregnancies in Synchronized Recipients
199	<b>Sharma</b> , Manjeet	<b>India</b>	Sperm Protamine Levels As Indicators of Fertilising Potential in Sexually Mature Male Rats
200	<b>Shetty</b> , Shrimati	<b>India</b>	A Comprehensive Screening Analysis of Antiphospholipid Antibodies in Indian Women with Bad Obstetric History (BOH) and Recurrent Spontaneous Abortions (RSA)
201	<b>Shimada</b> , Masayuki	<b>Japan</b>	The Role of Toll-Like Receptor 2 and 4 Expressed on Cumulus Cells of Ovulated Cocs During Fertilization Process
202	<b>Sil</b> , Parames	<b>India</b>	Cadmium Induced Testicular Pathophysiology: Prophylactic Role of Taurine
203	<b>Silber</b> , Sherman	<b>USA</b>	A Series of Monozygotic Twins Discordant for Ovarian Failure: Ovary Transplantation (Cortical Versus Microvascular) and Cryopreservation
204	<b>Singh</b> , lallan	<b>India</b>	Seminal Plasma Non-Heparin Binding Prptein(NHBP)Reduce the Cryoinjury to Buffalo Cauda Epididymal Spermatozoa Induced By Heparin Binding Prptein(HBP)
205	<b>Soleimani</b> , Reza	<b>Belgium</b>	Back Muscle As a Promising Site for Ovarian Tissue Transplantation, An Animal Model
206	<b>Song</b> , Sun	<b>Korea</b>	Variations of Clonal Marrow Stem Cell Lines Established From Human Bone Marrow in Surface Epitopes, Differentiation Potential, Gene Expression and Cytokine Secretion
207	<b>Souza</b> , José	<b>Brazil</b>	Embryo Production and Quality of Holstein Heifers and Cows Supplemented with B-Carotene and Tocopherol
208	<b>St-Amand</b> , Jonny	<b>Canada</b>	Most Expressed Transcripts in Sexual Organs and Other Tissues.
209	<b>Streuli</b> , Isabelle	<b>Switzerland</b>	Serum Antimüllerian Hormone Levels Remain Stable Throughout the Menstrual Cycle and After Oral or Vaginal Administration of Synthetic Sex Steroids.
210	<b>Suleyman</b> , Halis	<b>Turkey</b>	Effects of Progesterone on FSH-Stimulated Indomethacin Ulcers in Rats
211	<b>Suzumori</b> , Kaoru	<b>Japan</b>	Meiotic Segregation Analysis in Male Translocation Carriers By Using Fluorescent in Situ Hybridization
212	<b>Taha</b> , Taha	<b>Egypt</b>	Reproductive Toxicologic Effects of Gossypol on Male Rabbits
213	<b>Takubo</b> , Keiyo	<b>Japan</b>	A Purification-Based Analysis of Murine Undifferentiated Spermatogonia
214	<b>Talebi</b> , Ali Reza	<b>Iran</b>	Effect of Varicocele on Chromatin Condensation and DNA Integrity of Ejaculated Spermatozoa Using Cytochemical Tests
215	<b>Tapisiz</b> , Omer	<b>Turkey</b>	Does Hysterectomy Affect Ovarian Function? Histopathologic Evaluation and Serum FSH, Inhibin A, and Inhibin B Levels in An Experimental Rat Model.
216	<b>Teng</b> , Gao-Jun	<b>China</b>	MR Tracking of Magnetically Labeled Mesenchymal Stem Cells in Rat Kidneys with Acute Renal Failure
217	<b>Thorn</b> , Petra	<b>Germany</b>	Semen Donors in German: a Study Exploring Motivations and Attitudes
218	<b>Toft</b> , Gunnar	<b>Denmark</b>	Menstrual Cycle Characteristics in European and Inuit Women Exposed to Persistent Organochlorine Pollutants
219	<b>Tokushige</b> , Natsuko	<b>Australia</b>	Effects of Hormonal Treatment on Nerve Fibers in Endometrium and Myometrium in Women with Endometriosis
220	<b>Uher</b> , Ferenc	<b>Hungary</b>	Mesenchymal Stem Cells Cooperate with Bone Marrow Cells in Therapy of Diabetes
221	<b>Uzumcu</b> , Mehmet	<b>USA</b>	Orthotopic Neonatal GFP Ovary Transplantation to Study Effects of Endocrine Disruptors in the Ovary



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222	<b>Van Casteren, Niels</b>	<b>Netherlands</b>	Semen Cryopreservation in Pubertal Boys Before Gonadotoxic Treatment and the Role of Endocrinological Evaluation in Predicting Sperm Yield
223	<b>Vassalle, Cristina</b>	<b>Italy</b>	Gender-Related Differences in Oxidative Stress Levels
224	<b>Veiga-Lopez, Almudena</b>	<b>Spain</b>	Features of Follicle-Stimulating Hormone-Stimulated Follicles in a Sheep Model: Keys to Elucidate Embryo Failure in Assisted Reproductive Technique Cycles
225	<b>Venetikou, Maria</b>	<b>Greece</b>	Hyperprolactinaemia Due to Hypothalamic–Pituitary Disease or Drug-Induced in Patients with Erectile Dysfunction
226	<b>Veras, Mariana</b>	<b>Brazil</b>	Particulate Urban Air Pollution Affects the Functional Morphology of Mouse Placenta
227	<b>Verma, Ramtej</b>	<b>India</b>	Curcumin Ameliorates Aflatoxin-Induced Toxicity in Mice Spermatozoa
228	<b>Vieira, Natassia</b>	<b>Brazil</b>	Sjl Dystrophic Mice Express a Significant Amount of Human Muscle Proteins Following Systemic Delivery of Human Adipose-Derived Stromal Cells Without Immunosuppression
229	<b>Vitullo, Alfredo</b>	<b>Argentina</b>	The Developing Human Ovary: Immunohistochemical Analysis of Germ Cell-Specific VASA Protein, BCL2/BAX Expression Balance and Apoptosis.
230	<b>Volgsten, Helena</b>	<b>Sweden</b>	Prevalence of Psychiatric Disorders in Infertile Women and Men Undergoing in Vitro Fertilization Treatment
231	<b>Vuong, Lan</b>	<b>Vietnam</b>	Progesterone Supplementation During Cryopreserved Embryo Transfer Cycles: Efficacy of Two Vaginal Formulations
232	<b>Wan, Qi</b>	<b>Canada</b>	Direct-Current Electrical Field Guides Neuronal Stem/Progenitor Cell Migration
233	<b>Wang, Hsei-Wei</b>	<b>Taiwan</b>	Stem Cells Genetic Network and Cell Dedifferentiation
234	<b>Wang, Run</b>	<b>USA</b>	Initial Experience with Robot-Assisted Varicocelectomy
235	<b>Weiss, Mark</b>	<b>USA</b>	Immune Properties of Human Umbilical Cord Wharton's Jelly-Derived Cells
236	<b>Whitaker, Brian</b>	<b>USA</b>	Mechanisms of Oxidative Stress in Porcine Oocytes and the Role of Anti-Oxidants
237	<b>Wiwanitkit, Viroj</b>	<b>Thailand</b>	Counteraction During Movement of Spermatozoa By Trichomonas Vaginalis Observed By Visual Image Analysis: a Possible Cause of Female Infertility
238	<b>Xiao, Zhicheng</b>	<b>Singapore</b>	Morphological and Functional Characterization of Predifferentiation of Myelinating Glia-Like Cells From Human Bone Marrow Stromal Cells Through Activation of F3/ Notch Signaling in Mouse Retina
239	<b>xiaoyu, Yang</b>	<b>China</b>	Effect of Oocyte Donors on Cloned Embryo Development
240	<b>Xu, Xiuqin</b>	<b>Singapore</b>	Chemically Defined Medium Supporting Differentiation of Human Embryonic Stem Cells to Cardiomyocytes
241	<b>Xu, Ren-He</b>	<b>USA</b>	Tgfb and Smads Talk to NANOG in Human Embryonic Stem Cells
242	<b>Yang, Zheng-Wei</b>	<b>China</b>	Effect of Vasectomy Via Inguinal Canal on Spermatogenesis in Rabbits
243	<b>Yang, Yuan</b>	<b>China</b>	Y Chromosome Haplogroups May Confer Susceptibility to Partial Azfc Deletions and Deletion Effect on Spermatogenesis Impairment
244	<b>Yang, Jehn-Hsiahn</b>	<b>Taiwan</b>	Office Hysteroscopic Early Lysis of Intrauterine Adhesion After Transcervical Resection of Multiple Apposing Submucous Myomas
245	<b>Yang, Ming yuan</b>	<b>USA</b>	The Capacity of Primordial Follicles in Fetal Bovine Ovaries to Initiate Growth in Vitro Develops During Mid-Gestation and Is Associated with Meiotic Arrest of Oocytes.
246	<b>Young, Fiona</b>	<b>Australia</b>	Effects of Blue-Green Algal Toxin Cylindrospermopsin (CYN) on Human Granulosa Cells in Vitro
247	<b>Yu, Hong</b>	<b>USA</b>	Statin and Stromal Cell Derived Factor-1 Additively Promote Angiogenesis By Enhancement of Progenitor Cells Incorporation Into New Vessels
248	<b>Zara, Vincenzo</b>	<b>Italy</b>	Oxygen Uptake By Mitochondria in Demembrated Human Spermatozoa: a Reliable Tool for the Evaluation of Sperm Respiratory Efficiency
249	<b>Zauli, Giorgio</b>	<b>Italy</b>	Assessment of Therapeutic Efficacy of TRAIL-Secreting Mesenchymal Stem Cells for Cancer Therapy
250	<b>Zayed, Faheem</b>	<b>Jordan</b>	A Male Phenotype (XY) Hermaphrodite Treated for Seminoma, Fathered a Healthy Child By IVF–ICSI Technique
251	<b>Zhang, Sizhong</b>	<b>China</b>	Massive Deletion in Azfb/B+C and Azoospermia with Sertoli Cell Only And/Or Maturation Arrest
252	<b>Zhang, Chengcheng</b>	<b>USA</b>	Insulin-Like Growth Factor-Binding Protein 2 Secreted By a Tumorigenic Cell Line Supports Ex Vivo Expansion of Mouse Hematopoietic Stem Cells.
253	<b>zolghadri, Jaleh</b>	<b>Iran</b>	The Relationship Between Abnormal GTT and History of Previous Recurrent Miscarriages, and Beneficial Effect of Metformin in These Patients; a Prospective Clinical Study.



## Nominees | Andrology

<b>Mohammad Reza Safarinejad</b>	Evidence Based Medicine on the Pharmacologic Management of Premature Ejaculation		Iran
<b>niels van Casteren</b>	Semen Cryopreservation in Pubertal Boys Before Gonadotoxic Treatment and the Role of Endocrinological Evaluation in Predicting Sperm Yield		Netherlands
<b>Paolo Chieffi</b>	PATZ1 Gene Has a Critical Role in the Spermatogenesis and Testicular Tumours		Italy
<b>Paolo Chieffi</b>	Detection of High Mobility Group Proteins A1 and A2 Represents a Valid Diagnostic Marker in Post-Puberal Testicular Germ Cell Tumors		Italy
<b>Sandeep Goel</b>	Multipotency of Cultured Germ Cells Isolated from Neonatal Pig Testis		Japan
<b>Jose Franco Jr</b>	Significance of Large Nuclear Vacuoles in Human Spermatozoa: Implications for ICSI		Brazil
<b>Hedi Claahsen-van der Grinten</b>	Testicular Adrenal Rest Tumours in Patients with Congenital Adrenal Hyperplasia Can Cause Severe Testicular Damage		Netherlands
<b>Silvia Garagna</b>	A Mitochondrial Mechanism Is Involved in Apoptosis of Spermatocytes that Escape Pachytene Arrest in Mouse Robertsonian Heterozygotes.		Italy
<b>Guruprasad Kalthur</b>	Effect of Cryopreservation on Sperm DNA Integrity in Patients with Teratospermia		India
<b>Tarek Khalifa</b>	Factors Affecting Chromatin Stability of Bovine Spermatozoa		Germany



## Nominees | Embryology

<b>Geetanjali Sachdeva</b>	Molecular Assessment of the Uterine Milieu during Implantation Window in Humans and Non-human Primates		India
<b>Eduardo Gastal</b>	Importance of the Mare as an Experimental Model for Study of Ovarian Function in Woman.		USA
<b>Navid Esfandiari</b>	Three-Dimensional Culture of Endometrial Explants; an In Vitro Model of Endometriosis		Canada
<b>Niels Van Casteren</b>	Semen Cryopreservation in Pubertal Boys Before Gonadotoxic Treatment and the Role of Endocrinological Evaluation in Predicting Sperm Yield		Netherlands
<b>Alfredo Vitullo</b>	The Developing Human Ovary: Immunohistochemical Analysis of Germ Cell-specific VASA Protein, BCL2/BAX Expression Balance and Apoptosis.		Argentina
<b>Jose Franco Jr</b>	Significance of Large Nuclear Vacuoles in Human Spermatozoa: Implications for ICSI		Brazil
<b>Guruprasad Kalthur</b>	Effect of Cryopreservation on Sperm DNA Integrity in Patients with Teratospermia		India
<b>yang xiaoyu</b>	Effect of Oocyte Donors on Cloned Embryo Development		China
<b>Mojdeh Salehnia</b>	In Vitro Maturation and Development of Isolated Follicles Derived From Vitrified and Non-Vitrified Ovarian Tissue		Iran
<b>Sanjay Bhojwani</b>	Adversely Affected Actin-Catenin-Cadherin System and Reduced Intercellular Contacts Hamper the Developmental Competence of Bovine Nuclear Transfer Embryos		Germany



## Nominees | Female Infertility

<b>Sherman Silber</b>	A Series of Monozygotic Twins Discordant for Ovarian Failure: Ovary Transplantation (Cortical Versus Microvascular) and Cryopreservation		USA
<b>Navid Esfandiari</b>	Effect of a Statin on Angiogenesis in an In Vitro Model of Endometriosis		Canada
<b>Shrimati Shetty</b>	A Comprehensive Screening Analysis of Antiphospholipid Antibodies in Indian Women with Bad Obstetric History (BOH) and Recurrent Spontaneous Abortions (RSA)		India
<b>Melinda Halasz</b>	What Harbours the Cradle of Life? The Progesterone-Dependent Immunomodulation		Hungary
<b>Sara Brucker</b>	Neovagina Creation in Vaginal Agenesis: Development of a New Laparoscopic Vecchiotti-based Procedure and Optimized Instruments in a Prospective Comparative Interventional Study in 101 Patients		Germany
<b>Mahroo Mirahmadian</b>	Association of Tumor Necrosis Factor-Alpha and Interleukin-10 Gene Polymorphisms in Iranian Patients with Pre-eclampsia		Iran
<b>Isabelle Streuli</b>	Serum Antimüllerian Hormone Levels Remain Stable Throughout the Menstrual Cycle and After Oral or Vaginal Administration of Synthetic Sex Steroids.		Switzerland
<b>Rong Li</b>	Local Injury to the Endometrium in Controlled Ovarian Hyperstimulation Cycles Improves Implantation Rates		China
<b>Eman Elgindy</b>	Anti-Müllerian Hormone: Correlation of Early Follicular, Ovulatory and Midluteal Levels with Ovarian Response and Cycle Outcome in Intracytoplasmic Sperm Injection Patients		Egypt
<b>Tansu Kucuk</b>	“Chromohysteroscopy” for evaluation of Endometrium in Recurrent In Vitro Fertilization Failure		Turkey



## Nominees | Reproductive Genetics

<b>Wai-sum OO</b>	Adrenomedullin in Male and Female Reproduction		China
<b>Paolo Chieffi</b>	PATZ1 Gene Has a Critical Role in the Spermatogenesis and Testicular Tumours		Italy
<b>Alfredo Vitulo</b>	The Developing Human Ovary: Immunohistochemical Analysis of Germ Cell-specific VASA Protein, BCL2/BAX Expression Balance and Apoptosis.		Argentina
<b>Hossein Mozdarani</b>	Reduction of Induced Transgenerational Genomic Instability in Gametes Using Vitamins E and C, Observed As Chromosomal Aneuploidy and Micronuclei in Preimplantation Embryos		Iran
<b>Silvia Garagna</b>	A Mitochondrial Mechanism Is Involved in Apoptosis of Spermatocytes That Escape Pachytene Arrest in Mouse Robertsonian Heterozygotes.		Italy
<b>Yuan Yang</b>	Y Chromosome Haplogroups May Confer Susceptibility to Partial AZFc Deletions and Deletion Effect on Spermatogenesis Impairment		China
<b>Kudumula Reddy</b>	Identification of Genes Regulated by an Interaction Between $\alpha v \beta 3$ Integrin and its Ligand Vitronectin in Murine Decidua		India
<b>Zi-Jian Lan</b>	0610009K11Rik, a Testis-specific and Germ Cell Nuclear Receptor-Interacting Protein		USA
<b>Fulvia Gloria-Bottini</b>	The Effect of Genetic and Seasonal Factors on Reproductive Success		Italy
<b>Dolores Ibarreta</b>	Provision and Quality Assurance of Preimplantation Genetic Diagnosis in Europe		Spain



# Nominees | Stem Cell Biology & Technology

<b>Nance Nardi</b>	In Search of the In Vivo Identity of Mesenchymal Stem Cells		Brazil
<b>Hong Yu</b>	Statin and Stromal Cell Derived Factor-1 Additively Promote Angiogenesis by Enhancement of Progenitor Cells Incorporation into New Vessels		USA
<b>Sjef Copray</b>	Differentiation of Neural Stem Cells into Oligodendrocytes: Involvement of the Polycomb Group Protein Ezh2.		Netherlands
<b>Yi Liu</b>	Dental Stem Cells-based Tissue Regeneration in a Large Animal Model		China
<b>Zhicheng Xiao</b>	Morphological and Functional Characterization of Predifferentiation of Myelinating Glia-like Cells from Human Bone Marrow Stromal Cells through Activation of F3/Notch Signaling in Mouse Retina		Singapore
<b>Giorgio Zauli</b>	Assessment of Therapeutic Efficacy of TRAIL-secreting Mesenchymal Stem Cells for Cancer Therapy		Italy
<b>Chie-Pein Chen</b>	Trafficking of Multipotent Mesenchymal Stromal Cells From Maternal Circulation Through the Placenta Involves VEGFR-1 and Integrins		Taiwan
<b>Yuichi Hori</b>	Enrichment of Putative Pancreatic Progenitor Cells from Mice by Sorting for Prominin1 (CD133) and PDGFR $\beta$		Japan
<b>Ren-He Xu</b>	TGF $\beta$ and SMADs Talk to NANOG in Human Embryonic Stem Cells		USA
<b>Tao-Sheng Li</b>	TGF-beta Induced Differentiation of Bone Marrow Stem Cells into Cardiomyocytes		Japan
<b>Seyed javad Mowla</b>	OCT4 Spliced Variants Are Differentially Expressed in Human Pluripotent and Nonpluripotent Cells		Iran
<b>Mohammad Golmohammadi</b>	Comparative Analysis of the Frequency and Distribution of Stem and Progenitor Cells in the Adult Mouse Brain		Iran



# International Winner



Andrology

## PATZ1 Gene Has a Critical Role in the Spermatogenesis and Testicular Tumours

**Paolo Chieffi, PhD**  
Italy



### **Objective:**

PATZ1 is a recently discovered zinc finger protein that, due to the presence of the POZ domain, acts as a transcriptional repressor affecting the basal activity of different promoters. To gain insights into its biological role, we generated mice lacking the PATZ1 gene. Male PATZ1<sup>-/-</sup> mice were infertile, suggesting a crucial role of this gene in spermatogenesis. Consistently, most of adult testes from these mice showed only few spermatocytes, associated with increased apoptosis, and complete absence of spermatids and spermatozoa, with the subsequent loss of tubular structure.

### **Material & Methods:**

The analysis of PATZ1 expression, by Northern blot, Western blot and immunohistochemistry, revealed its presence in Sertoli cells and, among the germ cells, exclusively in the spermatogonia.

### **Results:**

Since PATZ1 has been indicated as a potential tumour suppressor gene, we also looked at its expression in tumours deriving from testicular germ cells (TGCTs). Although expression of PATZ1 protein was increased in these tumours, it was delocalized in the cytoplasm, suggesting an impaired function.

### **Conclusion:**

These results indicate that PATZ1 plays a crucial role in normal male gametogenesis and that its up-regulation and mis-localization could be associated to the development of TGCTs.

### **Keywords:**

MAZR; ZSG; spermatogenesis; testicular cancer; tumour suppressor



# International Winner



Embryology



## Molecular Assessment of the Uterine Milieu during Implantation Window in Humans and Non-human Primates

**Geetanjali Sachdeva, MD**  
India

### *Objective:*

a) To identify the endometrial factors which are directly or indirectly regulated by progesterone in nonconception cycle and also to investigate whether their expression is modulated during early pregnancy in primates and b) To identify the factors which are differentially expressed in endometrial tissues and uterine secretions during the progesterone dominant or mid-secretory phase as compared to the estrogen dominant or proliferative phase in humans

### *Material & Methods:*

**Material and Methods:** For objective a, six regularly cycling healthy female bonnet monkeys (*Macaca radiata*) were subcutaneously injected with Onapristone- ZK 98.299, an antiprogestin, dissolved in vehicle (benzyl benzoate: castor oil, 9:1), at a dose of 5.0 mg starting from day 1 of the menstrual cycle and continued every third day for one cycle. Onapristone treatment rendered the animals infertile or implantation incompetent due to induction of endometrial nonreceptivity. Control animals (n=6) were treated with vehicle alone. Circulatory steroid levels were estimated in animals before and after the treatment using radioimmunoassays (Sachdeva et al, 2001; Patil et al, 2005). Endometrial biopsies were collected from both onapristone-treated and vehicle-treated animals on day 8 estradiol peak. Immunohistochemistry and reverse transcriptase polymerase chain reaction were used to investigate whether some of the select factors were differentially expressed after the blockade of optimal progesterone action on endometrium in bonnet monkeys. Differential display reverse transcriptase polymerase chain reaction (DDRT-PCR) and 2D proteomics approaches were also used to identify the factors which were differentially expressed in the endometrium of implantation incompetent bonnet monkeys, compared to vehicle treated control animals. To investigate whether the expression of some of these factors is altered during pregnancy, endometrial samples were collected from another group of animals on day 6 of pregnancy (approximately equivalent to day 8 post estradiol peak). Towards this, regularly cycling female bonnet monkeys (n=6) with normal hormonal profiles (peak estradiol levels- 300-600 pg/ml; progesterone levels (3-6 ng/ml) were mated with males of proven fertility for six continuous days starting from two days prior to the expected estradiol peak. Pre-implantation factor (PIF) in the sera was used as a surrogate marker of pregnancy (Rosario et al, 2005a). The control group included nine PIF negative animals. For objective b, regularly cycling women (21-35 years) of proven fertility with a history of at least one live birth were enrolled in the study. Ovulation was monitored by serial ultrasonography (USG) to ascertain the follicular collapse. Endometrial tissue and uterine fluid samples were collected from women on day 6 post-ovulation (in mid-secretory phase) or on day 2-3 prior to ovulation (in proliferative phase). 2D proteomics and immunoblot analysis were used to identify the factors, which were differentially expressed during the progesterone dominant phase as compared to the proliferative phase in human endometrial tissues and uterine fluid samples.

### *Results:*

**Results:** Candidate factor approach revealed differential expression of several cytokines such as interleukin 1 beta, interleukin 6, transforming growth factor beta, leukemia inhibitory factor (Sachdeva et al, 2001) and cell adhesion molecules like alpha v and beta 3 integrin (Puri et al, 2000) in the mid-secretory phase endometria of antiprogestin treated bonnet monkeys as compared to that of control animals. This suggested that progesterone directly or indirectly regulates the expression of these factors. Interestingly, expression of interleukin 6, transforming growth factor beta in endometrium was significantly higher in the endometria of pregnant animals, as compared to that in nonpregnant animals (Rosario et al, 2005b), whereas the expression of leukemia inhibitory factor did not alter significantly during early stages of pregnancy. Integrins alpha



v and beta 3 also showed cell type specific increase in endometrium during early stages of pregnancy (Nimbkar-Joshi et al, unpublished). These studies indicated that progesterone priming during nonconception cycle leads to increase in the expressions of endometrial TGF beta, LIF, interleukin 6, integrins and these factors probably facilitate endometrial preparation for implantation. Expressions of some of these factors are further modulated during early stages of pregnancy. Functional genomics approaches such as differential display RTPCR demonstrated up regulation of Rab Coupling Protein (RCP) in the endometria of antiprogesterone treated animals, as compared to control animals (Patil et al, 2005). Interestingly RCP is known to be involved in the intracellular trafficking of integrins. There was no concomitant increase in the expressions of Rab4 and Rab11- proteins known to interact with RCP, suggesting impairment in the expression of specific components of intracellular trafficking pathways. These studies suggested that the blockade of progesterone action in endometrium may alter intracellular trafficking and this in turn could be responsible for the altered distribution of cell surface molecules such as integrins on endometrium. This could be one of the reasons for the incompetence of endometrium for implantation in antiprogesterone treated animals. Further, 2D proteomics coupled with MALDI-TOF-TOF analysis revealed differential expression of two reticuloplasmic- endoplasmic reticulum resident proteins such as calreticulin and protein disulfide isomerase in bonnet monkeys rendered infertile with antiprogesterone. Interestingly, calreticulin was also found to be less abundant in the 2D endometrial tissue protein map of mid-secretory phase as compared to that of the proliferative phase in humans (Parmar et al, 2008a). This suggested that the expression of calreticulin is downregulated in endometrial tissues during progesterone dominant phase as compared to estrogen dominant phase, Interestingly, expressions of these two proteins were also increased in endometrium during very early stages of pregnancy. It may be mentioned here that endometrial estradiol receptor alpha, an estrogen regulated gene also showed increased expression during early stages of pregnancy (Rosario et al, 2008). This suggested that the expression of these proteins is positively regulated by estradiol in vivo. Our in vitro studies also suggested that estradiol positively regulates the expression of calreticulin whereas progesterone is somewhat inhibitory to the expression of calreticulin. In addition to calreticulin, ? chain of fibrinogen, adenylate kinase isoenzyme 5, transferrin, annexin V, alpha-1-antitrypsin (AAT), creatine kinase and peroxidoxin 6 were also found to be differentially expressed in endometrium during the progesterone dominant phase as compared to that in the estrogen dominant phase in humans. Further similar studies on uterine fluid samples revealed higher expression of AAT and apolipoproteins during the progesterone dominant phase or mid-secretory phase as compared to that in the proliferative phase of cycle in healthy fertile regularly cycling women (Parmar et al, 2008b).

**Conclusion:**

Conclusions: These studies collectively led to identification of several factors in endometrium, which are either positively or negatively regulated by progesterone. This knowledge will help in the construction of progesterone regulated functional networks, which can be targeted for contraception or for infertility management.

**Keywords:**

Endometrium, Progesterone, Receptivity, 2D Proteomics, Uterine Fluid



# International Winner



Reproductive Genetics



## Adrenomedullin in Male and Female Reproduction

**Wai-sum OO, MD**  
China

### **Objective:**

Adrenomedullin (ADM), originally isolated in human pheochromocytoma in 1993, is a pluripotent vasorelaxant and is later found to have antiapoptotic, anti-inflammatory and antioxidative functions. In reproduction, little is known about the physiological functions of this hormone. We conducted a project to study in rats the functions of ADM in the testis and ovary and reproductive tracts; its interaction with endothelin (EDN), steroids and changes of ADM in ageing.

### **Materials and Methods:**

The ADM levels and gene expression of Adm, calcitonin-receptor like receptor and receptor coupling proteins were studied in the male and female reproductive systems of Sprague-Dawley rats using radioimmunoassay, real-time PCR, gel filtration chromatograph, receptor binding assays and immunocytochemistry. The interaction of ADM with EDN and the effects of ADM on inhibin and testosterone were studied in Sertoli and Leydig cells isolated from the testis. The functions of ADM in folliculogenesis and luteogenesis were studied in isolated follicles at different stages of estrous cycle and corpus luteum in cycling and pregnant rats. The ADM levels and gene expression of ADM and receptor components were also studied in old male and female rats.

### **Results:**

In the male, immunocytochemical study showed positive ADM staining in both the Sertoli and Leydig cells. FSH and hCG were found to inhibit ADM gene expression and secretion in rat Leydig cells and Sertoli cells respectively. In both the Leydig and Sertoli cells, ADM reduced EDN production whereas its production was increased by EDN. In the ovary, ADM was localized in the granulosa, thecal cells of the follicle and corpora lutea of the ovary. In cycling rats, ADM inhibited FSH induced estradiol secretion in follicles and also suppressed eCG stimulated progesterone release in corpora lutea. ADM in the pregnant uterus increased during pregnancy, with higher values in the implantation sites than the inter-implantation sites. The gene expression of ADM receptor components was higher in the uterine inter-implantation sites during early pregnancy but higher in the implantation sites in late pregnancy. ADM and its mRNA levels in the testis increased with age, in stark contrast to the decrease of gene expression of ADM and its receptor components in the ovary. These parameters decreased with age in the male sex accessory glands and in the oviduct and the uterus.

### **Conclusion:**

Our results showed that ADM may play an inhibitory role in the regulation of hormone production from the gonads. ADM may also play a crucial role in early pregnancy to facilitate implantation and in mid- to late-pregnancy in maintaining pregnancy. The age-related increase in ADM expression in the testis may contribute to the decrease in testosterone production while the decrease of ADM in the ovary may be a compensatory response to the decrease in ovarian steroid production in old age. The decrease of ADM in the reproductive tracts may be related to the decrease in reproductive functions during ageing.

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## International Winner



Female Infertility

### A Series of Monozygotic Twins Discordant for Ovarian Failure: Ovary Transplantation (Cortical versus Microvascular) and Cryopreservation

**Sherman Silber, MD**  
USA



#### **Objective:**

A series of monozygotic (MZ) twin pairs discordant for premature ovarian failure (POF) presented an unusual opportunity to study ovarian transplantation.

#### **Material & Methods:**

Ten MZ twin pairs requested ovarian transplantation and eight have undergone transplantation with cryopreservation of spare tissue. Seven had a fresh cortical tissue transplant, one of whom received a second frozen-thawed transplant after the first ceased functioning at three years. One had a fresh microvascular transplant.

#### **Results:**

All recipients reinitiated ovulatory menstrual cycles and normal Day 3 serum FSH levels by 77 to 142 days. Six have already conceived naturally (one twice). Currently, two healthy babies have been delivered, and another three pregnancies are ongoing. The oldest transplant functioned for 36 months, resulting in one child and one miscarriage. She conceived again after a frozen-thawed secondary transplant. There was no apparent difference in return of ovarian function between the eight fresh cortical grafts and the one frozen graft.

#### **Conclusion:**

Ovarian transplantation appears to restore ovulatory function robustly. Successful pregnancies, including one after cryopreservation, bode well for application to fertility preservation.

#### **Keywords:**

cryopreservation fertility, menopause, monozygotic twins, ovary, transplantation



# International Winner



Female Infertility



## What Harbours The Cradle of Life? The Progesterone-Dependent Immunomodulation

**Melinda Halasz, MD**  
Hungary

### **Objective:**

The foeto-maternal relationship during pregnancy is controlled by a complex regulation of immuno-endocrine homeostasis where progesterone-dependent immunomodulation plays a key role. Due to stimulation by foetally derived antigens, lymphocytes of healthy, pregnant women express progesterone receptors and in the presence of progesterone produce a 34-kDa mediator protein, named the progesterone-induced blocking factor (PIBF). PIBF induces a Th2 dominant cytokine production via inhibiting STAT4 and activating STAT6, inhibits maternal NK activity which results in decreased cell-mediated response thus exerts an anti-abortive effect. Though PIBF does not directly bind to IL-4 receptor-alpha, our aim was to determine the role of IL-4Ralpha in PIBF signalling. Furthermore, we investigated the effects of PIBF on the protein kinase C (PKC)/ Ca<sup>++</sup> system which plays a key role in Th1/Th2 differentiation.

### **Material & Methods:**

Confocal microscopy was used to detect the localization of IL-4Ralpha and PIBF receptor (PIBFR). To verify the involvement of IL-4Ralpha in PIBF signalling, IL-4Ralpha was silenced by oligonucleotides interfering with IL-4Ralpha mRNA. Assuming that the PIBF receptor is a GPI-anchored protein, PIBF-induced phosphorylation of STAT6 was tested in phosphatidylinositol-specific phospholipase C (PI-PLC) digested cells by Western blotting. The hypothesis that PIBF receptors float in glycosphingolipid-cholesterol rafts was tested by depletion of cholesterol using methyl-β-cyclodextrin (MβCD). Proteins from PIBF-treated cells were reacted on Western blots with phospho-specific antibodies recognizing different PKC isoforms. Intracellular free calcium was measured by flow cytometry.

### **Results:**

Labelling of the IL-4Ralpha and simultaneous activation of the PIBF receptor with a FITC-labelled ligand revealed co-capping of the two binding sites. In IL-4Ralpha deficient cells the STAT6 activating effect of PIBF was markedly reduced. After PI-PLC treatment PIBF did not induce STAT6 phosphorylation while IL-4 retained the same effect. In MβCD treated cells neither PIBF, nor IL-4 were able to Tyr-phosphorylate STAT6, suggesting that not only the PIBFR but also the IL-4Ralpha is enriched in lipid rafts. Both IL-4 and PIBF induced PKC phosphorylation which was abrogated by anti-IL-4Ralpha or anti-PIBF IgG pre-treatment. PIBF treatment did not alter intracellular Ca<sup>++</sup>-levels. Inhibition of PKCzeta or PKCtheta phosphorylation, but not that of PKCalpha/beta resulted in the loss of STAT6 and JAK1 phosphorylation by PIBF.

### **Conclusion:**

Our findings suggest the existence of a novel type of IL-4R, composed of the alpha-chain of IL-4R and the PIBFR. The PIBFR is a GPI-anchored protein that lacks cytoplasmic tail thus it uses the intracellular domain of IL-4Ralpha for signalling. Upon ligand-binding, the PIBFR enriched in lipid rafts forms a complex with the IL-4Ralpha subunit and activates the JAK1/STAT6 pathway. PIBF phosphorylates PKC via binding to the IL-4R, without affecting intracellular Ca<sup>++</sup>. Phosphorylation of PKCzeta and PKCtheta is required for JAK1 and STAT6 activation, whereas PKCalpha/beta is not involved. These findings explain the mechanism by which PIBF supports a Th2 dominant cytokine pattern.

### **Keywords:**

progesterone, PIBF, PKC, STAT6, Th2



# International Winner



Stem Cell Biology &  
Technology

## Dental Stem Cells-based Tissue Regeneration In A Large Animal Model

Yi Liu, MD  
China



### Objective:

The dental tissues contain a variety of stem cells, including dental pulp stem cells (DPSCs), stem cells from human exfoliated deciduous teeth (SHED), periodontal ligament stem cells (PDLSCs), stem cells from the apical papilla (SCAP). These dental tissues-related stem cells possess high proliferation and differentiation capacities, and can be acquired easily from useless teeth, such as exfoliated deciduous teeth (SHED), extracted impacted third molars or orthodontic extracted teeth (DPSCs, PDLSCs and SCAP). The purpose of our studies is to perform oral and craniofacial tissue regeneration using these dental tissues-related mesenchymal stem cells at pre-clinical level in a large animal model (swine).

### Material & Methods:

Dental related stem cells were obtained from extracted teeth of the miniature pigs and then expanded ex vivo to enrich cell numbers. The characteristics and differentiation abilities of these stem cells were analyzed. Then, we utilized these stem cells to treat created periodontal lesions, to regenerate bioroots and to repair critical size bone defects in miniature pigs. (1) A typical periodontitis animal model was developed on miniature pig's first molar. PDLSCs were utilized to treat periodontal defect lesion and regenerate the new periodontal tissues. (2) Using a minipig model, autologous SCAP and PDLSCs were loaded onto HA/TCP and gelfoam scaffolds, respectively, and implanted into sockets of the lower jaw. Three months later, the bioroot was exposed, and a porcelain crown was inserted. (3) Autologous SHED were used to repair critical-size mandibular bone defects in minipig. (4) PDLSCs and bone marrow mesenchymal stem cells (BMMSC) were used to reconstruct orofacial tissues for changing orofacial appearance.

### Results:

Dental tissues related stem cells could be isolated successfully from miniature pig. A subset of these cells retained expression of early-stage markers of stem cells and had the abilities of single colon forming, high proliferation and differentiation. (1) PDLSCs appeared to have an excellent capacity to form bone, cementum, and periodontal ligament. The GFP-labeled cells were present in newly formed periodontal bones and had differentiated to osteoblasts, suggesting that transplanted PDLSCs had contributed to periodontal tissue regeneration in vivo, leading to a favorable treatment for periodontitis. (2) The structures of bioroot developed by SCAP and PDLSCs were still different from a natural root in a random manner. Nevertheless, the bioroot was encircled with periodontal ligament tissue and appears to have a natural relationship with the surrounding bone, and the mechanical strength of bioroot was about 70% of normal tooth root. Although there were many challenges, the approach was relatively a quick way of creating a root onto which an artificial crown could be installed. (3) SHED (SPDs) were capable of regenerating critical-size defects in the orofacial bone, and might potentially serve as an alternative stem-cell-based approach in the reconstruction of alveolar and orofacial bone defects. (4) BMMSCs could change the orofacial appearance by extending body bone tissues in minipig and subcutaneous transplantation of PDLSCs could form substantial amounts of collagen fibers and improve facial wrinkles in mouse.

### Conclusion:

These studies demonstrate dental tissues-related stem cells are hidden treasures and provide promising potential application for tissue engineering to oral and craniofacial plastic surgery and diseases therapy.

### Keywords:

Dental Relative Stem Cell, Craniofacial Disease, Therapy, Tissue engineering, Regeneration



## National Winner



Reproductive Genetics



### Reduction of Induced Transgenerational Genomic Instability in Gametes Using Vitamins E and C, Observed as Chromosomal Aneuploidy and Micronuclei in Preimplantation Embryos

**Hossein Mozdarani, PhD**  
Iran

#### **Objective:**

Mutational events may be an indirect effect on genome stability which is transmitted through the germ line of chemically or physically exposed parents to their offspring. The consequences of germ cell mutations in subsequent generations include genetically determined phenotypic alterations without signs of illness, or reduction in fertility, or embryonic or prenatal death, more or less severe congenital malformations, or genetic diseases with various degrees of health impairment. In this study, the effect of induction of DNA damage during spermatogenesis cycle and preovulatory stage oocyte on the frequency of chromosomal abnormalities and micronuclei formation in preimplantation embryos generated by damaged sperm or oocyte after exposure to gamma rays in the presence or absence of vitamins E and C is investigated.

#### **Material & Methods:**

DNA damage was induced in male NMRI mice using gamma-rays, and then mated with non irradiated super-ovulated female mice in 6 successive weeks after irradiation in a weekly interval. In experiments involving irradiation of both male and female mice, irradiated male mice for 6 weeks post-irradiation were mated with female mice irradiated after induction of super-ovulation. To study the effects of vitamins E and C on the radiation induced DNA damage and consequently in the chromosomal abnormalities generated in preimplantation embryos, vitamin E at a concentration of 200 mg/kg and vitamin E at 100 mg/kg was administered to mice interaperitoneally 1 hour before exposing to radiation. Standard methods were used to prepare slides from pre-embryos for chromosome and micronuclei study.

#### **Results:**

The rate of both aneuploidy and MN observed in embryos generated from irradiated male compared to control group dramatically increased ( $P < 0.01$ ). Frequency of aneuploidy and MN in embryos generated by mating both male and female irradiated mice was higher than that observed for those embryos generated by irradiated male mice alone. Cells at early spermatogenic cycle were more sensitive to radiation and led to higher frequency of aneuploidy and micronuclei in preimplantation embryos. Exposure of male and female animals to gamma irradiation in the presence of vitamins E and C led to a considerable reduction in both chromosomal aneuploidy and micronuclei in generated preimplantation embryos by irradiated parents. Reducing factor for vitamin E was found about 2 and for vitamin C about 3. Also a direct correlation between aneuploidy and micronuclei formation was observed.

#### **Conclusion:**

Results indicate that induction of DNA damage in gonads during spermatogenesis and pre-ovulatory stage oocytes may lead to unstable chromosomal aberrations and probably stable chromosomal abnormalities affecting pairing and disjunction of chromosomes in successive pre-implantation embryos expressed as aneuploidy and micronuclei. These types of chromosomal alterations may lead to impaired embryonic and fetal developments. Administration of vitamins E and C before irradiation effectively reduced the frequency of chromosomal abnormalities. The way these vitamins reduces genotoxic effects of radiation might be via radical scavenging mechanism or antioxidative effects. Higher dose reduction factor observed for embryos generated after vitamin C treatment might be due to water soluble nature of this vitamin or its direct involvement in DNA repair. This observation might have a great impact for cancer patients under radiotherapy, occupationally exposed individuals to physical and chemical DNA damage inducing agents and residents of high natural background radiation area who experience impaired gametogenesis and fertility.

#### **Keywords:**

Spermatogenesis, pre-ovulatory oocyte, chromosomal abnormalities, pre-implantation embryo, vitamins E and C



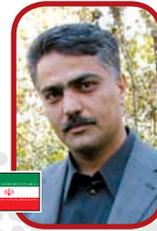
## National Winner



Stem Cell Biology & Technology

### OCT4 Spliced Variants Are Differentially Expressed in Human Pluripotent and Nonpluripotent Cells

Seyed javad Mowla, PhD  
Iran



**Objective:**

OCT4 is a master regulator of self-renewal in embryonic stem cells and can potentially encode two spliced variants, designated OCT4A and OCT4B.

**Material & Methods:**

We have examined the expression pattern of these OCT4 isoforms in various human pluripotent and nonpluripotent cells.

**Results:**

Our data revealed that whereas OCT4A expression is restricted to embryonic stem (ES) and embryonal carcinoma (EC) cells, OCT4B can be detected in various nonpluripotent cell types. Furthermore, we detected a novel OCT4 spliced variant, designated OCT4B1, that is expressed primarily in human ES and EC cells and is downregulated following their differentiation. We also found a significantly higher level of OCT4B1 expression in stage-specific embryonic antigen-3 (SSEA3)(+) compared with SSEA3(+) subpopulations of cultured ES cells.

**Conclusion:**

Taken together, our data demonstrated a distinctive expression pattern for OCT4 spliced variants in different cell types and highlight the necessity of defining the type of OCT4 when addressing the expression of this gene in different human cells.

**Keywords:**

OCT4, Embryonic stem cells, Cancer, Spliced variants, OCT4B1



## National Winner



Andrology



### Evidence based medicine on the pharmacologic management of premature ejaculation

**Mohammad Reza Safarinejad, PhD**

Iran

#### **Objective:**

Purpose: To evaluate the efficacy and safety of most popular selective serotonin reuptake inhibitors (SSRIs) drug (citalopram, escitalopram, dapoxetine, paroxetine, venlafaxine), and tramadol and pindolol in delaying ejaculation in patients with premature ejaculation (PE).

#### **Material & Methods:**

A predetermined number of married men with PE were randomly assigned to receive the study drug or placebo. Pretreatment evaluation included history and physical examination, intravaginal ejaculatory latency time (IELT), International Index of Erectile Function (IIEF) and Meares-Stamey test. The efficacy of each treatment was assessed every 2 weeks during treatment, at the end of study using responses to IIEF, IELT evaluation, mean intercourse satisfaction domain, mean weekly coitus episodes and adverse drug effects.

#### **Results:**

The IELT after citalopram and placebo gradually increased from 32 and 28 seconds to approximately 268 and 38 seconds, respectively. The mean IELT after dapoxetine and placebo increased from 28 and 31 seconds to approximately 193 and 54 seconds, respectively ( $P=0.001$ ). At the end of trial with dapoxetine, paroxetine, and placebo the mean IELT was increased from 38, 31 and 34 seconds to 179, 370 and 55 seconds, respectively. The mean IELT increased from 31 and 29 seconds to 516 and 54 seconds with escitalopram and placebo, respectively ( $P=0.001$ ). The geometric mean IELT in paroxetine-pindolol and paroxetine-placebo group demonstrated 3.7 (95% confidence interval (CI): 2.16-5.26) and 1.7 (95% CI: 0.82-1.81) fold-increase, respectively ( $P=0.001$ ). The mean IELT after tramadol and placebo increased from 19 and 21 seconds to approximately 243 and 34 seconds, respectively ( $P<0.001$ ). The geometric mean IELT in venlafaxine and placebo group demonstrated 1.7 (95% CI: 0.76-1.96) and 1.6 (95% CI: 0.87-1.84) fold-increase, respectively ( $P=0.1$ ).

#### **Conclusion:**

Oral citalopram and escitalopram is a highly effective treatment for PE with long-term benefit for the patient after it is withdrawn. Paroxetine appears to provide significantly better results in terms of IELT and intercourse satisfaction versus dapoxetine, and tramadol. Venlafaxine is no better than placebo in treatment of PE. A single high dose of pindolol (7.5 mg) is an effective augmentation strategy in paroxetine-refractory patients.

#### **Keywords:**

premature ejaculation; treatment; SSRI; serotonin; sexual dysfunction



# Board | Juries

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**Kalantar, PhD**



Iran



**Kamali k., PhD**



Iran



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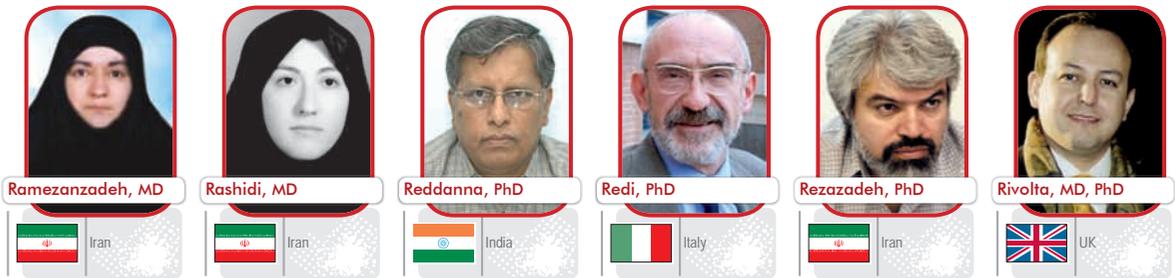
USA



**Nielsen, PhD**



Denmark





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# Annual Report |



Royan Institute was established in 1991 as a non-governmental, non-profit center for the treatment of infertility by the late Dr Saeid Kazemi Ashtiani. High level research in the areas of Reproductive Biomedicine, Stem Cell and Cloning were soon started which made Royan Institute a prominent research institute, not only in Iran but also in the region. Now, Royan Institutes for Reproductive Biomedicine, Animal Biotechnology, and Stem Cell Biology and Technology are working together with the vision of improving human health through discovery in the fields of reproduction, stem cell, regenerative medicine and animal biotechnology.

- **Royan Institute for Reproductive Biomedicine** consists of the Departments of Gynecology and Endocrinology, Andrology, Reproductive Imaging, Epidemiology and Reproductive Health, Reproductive Genetics, Embryology and the Infertility Clinic.
- **Royan Institute for Animal Biotechnology** consists of the Departments of Reproduction and Development, Molecular Biotechnology, Cell and Molecular Biology and the Dairy Assisted Center.
- **Royan Institute for Stem Cell Biology and Technology** consists of the Departments of Stem Cell and Developmental Biology, Molecular Systems Biology, Regenerative Medicine and Cell Therapy Center.



### Goals

1. Increasing the success rate of infertility treatments alongside embryo health.
2. Putting stem cell research findings into operation in cell therapy and disease treatment to increase the level of health
3. Knowledge transfer by short and long (M.Sc. & Ph.D.) educational courses.
4. Establishing national and international scientific collaboration to improve the research programs.

### Chronological Overview of the Institute's Developments

- The first IVF child born in Tehran (1993)
- The first ICSI child born in Tehran (1995)
- Iran's second success in open testicular biopsy to treat severe male infertility (1996)
- The first frozen embryo child born in Iran (1996)
- The first ICSI birth by frozen sperm of a gonadectomized man in Iran (1999)
- The first human embryonic Stem Cell line established in Iran and the region (2003)
- The first PGD child born in Iran (2004)
- The first time use of Adult Stem Cells in the treatment of MI during CABG in Iran (2004)
- Production of insulin producing cells from Human Embryonic Stem Cells (2004)
- Culture of Human Limbal Stem Cells on Chorionic Membrane (2004)
- Establishment of the first Private Cord Blood Bank in Iran (2005)
- The first IVM-IVF sheep born in Iran (2006)
- The first cloned sheep born in Iran (2006)
- Establishment of mouse and human induced Pluripotent Stem Cells (iPS) (2008)
- The first cloned goat born in Iran (2009)
- The first cloned calf born in Iran (2009)

## ROYAN Institute for Reproductive Biomedicine | (RI-RB)

**RI-RB**, founded in 1991, consists of six active departments working on different aspects of infertility and development of new methods for infertility treatment.

The vision of the institute is to improve the human health through infertility treatment and giving the hope of having children to infertile families.

In this regard, the Institute undertakes research on different aspects of infertility and its treatment in order to increase the success rate of infertility treatment alongside improving embryo health.

### Department of Gynecology and Endocrinology

Established in 1995, the Department of Gynecology and Endocrinology began to research new strategies and advanced methods of Assisted Reproductive Technique (ART).

Research in this department focuses on the following areas:

- Endocrinology research
- Endometriosis
- Recurrent abortion
- Female reproductive surgery including endoscopic surgery, laparoscopy and hysteroscopy
- Ovarian research
- Assisted reproductive techniques (ARTs)
- IVF and implantation failure
- In vitro maturation (IVM)
- Prenatology
- Genital tuberculosis
- Hypothalamic amenorrhea

**Staff of the Department:**

Head of department:

- Mahnaz Ashrafi, MD

Members:

- |                                     |                            |
|-------------------------------------|----------------------------|
| • Tahereh Madani, MD                | • Ashraf Moini, MD         |
| • Ensieh Shahrokh Tehrani Nejad, MD | • Firouzeh Ghaffari, MD    |
| • Marzieh Shiva, MD                 | • Maryam Hafezi, MD        |
| • Mitra Frootan, MD                 | • Fariba Ramezani, MD      |
| • Leila Karimian, MSc               | • Elham Amirchaghmaghi, MD |
| • Kiandokht Kiani, MSc              | • Nadia Jahangiri, MSc     |
| • Masoomeh Joodmardi, BSc           | • Maryam Keshvarian        |

**Ongoing projects:**

1. Determination of Risk factors of ovarian hyper stimulation syndrome and pregnancy outcome in non-PCOS women
2. Numbers of embryos transferred and pregnancy outcomes and multiple birth rates
3. Comparison of 5 day embryo transfer with 2-3 day transfer in patients who failed to conceive in two or more day 2-3 embryo transfer cycle in Royan Institute
4. Seasonal variation and pregnancy outcomes in women undergoing ICSI outcomes
5. A randomized, comparative study of Iranian made Buserelin Ampoule with its German made version for hypophyseal desensitization in IVF/ICSI cycles
6. Comparison of pregnancy outcome following cryopreserved and fresh embryo transfer in ART cycles
7. Comparison of transvaginal sonography with hysteroscopy findings in patients undergoing in vitro fertilization or intra cytoplasmic sperm injection who repeatedly cannot conceive
8. Effect of cervical mucus aspiration during embryo transfer on pregnancy outcome
9. Prenatal outcomes of spontaneous twins compared with twins conceived through artificial reproductive technology (ART)
10. Incidence of ectopic pregnancy after assisted reproduction treatment versus spontaneous pregnancy between 2008 and 2009
11. Assessment of the prevalence of recurrent miscarriage at Royan Institute
12. Outcome of patients with hysteroscopic septum resection between 2004-2008
13. Comparison of infertility treatment outcome of female genital tuberculosis and other tubal factors in Royan infertility center between 2008 and 2009
14. Comparison of metabolic and endocrine effects of metformine and acarbose between thin and obese women with PCOs
15. Comparison of 17- $\alpha$  Hydroxy progesterone caprovat and cyclogest in ART patients
16. The risk factors of patients with endometriosis at Royan institute.
17. The determination of sensitivity and specificity of hysterosonography, sonography and hysteroscopy for uterine abnormalities in IVF failures or patients with missed carriage.
18. Power Doppler ultrasound assessment of per follicular blood flow on outcome of in vitro fertilization cycle
19. Comparison of Micro dose GnRH agonist flare up & flare up protocols in poor responders in ART cycle
20. Comparison of clinical outcome of ART with daily triptorelin and reduced-daily Busereline in a standard long protocol in polycystic ovarian syndrome: a randomized clinical trial



21. The outcome of in vitro fertilization / intracytoplasmic sperm injection in endometriosis-associated and tubal factor infertility
22. Sensitivity and Specificity & PPV of vaginal sonography in diagnosis of endometrial polyp.
23. The effect of Flutamid on ovulation induction in PCOs patients
24. The effect of loratadine for prevention of OHSS
25. In vitro maturation of oocytes in PCOs and poor responder patients
26. Comparison of post partum depression between spontaneous and pregnancies conceived through ARTs
27. The evaluation of knowledge, attitude, and practice of mother and newborn care providers about post partum depression
28. Comparison of public health, depression, anxiety and satisfaction among parents with single, twin or triplet pregnancies with IVF procedure



#### Completed projects:

1. The effect of adding Estradiol during luteal phase on pregnancy outcome in IVF/ICSI cycles.
2. The effect of low dose HCG on folliculogenesis of PCO patients undergoing ART cycles.
3. Impact of endometrioma on ovarian stimulation outcomes during Intra Cytoplasmic Sperm Injection (ICSI) cycles.
4. A randomized, comparative study of Iranian made Progesterone suppository with its German made version for luteal phase support in IUI cycles.
5. To determine the frequency distribution of pregnancy occurrence in infertile women after the diagnostic-surgical hysteroscopy on selected infertile cases including those with abnormal uterine.

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7. Moini A, Emadi allahyari R, Eslami G. **Episiotomy and third- and fourth degree perineal tears in primiparous Iranian women. A brief communication.** International journal of gynecology and obstetrics. 2008; 2(2): 96-100
  8. Moini A, Amirchaghmaghi E, Javidfar N, Tehraninejad E Sh., Sadeghi M, Khafri S. **The effect of body mass index on the outcome of IVF/ICSI cycles.** IJFS. 2008; 2(2): 82-85
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  10. Moini A, Salehizadeh S, Moosavi F, Kiandokht K, Khafri S. **Discontinuation Decision in Assisted Reproductive Technique Treatment.** IJFS. 2009; 2(4): 173-78
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  12. Tehraninejad Ensieh, Fazel Azadeh, Samiei Arash, Rashidi Batool, Kiani Kiandokht. **Flexible and Multi-dose GnRH Antagonist versus Long GnRH Agonist Protocols in Poor Responders: A Randomized Controlled Trial.** IJFS. 2009; 2(4): 169-172
  13. Madani T, Ashrafi M, Bahman Abadi A, Kiani K. **Measurement of Uterine Cavity Length on Proper Time has a Positive Impact on the ART Cycle Outcome.** Reproductive biomedicine online (RBM Online), in press

### Department of Andrology

Since its establishment in 1995, the Andrology Department has been working on male infertility and relevant states such as sperm morphology, motility, function and other sperm disorders.

At present, this department has the following interests and is ready to do multi-centric research in the following areas:

1. Sperm disorders and associated infertility
2. Etiology and treatment of azoospermia and impotency
3. Etiology of dry ejaculation and retrograde ejaculation
4. Germ cell transplantation
5. Biochemistry of semen

#### Staff of the Department:



Head of department:

- Mohammad Ali Sedighi Gilani, MD

Members:

- Seyed Jalil Hoseini, MD
- Farid Dadkhah, MD
- Reza Salman Yazdi, MD
- Mohammad Azizi, MD
- Firooz Janat Alipour, MSc
- Faramarz Farahi, MD
- Morteza Zarabi, MD
- Homayoon Abasi, MD
- Ali Daliri, MD
- Marjan Sabaghian, PhD



**Ongoing projects:**

1. Effect of 830nm diode laser irradiation on human sperm motility.
2. DNA fragmentation and nuclear chromatin condensation in surgical repaired undescended testis patient comparing with normal
3. Studying prevalence intratubular germ cell neoplasia of the unclassified type in biopsies obtained from infertile couples referred to Royan institute in 2007-2008.
4. Comparison of culture with PCR for detection of mycoplasma hominis and ureaplasma urealyticum in infertile men referring to the Royan institute in 2008.
5. Studying prevalence of testicular microlithiasis and its relation with carcinoma insitu and malignancy in azoospermic males referred to Royan institute in 2007-2008.

**Completed Projects:**

1. Effect of clomiphene ci on semen parameters and pregnancy after varicocelectomy
2. Effect of oral clonidin adranes spermatogenesis in azoospermic patient with spermatogenetic maturation arrest
3. Evaluation of varicocele frequency in adolescents in city of Isfahan
4. Evaluation of karyotype anomalies and Y chromosome micro deletion in father candidate for ICSI and boys born by ICSI.
5. The effect of varicocelectomy on semen parameter and protami-deficiency at 3 and 6 months post surgery.

**Articles:**

1. Kariminejad A, Bozorgmehr B, Sedighi Gilani MA, Almadani N, Kariminejad MH. Clinical variability in acro-cardio-facial-syndrome. Am J Med Genet A. 2008; 146(15):1977-1979
2. Najar Peerayeh Sh, Salmanyazdi R, Zeighami H, Razeghi M. Ureaplasma urealyticum in semen of men with varicocele. LabMedicine 2008
3. Najar Peerayeh Sh, Salmanyazdi R, Zeighami H. Association of ureaplasma urealyticum infection with varicocele-related infertility. J Infect Developing Countries 2008; 2(2): 116-119



**Department of Reproductive Imaging**

The Reproductive Imaging Department was established in 2008 to focus on infertility assessment as well as pregnancy evaluation by utilizing imaging procedures in both clinical and research fields.

Research activities in this department are in the following categories:

1. Prenatal ultrasonographic screening of fetal anomalies
2. Power Doppler ultrasound assessment of follicular vascularity in poor ovarian response and its relationship with outcome of in vitro fertilization
3. Study of congenital uterine abnormalities using 3D/4D ultrasonography and sonohysterography
4. Endometrial and subendometrial blood flows measured by Power Doppler ultrasound in the prediction of pregnancy during IVF treatment
5. Diagnostic and interventional imaging in male infertility
6. Sonohysterography for evaluation of endometrial cavity and tubal patency

**Staff of the Department:**

Heade of Department:

- Firoozeh Ahmadi, MD

Members:

- Ahmad Vosough, MD
- Maryam Niknejadi, MD
- Fatemeh Zafarani, MSc

**Ongoing projects:**

1. Power Doppler ultrasound assessment of perfollicular blood flow on outcome of in vitro fertilization.
2. The effect of vaginal sildenafil on the outcome of IVF/ICSI cycles in patients with repeated IVF/ICSI failures.
3. Ultrasonographic screening of major structural anomalies in first and second trimester of infertile patients.
4. Comparison of transvaginal sonography with hysteroscopy findings in patients undergoing in vitro fertilization or intra cytoplasmic sperm injection who repeatedly cannot conceive.
5. The determination of sensitivity and specificity of hysterosonography, sonography and hysteroscopy for uterine abnormalities in IVF failures or patients with missedcarriage.

**Completed Projects:**

1. The determination of sensitivity and specificity of hysterosonography, sonography and hysteroscopy for uterine abnormalities in IVF failures or patients with missed carriage.
2. Ultrasonographic screening of major structural anomalies in first and second trimester of infertile patients.

**Articles:**

1. Ahmadi F, Zafarani F, Niknejadi M, Vosough V. **Uterine Leiomyoma: Hysterosalpingographic Appearances.** Int J Fertil Steril, 2008; 1(4): 137-144
2. Maryam Nik Nejadi, M.D., Fatemeh Zafarani B.S.c , Firoozeh Ahmadi M.D, Zohreh Rashidi B.S.c. **Arnold-Chiari Type II malformation: A case report and review of prenatal sonographic findings.** Iranian Journal of Fertility & Sterility, 2008; 1(4):179-182
3. Maryam Niknejadi M.D,Shohreh Irani B.Sc, Firoozeh Ahmadi M.D. **Holoprosencephaly: A Case Report and Review of Prenatal Sonographic Findings.** Int J Fertil Steril, 2008 ;2(1): 39-42

**Department of Epidemiology and Reproductive Health**

The Epidemiology and Reproductive Health Department was established in 2000 with the aim of promoting reproductive health by doing epidemiological research in the field of reproduction. This department has the duty of checking all research proposals in three institutes and gives both methodology and statistical consultation. This department does multicentric research between Iran and other countries in the following areas:

1. Frequency, incidence and influencing factors in any type of subfertility and infertility.
2. Environmental and occupational factors affecting fertility and reproduction.
3. Psychosocial issues affecting infertile couples and their treatment and their coping mechanisms.
4. Experience, quality of life, marital and sexual satisfaction of infertile couples even after IVF failure.
5. Ethical issues in assisted reproduction, legislation and guidelines.
6. Statistical models and methods for research in reproduction, genetics and cellular and molecular fields.
7. Animal ethics.



### Staff of the Department:



Head of department:

- Babak Eshrati, PhD

Members:

- |                                     |                                  |
|-------------------------------------|----------------------------------|
| • Shahrzad Alizadegan, MD           | • Reza Omani Samani, MD          |
| • Mohamamad Kamali, PhD             | • Seied Taha Merghati, PhD       |
| • Soraia khafri, PhD                | • Hassan Shahrestani, PhD        |
| • Mohammad Reza Akhond, PhD         | • Gholamreza Khalili, PhD        |
| • Mohammad Reza Rezania Moalem, PhD | • Narges Bagheri lankarani, PhD  |
| • Fahimeh Kashfi, MSc               | • Hossein Parchebaf Kashani, MSc |
| • Zahra Ezabadi, MSc                | • Farideh Malekzadeh, MSc        |
| • Mostafa Mozafari, MSc             | • Fatemeh Shabani, MSc           |
| • Elaheh Erami, MSc                 | • Laila Alizadeh, BSc            |
| • Saide Sazvar, BSc                 |                                  |

### Ongoing & Completed Projects:

1. Attitude of infertile couples toward their embryos' fate.
2. Fetumaternal attachment and infertility.
3. HIV positive patients' attitude toward reproduction.
4. Preparing a complete guideline on oocyte donation.
5. Attitude of pregnant women toward cord blood bank.
6. Attitude of infertile couples toward donation programmes.

### Articles:

1. Merghati S.T, Omani Samani R. **Islamic ideas about sexual relations**. RBM online, 2008
2. Omani Samani R, Ashrafi M, Alizadeh L, Mozafari M. **Posthumous Assisted Reproduction from Islamic Perspective**. IJFS, 2008
3. Omani Samani R, Rezania Moalem M.R, Merghati S.T, Alizadeh L. **Debate in embryo donation: embryo donation or both-gamete donation**. RBM online, 2009

### Department of Reproductive Genetics

Since its establishment in 2001, the Reproductive Genetics Department in clinical part is performs Genetic Counseling, Preimplantation Genetic Diagnosis (PGD) and Lymphocyte Karyotyping as routine laboratory tests. In collaboration with stem cell department, this department is also involved in cytogenetic and genetic studies of embryonic, adult and cord blood stem cells.

Major research interests in this department are:

1. Assessment of the genetic causes of infertility and Recurrent Spontaneous Abortion (RSA)
2. Cytogenetic evaluation of oocyte, Sperm and embryo
3. Cytogenetic effects of embryo freezing
4. Factors influencing spermatogenesis
5. Mutations lead to congenital agenesis of vasodefran
6. Pharmacogenetics

**Royan DNA bank** was established in 2005 for gathering DNA samples of infertile patients and also patients with spontaneous and recurrent abortions.



### Staff of the Department:



Head of department:  
Hamid Gourabi, PhD

#### Members:

- Abolhasan Shahzadeh Fazeli, PhD
- Maryam Shahhoseini, PhD
- Mehdi Totonchi, PhD
- Amir Amiri Yekta, MSc
- Hani Hoseinifar, MSc
- Zahra Mansouri, MSc
- Najme Sadat Masoudi, MSc
- Nayere Fatemi, MSc
- Anahita Mohseni Meybodi, PhD
- Navid Almadani, PhD
- Roghie Habibi, MSc
- H. Vaziri nasab, MSc
- Shabnam Zari Moradi, MSc
- Khadije Anisi, MSc
- Prnaz Borjian, MSc
- Pegah Mokhtari, MSc

#### *Ongoing projects:*

1. Preimplantation genetic diagnosis for single gene disorders.
2. Study on effects of chemical therapy agents on oocytes and protecting agents.
3. Genetic effect of ovarian stimulation protocols on patient.
4. The genetic study of newborns conceived by ART
5. Proteomic study of sperm.
6. Epigenetic studies of oocyte, sperm and embryo.
7. Cytogenetic and genetic factors related to recurrent and spontaneous abortion.
8. Pharmacogenetics studies related to infertility treatments.





*Completed projects:*

1. Mutation analysis of CFTR gene in patients with congenital bilateral absence of vasdeferens (CBAVD).
2. Using uncultured amniotic fluid cells for prenatal diagnosis.
3. Evaluation of discontinuous pure sperm gradients in separation of X and Y bearing sperms.
4. The karyotype study and Y chromosome microdeletion in candidate fathers and sons born after ICSI.
5. The preimplantation genetic diagnosis by full karyotyping in mice exposed to Cyclophosphamide chemotherapy agent.
6. In vitro effects of low-intensity ultrasound on the growth, proliferation and differentiation of rat bone-marrow derived mesenchymal stem cell into osteoblast.
7. The preimplantation genetic diagnosis by full karyotyping in mice exposed to Cyclophosphamide chemotherapy agent

*Articles:*

1. Kazemi Ashtiani S, Nasr-Esfahani M.H, Hosseini S.M, Moulavi F, Hajian M, Frouzanfar M, Abedi P, Meamar M, Rezazadeh Valojerdi M, Gourabi H, Shahverdi A.H, Baharvand H, Vosough Dizaj A, Imani H, Eftekhari-Yazdi P, Vojgani M, Safahani M, Radpour R, Salahshouri I. **Royana: Successful Experience in Cloning the Sheep.** *Yakhteh Medical Journal* 2008,10(39): 193-200
2. Barekati Z, Gourabi H, Rezazadeh Valojerdi M, Eftekhari Yazdi P. **Previous maternal chemotherapy by cyclophosphamide (Cp) causes numerical chromosome abnormalities in preimplantation mouse embryos.** *Reproductive Toxi* 2008; 278-281
3. Salamian A, Ghaedi K, Razavi Sh, Tavalae M, Tanhaei S, Tavalae M, Salahshouri I, Gourabi H, Nasr-Esfahani H. M. **Single Nucleotide Polymorphism Analysis of Protamine Genes in Infertile Men.** *IJFS* 2008 ; 2 (1): 13-18
4. Gourabi H, Ashrafi M, Karimi H. **Accuracy Assessment of Interphase Fluorescence In-Situ Hybridization on Uncultured Amniotic Fluid Cells.** *IJFS* 2008; 2 (1): 29-34
5. Mozdarani H, Mohseni Meybodi A, Zari-Moradi Sh. **A cytogenetic study of couples with recurrent spontaneous abortions and infertile patients with recurrent IVF/ICSI failure.** *Indian Journal of Human Genetics* 2008; 1-6
6. Koruji M, Movahedin M, Mowla SJ, Gourabi H, Jabbari Arfae A. **The morphological changes of adult mouse testes after 60Co  $\gamma$ -Raduaction.** *Iranian Biomedical Journal* 2008; 12(1): 35-42
7. Salahshorifar I, Shahrokhshahi N, Tavakolzadeh T, Beheshti Z, Gourabi H. **Complex chromosomal rearrangement involving chromosomes 1, 4 and 22 in an infertile male: case report and literature review.** *J Appl Genet* 2009; 50(1): 69-72
8. Salahshorifar I, Masodi N, Gourabi H. **Cytogenetic findings in couples who are candidates for assisted reproductive techniques.** *Yakhteh Medical Journal* 2009; 10(4): 288-294
9. Tamaddoni A, Hadavi V, Nejad NH, Khosh-Ain A, Siami R, Aghai-Meibodi J, Almadani N, Oberkanins C, Law HY, Najmabadi H. **alpha-Thalassemia mutation analyses in Mazandaran province, North Iran.** *Hemoglobin.* 2009; 33(2):115-23
10. Koruji M, Movahedin M, Mowla S.J, Gourabi H, Arfae A.J. **Efficiency of adult mouse spermatogonial stem cell colony formation under several culture conditions.** *In viro Cell. Dev. Biol.* 2009; 45(5-6): 281-289
11. Mozdarani H, Nazari E. **Cytogenetic damage in preimplantation mouse embryos generated after paternal and parental gamma-irradiation and the influence of vitamin C.** *Reproduction.* 2009; 137(1):35-43
12. Salahshorifar I, Masoudi N S, Gourabi H. **Cytogenetic findings in couples who are candidates for assisted reproductive techniques.** *Yakhteh* 2009; 10(4): 288 -294
13. Aleahmad F, Gourabi H , Zeinali B , Kazemi Ashtiani S, Baharvand H. **Separation of X and Y bearing human spermatozoa by PureSperm gradients evaluated by fluorescent in situ hybridization.** *RBM* 2009; 18(4): 475-478
14. Radpour R, Taherzadeh Fard E, Gourabi H, Asiani S, Vosough A, Asiani A. **Novel cause of hereditary obstructive azoospermia: a T2 allele in the CFTR gene.** *RBM* 2009; 18 (3):327-32
15. Mozdarani H, Nazari E. **Cytogenetic damage in preimplantation mouse embryos generated after paternal and parental gamma-irradiation and the influence of vitamin C.** *Reproduction.* 2009 ;137(1):35-43



### *Department of Embryology*

The Department of Embryology was founded in 1995 with the main goal of increasing the success rate of infertility through improvement in embryo quality.

This department consists of five subgroups:

1. Oocyte Biology
2. Sperm Biology
3. Embryo Biotechnology
4. Implantation Biology
5. Clinical Research

Major research interests in this department are:

1. Increasing gamete and embryo quality
2. Molecular aspects of gamete maturation and embryo development
3. Embryo co-culture with different type of somatic cells
4. Molecular aspects of gamete and embryo freezing
5. In-vitro maturation of animal and human gametes (IVM)
6. Molecular and cellular events of embryo implantation
7. Three dimensional cell culture to design endometrium biomodel
8. Nuclear transfer
9. Animal cloning and transgenesis
10. Sperm chromatin deficiency

#### Staff of the Department:



Head of department:

- M. Rezazadeh Valojerdi, PhD

Members:

- |                               |                               |
|-------------------------------|-------------------------------|
| • Hossein Eimani, PhD         | • Poopak Eftekhari-Yazdi, PhD |
| • Abdolhossein Shahverdi, PhD | • Bahar Movaghar, PhD         |
| • Leili Karimeian, MSc        | • Azam Dalman, MSc            |
| • Fatemeh Hasani, MSc         | • Rouhollah Fathi, MSc        |
| • Leila Sadat Tahaei, MSc     | • Hiva Alipour, DVM           |
| • Fariba Khosravi, MSc        | • Mahzad Akbarpour, DVM       |
| • Mohammad Fazel, MSc         | • Rahman Fakheri, BSc         |
| • Zeinab Vahabi, BSc          |                               |

#### *Ongoing projects:*

1. The assessment of free radical in Seminal Plasma of infertile patient and its association with sperm abnormalities and fertility rate
2. Effect of Insulin like growth factor -1 on apoptosis and in vitro developmental competence of bovine oocyte under the heat stress
3. Effect of intercourse around the time of embryo transfer on embryo implantation, development and pregnancy outcome in ART cycles.
4. Assessment of bovine sexed semen preceding cryopreservation with Egg yolk based and soy bean lecitin-



based extenders.

5. DNA Methylation pattern of bcl-2, bax and Caspase genes in normal and fragmented human embryos derived from ART.
6. DNA Methylation pattern in embryos
7. Human factor IX Production in transgenic Goat by nuclear transfer.
8. DNA Methylation pattern of Pou5f1 (Oct4), Peg1/Mest developmental genes in vitrified-warmed mouse embryos
9. Comparison of apoptosis, viability and maturation in isolated mouse preantral follicle after slow freezing and cryotopvitrification.
10. Correlation of reactive oxygen species(ROS),reactive nitrogen species(RNS) levels in semen with DNA fragmentation ,apoptosis ,mitochondrial membrane potential in human spermatozoa and the fertilization rate in male factor infertile men.
11. vitrification of mouse, sheep and human ovarian tissue.
12. Modeling & Simulation of Living Cells deformation during Microinjection & Micropipette Aspiration.
13. mRNA expression patterns of maturation genes during in vitro maturation of sheep COCs in presence granulose cells
14. Effect Of Crocus Sativus Extract On In-Vitro Maturation of Mouse Oocyte & development.
15. The effects of Angiogenesis factors (VEGF, IL\_6) on heterograft mouse ovaries.
16. Effect of Papaver rhoeas extract on in-vitro maturation and development of immature mouse oocytes.
17. In vitro maturation & development of immature mouse oocytes of autotransplanted vitrified ovaries.
18. Three- Dimensional culture system designing for embryo implantation.
19. Effect of vitrification on Histon Modification of regulatory region H19-Igf2 in mouse embryo.



*Completed projects:*

1. Effect of LH Hormone on Mouse Blastocyst Development in Different Epithelial Cell Coculture Systems.
2. Induction of cell cycle synchronization of sheep somatic cells in vitro.
3. Effect of Cryotop vitrification method on development of 8-cell stage mouse embryos after blastomere biopsy.
4. In Vitro Maturation and Development of Mouse Transplanted Ovary Immature Oocytes.
5. The Study of Maturation and Development of Immature Oocytes from Vitrified Neonate Mouse Ovarian Tissue.
6. Human factor IX Production in transgenic Goat by nuclear transfer.
7. Vitrification of mouse, sheep and human ovarian tissue.
8. DNA Methylation pattern in embryos.
9. Farm animal sex determination by X and Y sperm isolation.

*Articles:*

1. Dashrdar Havva, Valojerdi M. **Ultrastructure of rat seminal vesicle epithelium in the acute phase spinal cord transaction.** Neurological Research, Jun 2008; 30: 487-492
2. Esfandiary E, Amirpour N, Fesharaki M, Nasr Esfahani MH, Molavi F, Nazem Kh, Razavi Sh, Shakibaei M. **Access to Chondrocyte Culture, with Alginate, In Iran.** Yakhteh Medical Journal 2008; 10(37): 73-75
3. Azadbakht M, Rezazadeh M. **Development of vitrified-warmed mouse embryo co cultured with polarized or non polarized uterine epithelial cells using sequential culture media.** Journal of assisted reproduction and genetics 2008; 25: 251-261
4. Shahverdi A, Movahedin M, Rezazadeh Valojerdi M, Kazemi Ashtiani S, Kashani H. **Arrangement of Microtubules in Embryos Derived from Mice Young, Old and Reconstructed Oocytes.** Yakhteh Medical Journal 2008; 10(38): 145-151
5. Kazemi Ashtiani S, Nasr-Esfahani M.H, Hosseini S.M, Moulavi F, Hajian M, Frouzanfar M, Abedi P, Meamar M, Rezazadeh Valojerdi M, Gourabi H, Shahverdi A.H, Baharvand H, Vosough Dizaj A, Imani H, Eftekhari-Yazdi P, Vojgani M, Safahani M, Radpour R, Salahshouri Far I. **Royana: Successful Experience in Cloning the Sheep.** Yakhteh Medical Journal 2008; 10(39): 193-200
6. Fathi R, Rezazadeh Valojerdi M, Eftekhari-Yazdi P. **Effect of laser-assisted hatching and necrotic blastomere removal on the development of vitrified-warmed four-cell mouse embryos.** J Assist Reprod Genet. 2008 Jul; 25(7):333-9. Epub 2008 Aug 8
7. Dalman A, Eimani H, Sepehri H, Ashtiani S. K, M.R. Valojerdi, P. E. Yazdi, A. Shahverdi . **Effect of mono-(2-ethylhexyl) phthalate (MEHP) on resumption of meiosis, in vitro maturation and embryo development of immature mouse oocytes.** Biofactors 2008; 149-155
8. Fathi R, Rezazadeh Valojerdi M., Eftekhari Yazdi P. **Investigating the Effect of Laser Assisted Hatching on the Development and Quality of Vitrified-Warmed 4-Cell Stage Mouse Embryos .**Yakhteh Medical Journal 2008, 10(38), 121-128
9. Kabir-Salmani M, Christopher R. Murphy, Hosseini A, Rezazadeh Valojerdi M. **Ultrastructural Modifications of Human Endometrium during the Window of Implantation.** IJFS 2008; 2(2): 44-59
10. Hosseini S.M, Moulavi F, Hajian M, Abedi P, Forouzanfar M, , Ostad Hosseini Syzeh, Hosseini L, Pirestani A, Ghasemzadeh Nava H, Tajik P, Shahverdi A.H, Nasr-Esfahani M.H. **Highly Efficient In Vitro Production of Bovine Blastocyst in Cell-Free Sequential Synthetic Oviductal Fluid vs. TCM199 Vero Cell Co-Culture System.** IJFS 2008; 2(2): 66-73
11. Alipour H, Eftekhari-Yazdi P. **Effect of LH Treated Ovine Oviductal Epithelial Cell Co-Culture System on Murine Pre-Embryo Development.** IJFS 2008; 2(3): 131-138
12. Akbarpour M, Houshmand M, Ghorashi A, Hayatgheybi H. **Screening for FecGH Mutation of Growth Differentiation Factor 9 Gene in Iranian Ghezel Sheep Population.** IJFS 2008; 2(3): 139-144
13. A Dalman, H Eimani, H Sepehri, S K Ashtiani, M. Rezazadeh Valojerdi, P Eftekhari Yazdi, A Shahverdi. **Effect of mono-(2-ethylhexyl) phthalate (MEHP) on resumption of meiosis, in vitro maturation and embryo development of immature mouse oocytes.** Biofactors 2008; 33: 149-155
14. R. Fathi, M. Rezazadeh Valojerdi, P. Eftekhari Yazdi. **Investigating the Effect of Laser Assisted Hatching on the Development and Quality of Vitrified-Warmed 4-Cell Stage Mouse Embryos.** Yakhteh Medical Journal, Vol 10, No 2, summer 2008, Pages: 121-128
15. Sadeghian Nodishan F, Eftekhari-Yazdi P, Sepehri H, Eimani H, Dalman A. **In Vitro Cell Cycle Synchronization of Sheep Granulosa Cells.** Journal of Iranian Anatomical Sciences, Vol. 6, No. 24, autumn 2008, Pages: 459-464
16. Eimani H, Siadat SF, Eftekhari P, Parivar K, Rezazadeh M, Shahverdi A. **Comparative study between intact and non intact intramuscular autologous mouse ovaries.** RMB 2009; 18(1): 53-60
17. Eslaminejad MB, Rouhi L, Arabnajafi M, Baharvand H. **Rat marrow-derived mesenchymal stem cells developed in a medium supplemented with the autologous versus bovine serum.** Cell Biol Int. 2009; 33(5):607-16
18. Eslaminejad M. R. B, Talkhabi M, Zeynali B, Eftekhari P. Y. **Protective role of lithium chloride against induced apoptosis in mesenchymal stem cells derived from rat marrow at the culture.** Kowsar Medical Journal, Volume 13, Issue 4, Winter 2009: 259-266



### **Royan Infertility Clinics**

Royan Infertility Clinic is the second clinic for the treatment of infertility in Iran and the first one in Tehran. Although there are more than 50 infertility clinics throughout Iran, after 18 years of experience in this field and due to the high rate of success, many patients prefer to have their treatments in this clinic. Each year we have numerous foreign patients who come to Iran for infertility treatment. Different services include diagnostic and operative laparoscopy, IUI, ovulation induction, IVF, ICSI, PGD, PESA/TESE, microscopic TESA, vasovasostomy, vasoepididymostomy, TURD, gamete and embryo cryopreservation, assisted hatching, karyotyping, molecular genetic tests such as Factor V Leiden, Factor II and MTHFR gene, as well as others routinely offered to patients.

Royan Infertility Clinics includes different sections for the assessment of different aspects of infertility and developing the best treatment methods:

1. Endocrinology Clinic
2. Endoscopy Clinic
3. Endometriosis Clinic
4. Recurrent Abortion Clinic
5. Prenatology Clinic
6. IVF Failure Clinic
7. Male Infertility Clinic
8. Psycho- Social Support and Counseling Clinic
9. Genetic Counseling Clinic
10. Imaging modalities such as rectal and vaginal ultrasonography



### Statistics of Royan Infertility Clinic Activities and Treatment Cycles in 2008-2009:

Total number of visited patients	8656
Genetic Counseling	1168
Psychological Counseling	981
Diagnostic Laparoscopy	202
Diagnostic Hysteroscopy	818
Diagnostic Laparohysteroscopy	146
Hysterosonography	58
Varicocelectomy	141
PESA/TESE	1508
PGD	144
Embryo Transfer & Freezing	504
IUI	2268
IVM	53
IVF cycle	15
ICSI cycle	4182



## ROYAN Institute for Stem Cell Biology and Technology | (RI-SCBT)

**RI-SCBT**, first, as the “Department of Stem Cells” was established in 2002 with the aim of generating insight into the biology of stem cells, providing a comprehensive “bench to bedside” approach to regenerative medicine and the administration of new cell therapies that can restore tissue function to patients.

The **RI-SCBT** consists of three departments and one center:

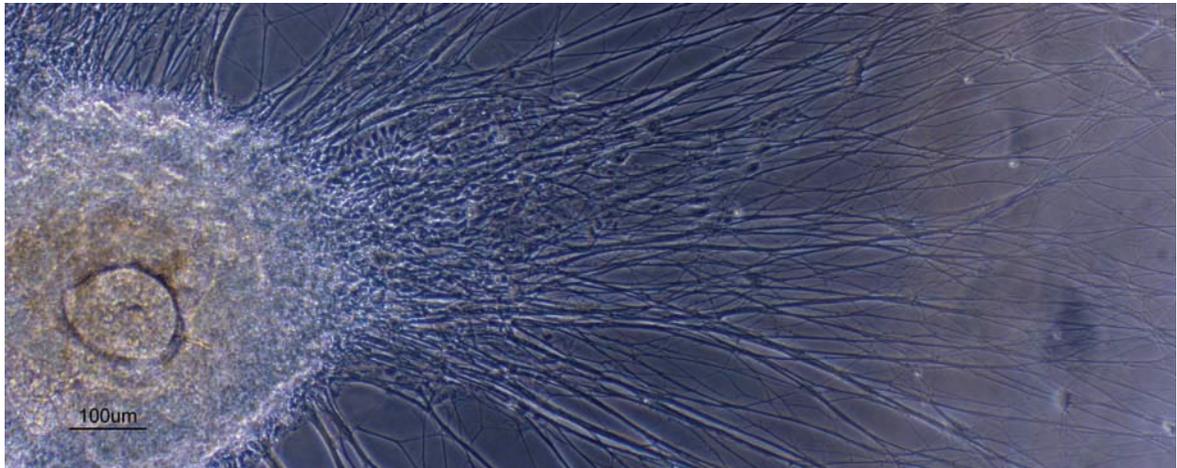
1. Department of Stem Cells and Developmental Biology
2. Department of Molecular Systems Biology
3. Department of Regenerative Medicine
4. Cell Therapy Center.

### *Department of Stem Cell and Developmental Biology*

The main goal of this department is to undertake research on animal models of human diseases and mechanisms of stem cell self-renewal and differentiation.

Focused Areas of the department are:

- Establishment of different stem cell lines
- Differentiation of the stem cells
- Transplantation of stem cells or their derivatives in animal models
- Study of regeneration in animal models
- Generation of transgenic mice
- Nano-engineering, and Tissue engineering



### *Department of Molecular Systems Biology*

This department emerged as a result of a new research model called “systems biology” to analyze biological complexity and derive an understanding of how biological systems function.

Focused areas of the department are:

- Identification of molecular mechanisms controlling embryonic stem cell proliferation and differentiation
- Characterization of induced pluripotent stem cells and reprogramming regulatory networks
- Establishment of interaction networks of major stem cells genes



### *Department of Regenerative Medicine*

This department is a translational research facility which brings discoveries from the laboratory bench directly to the clinical setting and is committed to enhance human healthcare by promoting the quality, safety, and efficiency of clinical trials through ethical considerations, scientific expertise, quality assurance and education.

Focused areas of the department are:

- Facilitate and enhance collaborations between basic, translational and clinical faculties in disease-specific focus groups
- Prevent, reverse, improve or cure human diseases by application of cell therapies, using adult stem cells in immediate applications and, potentially, other stem cells in the future after safety and efficacy demonstration
- Development of in vivo imaging to track the location and function of transplanted cells
- Development of new matrix materials using nanotechnology or tissue engineering for clinical application

### *Cell Therapy Center*

Royan Cell Therapy Center (RCTC) was founded in 2009 with a major focus on cell transplantation methods. The center offers different cells and products for bioresearch, drug discovery, and cell therapy applications.

#### **Available services for cell therapy:**

- Limbal Stem Cell deficiency for corneal injury
- Local vitiligo

#### **Available services for cell banking:**

- Public cord blood cell bank
- Bone marrow stem cell bank

#### **Available stem cell lines:**

- Human Mesenchymal Stem Cells
- Mouse and Human Embryonic Stem Cells
- Human Induced Pluripotent Stem Cells

#### **Available recombinant protein:**

- basic-Fibroblast Growth factor (bFGF)

#### **Staff of the Institute:**



Head of Department:

- H. Baharvand , PhD

Members:

- **S. Kazemi Ashtiani, Ph D, gone, but not forgotten**
- M. R. Baghban Eslaminejad, PhD
- N. Aghdami, M.D, PhD
- N. Zare Mehrjardi, PhD
- M. Ebrahimi, PhD
- G. Hosseini Salekdeh, PhD



### Completed projects:

1. Human Induced Pluripotent Stem Cells: Derivation, Propagation, and Freezing in Serum- and Feeder Layer-Free Culture Conditions
2. Midterm outcomes of Autologous Cultivated Limbal Stem Cell Transplantation with or without penetrating keratoplasty
3. Safety and Efficacy of Autologous Intramuscular Implantation of Bone Marrow-Mononuclear Cells in Combination with Granulocyte Colony Stimulating Factor: A Randomized Controlled Trial in Patients with Advanced Lower Limb Ischemia
4. 21- Proteome and transcriptome analyses of stem cells provided new insights into key participants in proliferation and differentiation
5. 22- Type I collagen gel in seeding medium improves murine mesenchymal stem cell loading onto the scaffold, increases their subsequent proliferation and enhances the culture mineralization
6. 23- NTRA-Epidermal transplantation of autologous melanocytes improved pigmentation of Vitiligo patients
7. Comparison of bone regeneration in Canine mandible by autologous mesenchymal stem cells loaded onto HA/TCP and Bio-Oss
8. Three-dimensional and monolayer culture of chondrocytes isolated from rat articular cartilage
9. Comparison of expansion and differentiation of the supernatant and primarily-adherent mesenchymal stem cells from rat marrow primary culture
10. Quantitative study of rat marrow-derived mesenchymal stem cell proliferation and bone differentiation in hybrid PLLA/nano HA scaffolds
11. Human embryonic stem cell-derived neural precursor transplants in collagen scaffolds promote recovery in injured rat spinal cord
12. Mesenchymal stem cell-derived neural precursor transplants in collagen scaffolds promote recovery in injured rat spinal cord
13. Effect of extracellular matrix and co-culture with fetal pancreas on differentiation of insulin secreting cells from mouse embryonic stem cells
14. Differentiation of embryonic stem cells to primordial germ cells in vitro
15. Effect of BIO (6-Bromoindirubin-3'-Oxime) on proliferation, apoptosis and bone differentiation of rat marrow-derived mesenchymal stem cells in culture
16. Comparison of autologous mesenchymal stem cell and/or transplantation in monkey spinal cord injury model
17. Histopathologic and magnetic resonance imaging evaluation of experimental induced spinal cord injury by using modified Allen's method
18. Differentiation of neural cells on poly  $\alpha$ -hydroxy acid microspheres
19. Expression of heat Shock Proteins in two and three dimensional Culture of Limbal Stem cells
20. Cloning of mouse PPAR $\gamma$ 1 cDNA and construction of it in EGFP containing vector
21. Autologous transplantation of bone marrow-derived CD133+, CD34+ stem cells to Cirrhotic patients
22. Transplantation of autologous melanocyte cells for treatment in patients with Vitiligo
23. Differentiation of embryonic stem cells into neural cells on PLLA scaffold

### Articles:

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## ROYAN Institute for Animal Biotechnology | (RI-AB)

**RI-AB**, the first research branch of Royan Institute in Isfahan province was founded in 2004 in order to advance research on reproduction, development, cell and molecular biology as well as bioengineering and reproductive technology.

The institute has focused on the development of certain methods including somatic cell nuclear technology (SCNT), interspecies-SCNT, gene reprogramming during SCNT, transgenesis, novel sperm selection for assisted reproductive technology and cell differentiation; production of recombinant proteins and research on cell biology of peroxisomes.

This institute consists of three departments and one center:

1. Department of Reproduction and Development
2. Department of Molecular Biotechnology
3. Department of Cell and Molecular Biology
4. Dairy Assist Center

Major Achievements of the **RI-AB** are as following:

1. Production of Iran's first cloned sheep, **Royana**.
2. Production of Iran's first cloned goat, **Hanna**.
3. Production of Iran's first cloned cow, **Bonyana**.



4. Production of the first IVF cow, sheep and goat.
5. Establishment of novel sperm selection procedures.
6. Clinical trials for novel sperm selection procedures.
7. Establishment of the genomic bank for local endangered species.
8. Publications of book and papers in international and national journals about andrology, stem cell and cloning.
9. Establishment of the International Journal of Fertility and Sterility
10. Isolation of OCT-4 promoter for the control of EGFP gene in an indicator plasmid
11. Construction of a more efficient variant of TPA termed tenctoplase
12. Cloning of PEP and PPAR gamma cDNAs



#### *Department of Reproduction and Development*

This department is focused on the mechanisms of in vivo and in vitro embryo development, dairy farming and biopharming, developing further advances to overcome in vitro stress for embryo development, transgenesis and cryopreservation.

Main goals in this research area include:

- Establishment of different methods for somatic cell nuclear transfer (SCNT) or cloning
- Production of transgenic animal via cloning, sperm and germ cells
- Production of novel culture media for in vitro embryo development
- Cryopreservation of gametes, embryos and reproductive tissues
- Production of stem cells for farm animals
- Increasing cloning efficiency by epigenetic modification
- Establishment of screening test for the assessment of sperm integrity
- Establishment of novel sperm selection procedures for ART

Focused Areas of this department include:

- Somatic cell nuclear transfer
- Transgenesis
- Cryobiology
- Novel sperm selection procedure
- Sperm functional tests
- Sperm biology

#### *Department of Molecular Biotechnology*

One of the main missions of this department is to produce recombinant proteins through cell culture and animal transgenesis. The department aims to achieve world-class applicative approaches in production of recombinant proteins.



Main goals of this group are:

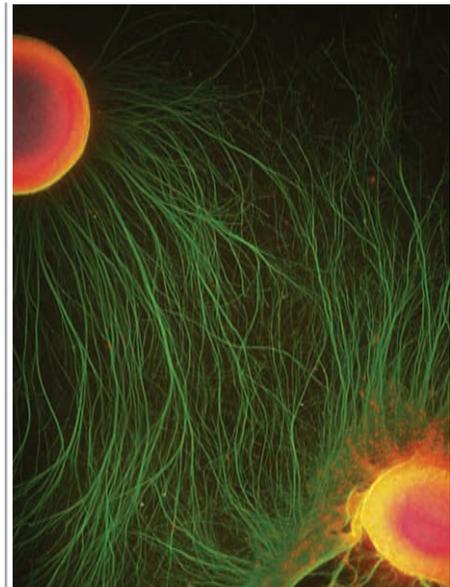
- Production and construction of efficient vectors for producing recombinant proteins
- Cloning of appropriate genes
- Genetic manipulation of the genes for pharmaceutical purposes
- Increasing gene transfection, through non-viral procedure
- Isolation and maintenance of the stable transformants of mammalian cells
- Homologous or site directed recombination of genes into a target genome

#### *Department of Cell and Molecular Biology*

In this department we are engaged in finding genetic and molecular factors responsible for neurogenesis at the cellular level, testing peroxisome biogenesis factors and their possible roles in neural cell differentiation.

Main interests in this research area include:

- Assessment of peroxin gene expression in development and cell differentiation
- Assessment of recent peroxisomal protein (PEP) gene expression and function
- Implementation of RNAi technique in assessment of gene functions
- Analysis of promoters of genes responsible for cellular differentiation
- Analysis of protein interactions in cellular differentiation



#### *Dairy Assist Center (DAC)*

Dairy Assist Center (DAC) provides R&D support for expanding the dairy industry throughout the country. This center has created the first joint effort to offer a continuum of academic, technical and applied collaboration with local and national industrial dairy complexes.

The main activities of the center are:

1. Sperm technologies, semen tests and IVF experiments for checking the fertilization potential of the semen.
2. Ovary and oocyte technologies such as obtaining immature oocytes for IVF or freezing and ovary tissue cryopreservation.
3. Embryo technologies to assist such as multiple dairy owners to multiply their champions including: ovulation, artificial insemination, embryo flushing, embryo transfer, IVF with sexed semen, ICSI, sperm and embryo sexing, in vitro embryo culture, embryo freezing and banking.



Staff of the Institute:



Head of institute:

- Mohammad H. Nasr Esfahani, PhD

Members:

- |                                |                                |
|--------------------------------|--------------------------------|
| • Kamran Ghaedi, PhD           | • Mohsen Frouzanfar, PhD       |
| • Seyed Morteza Hosseini, DVM  | • Somayyeh Ostad Hosseini, DVM |
| • Yahya Khazaei, MD            | • Kianoosh Dormiani, MD        |
| • Mohammad Ali Hamiditabar, MD | • Seyed Hamed Khodaei, MSc     |
| • Marziyeh Tavalee, MSc        | • Mahdi Hajian, MSc            |
| • Mohammad Reza Deemeh, M.Sc   | • Somayyeh Tanhaei, MSc        |
| • Abbas Kiani, MSc             | • Khadijeh Karbalaee, MSc      |
| • Fereshteh Karamali, MSc      | • Laleh Hosseini, MSc          |
| • Mahboobe Forouzanfar, BSc    | • Maryam Arbabian, BSc         |
| • Farzaneh Rabiee, BSc         | • Marzieh Nematollahi, BSc     |
| • Parvaneh Abedi, BSc          | • Mina Khazaei, BSc            |

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## Education in Royan Institute

### Long Term Educational Courses

Joint Degree with Elm Va Farhang University of Iran in Developmental Biology

MSc Students: 30

PhD Students: 5

Ongoing Thesis Pprojects

MSc Students: 44

PhD Students: 23

Finished Thesis Projects

MSc Students: 15

PhD Students: 2




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**Infertility One-month Course for Residents of Iran University of Medical Sciences**

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Urology Residents: 5

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Gynecology Residents: 14

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***Short Term Educational Courses and Workshops***

***Andrology Department:***

- Semen Analysis
- TESE/PESA
- Workshop on Vaso Epididymal Anastomosis (VEA)



***Reproductive Imaging Department:***

- Workshop on Hysterosonography

***Gynecology and Endocrinology Department:***

- Patient Management
- Endometrial Preparation for Egg Donation
- Tubal Microsurgery with Laparoscopy
- IUI
- IVF
- ICSI
- Continuous Medical Education Course on Infertility Treatment
- 15th Seminar of Royan Institute on Advanced Methods in Diagnosis and Treatment of Infertility
- Workshop on IUI and Sperm Functional Tests
- Workshop on Hysterosonography, 9th Royan International Twin Congress
- Workshop on Laparoscopy and Tubal Microsurgery, 9th Royan International Twin Congress

***Reproductive Genetic Department:***

- FISH technique
- Chromosomal Evaluation of Oocyte and Sperm
- Cytogenetic Biomonitoring
- Chorionic Villous and Amniotic Fluid Karyotype
- Lymphocyte Karyotype
- Workshop on Molecular PGD



### *Embryology Department:*

#### **Experimental Embryology:**

- IVF and IVM in Mouse
- Embryo Co-culture
- Embryo Transfer
- Nuclear Transfer and Animal Cloning
- First International Workshop on Zona Free Nuclear Transfer in Cattle
- International Workshop on Vitrification
- Workshop on Cloning of Mammalian Genes and Transfection of Cell Lines
- Workshop on Application of Biotechnology in Animal Science
- Workshop on PCR and Primer Designing

#### **Clinical Embryology:**

- Semen Analysis and IUI
- Embryo Hatching, Biopsy and Fragmentation Removal
- Gamete and Embryo Freezing
- IVF
- ICSI
- Workshop on IUI and Sperm Processing
- Workshop on Evaluation of Sperm Functional Tests in Diagnosis and Management of Male Infertility

#### **Stem Cell Department:**

- Workshop on Stem Cell Culture and Neural Differentiation
- Workshop on Mouse Embryonic Stem Cells, Culture and Differentiation
- Workshop on Human Embryonic Stem Cells, Culture and Differentiation

#### **Epidemiology and Reproductive Health Department:**

- International Workshop on Paper Evaluation- Peer Review
- Workshop on Use of SPSS and Statistical Method in Cellular and Molecular Research
- Workshop on Basic Research Methods

## **ROYAN Institute Publications**

### ***Journals***

Yakhteh Medical Journal (Quarterly, in English and Persian)

Yakhteh Medical Journal, founded in 1999, is indexed in ISI, IMEMR, Index Copernicus Division, CSA and EMBASE. This journal focuses on cellular and molecular issues and related areas.

43 issues of the journal are already published.

International Journal of Fertility & Sterility (Quarterly, in English)

Founded in 2007, IJFS publishes articles and reviews related to the broad field of fertility and sterility. The journal is indexed in ISI, IMEMR, Index Copernicus Division and EMBASE.

10 issues of the journal are already published.

### ***Books:***

#### ***Whole Book Authorships in English:***

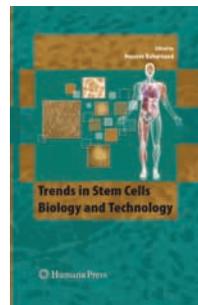
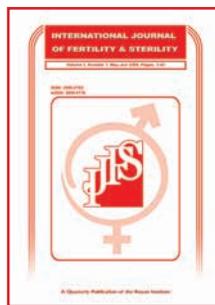
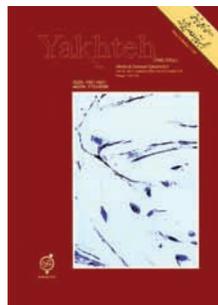
- Trends in Stem Cell Biology and Technology, Baharvand H., Humana Press, 2009

#### ***Whole Book Authorships in Persian:***

- Embryonic Stem Cells, House of Biology (Tabesh-e Andisheh) Press, 2008



- Adult Stem Cells, House of Biology (Tabesh-e Andisheh) Press, 2008
- Stem Cells: Differentiation and Applications, House of Biology (Tabesh-e Andisheh) Press, 2008
- Tissue Engineering , House of Biology (Tabesh-e Andisheh) Press, 2008
- Infertility & Myoma, T. Madani & M. Ashrafi, 2005
- Intra-Cytoplasmic Sperm Injection (ICSI), Mojtaba Rezaadeh , 2002
- Guide Book of Infertility treatment for Infertile Couples, Hossein Baharvand, 1998
- Guide Book of Infertility treatment for Infertile Couples, Mojtaba Rezaadeh, 1995



#### *Book Chapter Authorships:*

- Baharvand H.  
Chapter: Embryonic Stem Cells: Establishment, Maintenance, and Differentiation: Embryonic Stem Cell Research. Nova Science Publishers, Inc. (USA), 2006
- Baharvand H.  
Chapter: Embryonic Stem Cells: Establishment, Maintenance, and Differentiation: Frontiers in Stem Cell Research. Nova Science Publishers, Inc. (USA), 2007
- Baharvand H., Zare Mehrjardi N.  
Chapter: Nanotechnology Applications in Stem Cell Biology and Technology: Bionanotechnology. CRC publisher, 2008
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Human Embryonic Stem Cell Protocols: Second Edition, Editor: Dr. Kursad Turksen. Human Press. Under preparation

#### *Translations:*

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Embryonic Stem Cells: Characteristics and Potentials for Treatment. In: Treatment of Genetic Disease. Tehran University of Medical Sciences, 2004
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