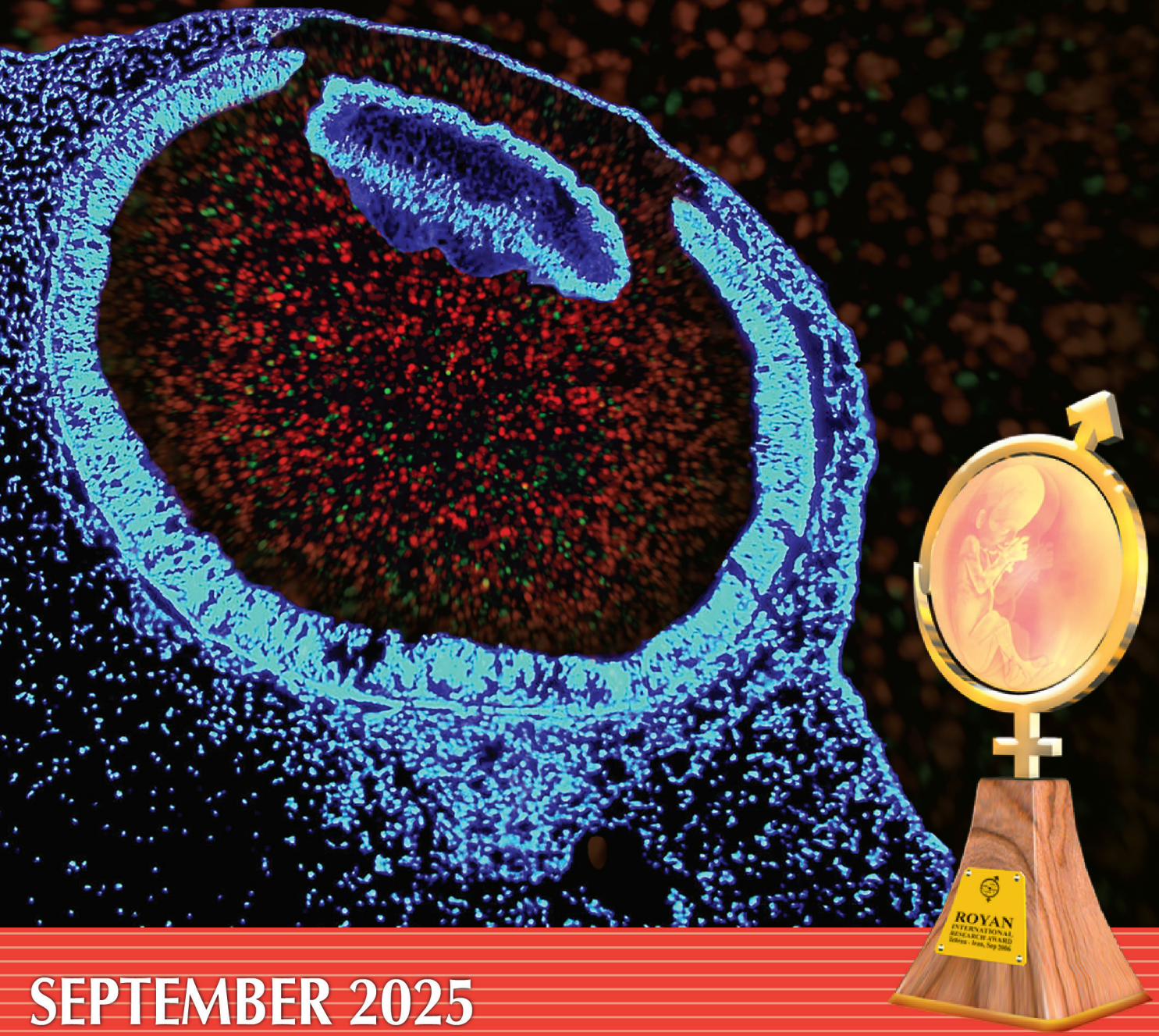
ROYAN INSTITUTE

THE TWENTY-FOURTH ROYAN INTERNATIONAL RESEARCH AWARD

Reproductiv Biomedicine, Stem Cell Biology & Technology



SEPTEMBER 2025

TEHRAN - IRAN

2026

THE TWENTY-FIFTH ROYAN INTERNATIONAL RESEARCH AWARD

The Seventh Kazemi Prize

www.kazemiprize.com

P.O.Box: 16635-148/Tehran-Iran
Phone: +98 21 23 56 26 71
Email: info@kazemiprize.com

I. R. IRAN
TEHRAN

In the Name of
GOD

The Twenty-Fourth

ROYAN

INTERNATIONAL RESEARCH AWARD

Dr Saeid Kazemi Ashtiani
The Late Founder of ROYAN Institute

Six-day-old chick embryo
by: Fereshteh Karamali

- **Organizer:**
  Royan Institute
  Street Address:
  East Hafez Alley, Banihashem Square, Tehran, Iran
  Post Address:
  P. O. Box: 148-16635, Tehran, IRAN
  Phone: +98 (21) 23 56 26 71
  Website: www.royanaward.com
  E-mail: info@royanaward.com
- **Coordinator:**
  Parvaneh Afsharian, PhD
- **Editor:**
  Sima Farrokh, BSc
- **Graphic Designer:**
  Saeed Taghiniya, BA

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

COOPERATORS

- Vice Presidency for Science, Technology and Knowledge Based Economy
- Council for the Development of Biological Sciences and Stem Cell Technologies
- Iran National Science Foundation
- The Academy of Sciences of Islamic Republic of Iran
- Supreme Council of the Cultural Revolution
- Ministry of Health and Medical Education
- Ministry of Science, Research and Technology
- Iranian Society of Reproductive Medicine
- Mustafa Science and Technology Foundation

SPONSORS

RONAK
CinnaGen
behestan darou
BEHRAD ROOYESH ROYAN
Atipharmed TOGETHER FOR YOU
ACTOVERCO
شرکت فناوری و بن یاخته های رویان

CONTENTS

FOREWORD

Dr Ali Montazeri
President of ACECR

The scientific progress of the Islamic Republic of Iran has drawn global attention in recent years. Since its establishment in 1980, the Academic Centre for Education, Culture and Research (ACECR) has prioritized scientific and technological development to ensure that all can benefit from these achievements. Over nearly four decades of activity, ACECR has focused on various fields, including medicine, engineering, agriculture, petrochemistry, culture, and art. Medical and biological activities of ACECR focus on targeted reproductive biomedicine, stem cell biology and technology, regenerative medicine, biotechnology, cancer biology, and herbal medicine, with the goal of translating the knowledge into health services.

Royan Institute, affiliated with ACECR, is one of the most successful centers, having achieved national and international recognition for its scientific accomplishments. Alongside its innovative and dedicated scientists, establishing effective scientific collaborations through the Royan International Award and Congress has been a key factor in Royan's success. Some scientists who have attended previous Royan awards and congresses have described these events in good words, while others have written articles about their collaborative projects with Iranian scientists. I hope the 24th Royan International Research Award will help define new directions in reproductive biomedicine, stem cell biology and technology, regenerative medicine, and biotechnology for the scientific community.

As the president of ACECR, I wish to honor the memory of Dr. Saeid Kazemi Ashtiani, the late founder of the Royan Institute and the visionary behind the Royan International Research Award. I also extend my sincere appreciation to the scientists from around the world who contributed to the award as a referee and projects evaluators, as well as to my colleagues at the Royan Institute—especially Dr. Abdolhossein Shahverdi, the current president of the Royan Institute—for their dedicated efforts in organizing this prestigious award. Finally, I express my sincere congratulations to the award winners and hope we can continue this scientific event in the years to come.

INTRODUCTION

Dr Abdolhossein Shahverdi
Award Chairman and Royan Institute President

Today, I thank Almighty God for helping my colleagues at the Royan Institute, affiliated with ACECR, successfully hold the 24th Royan International Research Award (RIRA) ceremony on September 3, 2025. Let us remember that RIRA was founded by the late president of Royan Institute, Dr. Saeid Kazemi Ashtiani, with the aim of encouraging researchers, appreciating their efforts, and preparing a friendly scientific atmosphere to facilitate the exchange of knowledge and experiences.

Created through the participation of researchers and experts from around the world, this opportunity provides a prestigious scientific platform for exchanging views and thinking together on new scientific topics, and our country's researchers also find an opportunity to present their latest scientific activities and achievements. We are convinced like previous RIRAs, these interactions have led to the implementation of collaborative projects and publication of joint articles in influential international journals and forums. Such connections suggest that the knowledge and expertise of researchers from our country are also being recognized and contributing to international scientific advancements in a way that we witness their efforts and achievements within our borders have elevated our nation's scientific standing on the global stages.

By organizing RIRA, Royan Institute strives to boost the motivation of young minds in order to enhance their efforts to conduct scientific research and to establish and sustain a distinguished scientific position, especially in biomedicine, at the international level.

We are excited to host researchers worldwide at Royan International Congress annually alongside the RIRA every September. Indeed, we hope these scientific meetings will lead to solutions that reduce the pain and suffering experienced by society and ultimately enable us to contribute effectively to addressing the challenges.

At the 24th RIRA, research submissions from leading countries in Reproductive Biomedicine, Stem Cell Biology, and Technology were sent to the secretariat. The bedrock of national and international winner selection was the evaluations of highly respected and influential reviewers within the scientific community. Finally, the winners were chosen by the scientific board of the Royan Institute, with assistance from some of reviewers and were introduced to the scientific community.

I would like to take this opportunity to thank all the scientific and executive committee members of RIRA who worked tirelessly to support it, but with little visibility. Finally, while I dedicate my heartfelt congratulations to the winners whose talent and perseverance have shone nationally and internationally today, I am specifically grateful for Dr. Afsharian's dedication to this matter. I hope like other scientific movements, this one will contribute to the development of new interactions, the successful exchange of ideas, and stronger connections and collaborations within the scientific community.

ROYAN AWARD

ROYAN AWARD

Royan International Research Award (RIRA) was established by the late director of Royan Institute, Dr. Saeid Kazemi Ashtiani, with the aim of encouraging researchers, recognizing their efforts, and preparing a collaborative scientific environment for the exchange of knowledge and experiences. Dr. Kazemi had wonderful ideas to unite researchers and motivate them to enhance their efforts and conduct high-level research through this award. The staff lost their beloved director in January 2006 due to a heart attack. May he rest in peace.

This annual award continues to grow in prestige each year, enhancing both the scientific quality and the number of submitted papers. The research papers are evaluated by the award's national and international jury board, to whom we extend our sincere thanks. Each year, prominent researchers who have made outstanding contributions to solving problems in the fields of reproduction and stem cells are recognized, honored, and rewarded.

Comparing research across different fields is challenging, and identifying the best studies—given the variations in methods, implementations, and results—is almost impossible. Therefore, starting from the eighth RIRA, the same prizes have been awarded to winners in various fields of reproductive biomedicine and stem cell research, including female infertility, ethics, andrology, embryology, reproductive imaging, reproductive genetics, stem cell biology and technology, regenerative medicine, and biotechnology. Since the 20th RIRA, the procedure for announcing the awardees has been revised. Under this new format, each year one or two laureates are selected in the field of stem cell research, and one or two laureates are recognized in the field of reproductive biomedicine. This change was introduced to place greater emphasis on Royan's core areas of research and to highlight outstanding scientific achievements in these two fundamental disciplines.

Nomination and Selection Procedures for the Award

The submitted research articles are categorized into two scientific groups: reproductive biomedicine and stem cell biology and technology. Each article is ranked based on its relevance, impact factor, and innovation score. After sorting, each scientific group selects its nominees and sends them to national and international referees for evaluation.

Each referee qualitatively evaluates research articles related to their field of interest using a Likert scale based on the following criteria:

- Relevance to the award categories
- Creativity and innovation
- Methodology and research design
- Problem solving
- Applicability to humans

The evaluation of nominees by the juries is reviewed by the institute's scientific board. Ultimately, international and national winners are selected and invited to present their research at the Royan Twin Congress on Reproductive Biomedicine and Stem Cell Biology and Technology, held annually in August or September. Winners receive their prizes during the award ceremony.

Note: Winners are required to attend the ceremony and present their research articles at the congress.

Previous Awards

The First

ROYAN

International Research Award

Reproductive Biomedicine, Stem Cell Biology & Technology

1

September 2000

Received Papers: 72

International Winners:

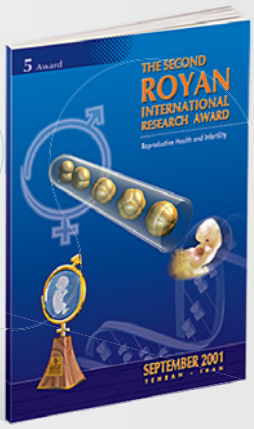
- First Place: **Mohamed Mitwally,** Canada
  Comparison of an Aromatase Inhibitor with Clomiphene Citrate for Induction of Ovulation
- Second Place: **Ali Ahmady,** Canada
  Cell and Molecular Investigation of the Fertilizing Ability of Dead Sperm
- Third Place: **Weihau Wang,** USA
  Spindle Observation 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 Ratein Women with Clomiphen Resistant PCOS
- **Mohammad Ebrahim Parsanezhad**
  Section of the Cervical Septum Doesn't Impair Reproductive Outcome

The Second ROYAN International Research Award

Reproductive Biomedicine, Stem Cell Biology & Technology



2

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

Iranian Winners:

- **Hossein Baharvand**
  Improvement of Blastocyst Development *in vitro* and Overcoming the Blastocyst Collapse and Its Effective Factor(s) in Sequential Culture Media

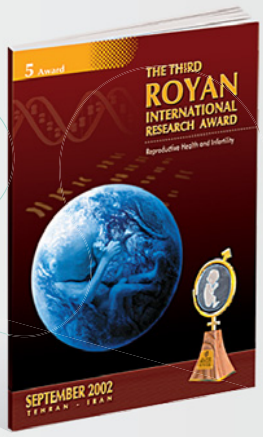
- **Marzieh Nojomi**
  Epidemiology of Infertility in the West of Tehran 2000-2001

- **Gholamreza Pourmand**
  Effect of Renal Transplantation on Sperm Quality and Sex Hormones Level

The Third ROYAN International Research Award

Reproductive Biomedicine, Stem Cell Biology & Technology

3



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-Protmine-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 Salpingoovolysis. 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

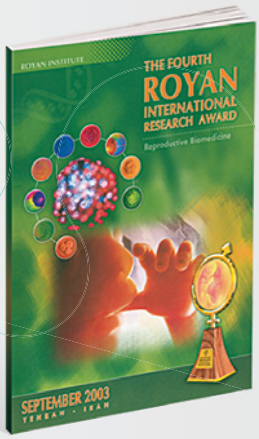
Special Winner:

- **V. I. Sodestrom- Anttila,** Finland
  Embryo Donation-Outcome & Attitude Among Embryo Donors & Recipient

The Fourth ROYAN International Research Award

Reproductive Biomedicine, Stem Cell Biology & Technology

4



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,** Belgium
  Elective Single Embryo Transfer Halves the Twinning Rate without Decrease in the Total Ongoing Pregnancy Rate of an AVF/ICSI Program

Iranian Winners:

- **Mohammad Ebrahim 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

Reproductive Biomedicine, Stem Cell Biology & Technology

5

September 2004

Received Papers: 199

International Winners:

- Second Place: **Alfonso Guiterrez-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, Oogenesin: 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

Reproductive Biomedicine, Stem Cell Biology & Technology

6

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 Testostrone Replacement Therapy

Iranian Winners:

- **Seyed Javad Mowla**
  The Profile of Gene Expression Changes During the Neural Differentiation of Bone Marrow Stormal Cells (BMSCs)
- **Jaleh Zolghadri**
  Pregnancy Outcome Following Laparoscopic Tubal Ligation of Hydrosalpinx Tube in Patients with Early Recurrent Abortion

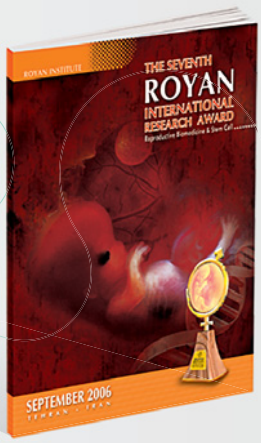
The Seventh

ROYAN

International Research Award

Reproductive Biomedicine, Stem Cell Biology & Technology

7



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 Lipopolysaccaride

- 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:

- **Mohammadreza Baghban Eslaminejad**
  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

Reproductive Biomedicine, Stem Cell Biology & Technology

8

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 genetic field

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

Best research project in female infertility 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

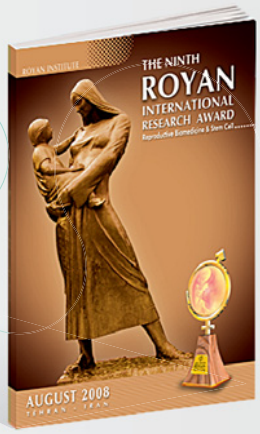
The Ninth

ROYAN

International Research Award

Reproductive Biomedicine, Stem Cell Biology & Technology

9



September 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 genetic 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 projects in female infertility field (share)

- **Federico Prefumo,** Italy
  Uterine Doppler Investigations and Trophoblast Biology in Early Pregnancy

- **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:

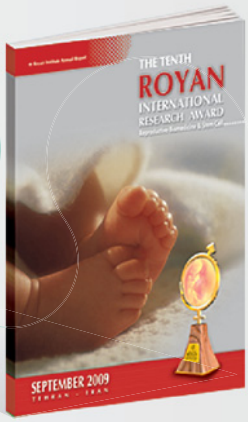
- **Ali Fathi**
  The Molecular Mechanisms Controlling Embryonic Stem Cells (Escs) Proliferation and Differentiation

- **Fardin Fathi**
  Characterizing Endothelial Cells Derived from the Murine Embryonic Stem Cell Line CCE

The Tenth ROYAN International Research Award

Reproductive Biomedicine, Stem Cell Biology & Technology

10



September 2009

Received Papers: 253

International Winners:

Best research project in stem cell field

- **Yi Liu,** China
  Dental Stem Cells-Based Tissue Regeneration in a Large Animal Model

Best research project in reproductive genetic field

- **Wai-sum OO,** China
  Adrenomedullin in Male and Female Reproduction

Best research projects in female infertility field (share)

- **Sherman Silber,** USA
  A Series of Monozygotic Twins Discordant for Ovarian Failure: Ovary Transplantation (Cortical versus Microvascular) and Cryopreservation

- **Melinda Halasz ,** Hungary
  What Harbours the Cradle of Life? The Progesterone-Dependent Immunomodulation

Best research project in embryology field

- **Geetanjali Sachdeva,** India
  Molecular Assessment of the Uterine Milieu during Implantation Window in Humans and Non-human Primates

Best research project in andrology field

- **Paolo Chieffi,** Italy
  PATZ1 Gene Has a Critical Role in the Spermatogenesis and Testicular Tumours

Iranian Winners:

- **Hossein Mozdarani**
  Reduction of Induced Transgenerational Genomic Instability in Gametes Using Vitamins E and C, Observed As Chromosomal Aneuploidy and Micronuclei in Preimplantation Embryos

- **Seyed Javad Mowla**
  OCT4 Spliced Variants Are Differentially Expressed in Human Pluripotent and Nonpluripotent Cells

- **Mohammad Reza Safarinejad**
  Evidence Based Medicine on the Pharmacologic Management of Premature Ejaculation

The Eleventh

ROYAN

International Research Award

Reproductive Biomedicine, Stem Cell Biology & Technology

11

September 2010

Received Papers: 358

International Winners:

Best research project in regenerative medicine field

- **Stefano Pluchino,** Italy
  Human Neural Stem Cells Ameliorate Autoimmune Encephalomyelitis in Non-human Primates

Best research project in stem cell biology & technology field

- **Hooman Sadri-Ardekani,** Iran-The Netherlands
  Propagation of Human Spermatogonial Stem Cells *in vitro*

Best research project in female infertility field

- **Louis Chukwuemeka Ajonuma,** Nigeria
  New Insights into the Mechanisms Underlying Chlamydia Trachomatis Infection Induced Female Infertility

Best research project in reproductive genetic field

- **Anu Bashamboo,** France
  Mutations in NR5A1 Associated with Ovarian Insufficiency

Best research project in embryology field

- **Mohammad Hossein Nasr-Esfahani,** Iran
  New Era in Sperm Selection for ICSI Procedure

Iranian Winners:

- **Serajoddin Vahidi**
  Prevalence of Primary Infertility in the Islamic Republic of Iran in 2004-2005

- **Tahereh Ma'dani**
  Improvement of Pregnancy Rate in ART Cycles

- **Mehrdad Noruzinia**
  MTHFR Promoter Hypermethylation in Testicular Biopsies of Patients with Non-obstructive Azoospermia: The Role of Epigenetics in Male Infertility

- **Abbas Piryaei**
  Differentiation Capability of Mouse Bone Marrow-Derived Mesenchymal Stem Cells into Hepatocyte-Like Cells on Artificial Basement Membrane Containing Ultraweb Nanofibers and Their Transplantation into Carbon Tetrachloride Injured Liver Model

The Twelfth ROYAN International Research Award

Reproductive Biomedicine, Stem Cell Biology & Technology

12

September 2011

Received Papers: 280

International Winners:

Best research project in regenerative medicine field

- **Lorenzo Piemonti,** Italy
  Bone Marrow as Ideal Microenvironment for Human Islet Transplantation to Treat Type 1 Diabetes (ClinicalTrials.gov Identifier: NCT01345227)

Best research project in stem cell biology & technology field

- **Hiromitsu Nakauchi,** Japan
  Heterogeneity and Hierarchy Within the Most Primitive Hematopoietic Stem Cell Compartment

Best research project in female infertility field

- **Elizabeth Stewart,** USA
  Safely Extending Focused Ultrasound Surgery for Uterine Leiomyomas to Women Who Desire Future Pregnancies

Best research project in reproductive genetic field

- **Paul Thomas,** Australia
  Identification of SOX3 As an XX Male Sex Reversal Gene in Mice and Humans

Best research project in embryology field

- **Steve Tardif,** UK
  Infertility with Impaired Zona Pellucida Adhesion of Spermatozoa from Mice Lacking TauCstF-64

Best research project in epidemiology & ethics fields

- **Heping Zhang,** USA
  Decision Trees for Identifying Predictors of Treatment Effectiveness in Clinical Trials and Its Application to Ovulation in a Study of Women with Polycystic Ovary Syndrome

Iranian Winners:

- **Morteza S. Hosseini**
  Development of an Optimized Zona-Free Method of Somatic Cell Nuclear Transfer in the Goat

- **Jaleh Zolghadri**
  Relationship Between Abnormal Glucose Tolerance Test and History of Previous Recurrent Miscarriages, and Beneficial Effect of Metformin in These Patients: A Prospective Clinical Study

- **Batool Rashidi**
  Simvastatin Effects on Androgens, Inflammatory Mediators, and Endogenous Pituitary Gonadotropins Among Patients with PCOS Undergoing IVF: Results from a Prospective Randomized Placebo-Controlled Clinical Trial

The Thirteenth

ROYAN

International Research Award

Reproductive Biomedicine, Stem Cell Biology & Technology

13

September 2012

Received Papers: 169

International Winners:

Best research project in stem cell biology & technology field

- **Chengcheng (Alec) Zhang,** USA
  ex vivo Expanded Hematopoietic Stem Cells Overcome the MHC Barrier in Allogeneic Transplantation

Best research project in andrology field

- **Kristian Almstrup,** Denmark
  Screening of Subfertile Men for Testicular Carcinoma in Situ by an Automated Image Analysis-based Cytological Test of the Ejaculate

Best research projects in female infertility field (share)

- **Wenjie Zhu,** China
  Transvaginal Ultrasound-guided Ovarian Interstitial Laser Treatment in Anovulatory Women with Polycystic Ovary Syndrome: A Randomized Clinical Trial on the Effect of Laser Dose Used on the Outcome

- **Kaei Nasu,** Japan
  Role of Mevalonate-Ras Homology (Rho)/Rho-associated Coiled-Coil-Forming Protein Kinase-mediated Signaling Pathway in the Pathogenesis of Endometriosis-associated Fibrosis

Best research project in reproductive genetic field

- **Signe Atlmäe,** Sweden
  Interactorme of Human Embryo Implantation: Identification of Gene Expression Pathways, Regulation, and Integrated Regulatory Networks

Best research project in embryology field

- **Laura Cecilia Giojalas,** Argentina
  Sperm Chemotaxis towards Progesterone, a Guiding Mechanism That May Be Used to Select the Best Spermatozoa for Assisted Reproduction

Iranian Winner:

- **Alireza Pouya**
  Human Induced Pluripotent Stem Cells Differentiation into Oligodendrocyte Progenitors and Transplantation in a Rat Model of Optic Chiasm Demyelination

The Fourteenth ROYAN International Research Award

Reproductive Biomedicine, Stem Cell Biology & Technology

14

September 2013

Received Papers: 206

International Winners:

Best research project in stem cell biology & technology field

- **Antonio Uccelli,** Italy
  Mesenchymal Stem Cells Shape Microglia Effector Functions Through the Release of CX3CL1

Best research project in reproductive genetic & andrology fields

- **Pierre F Ray,** France
  Search for Genetic Causes of Male Infertility

Best research project in female infertility field

- **Paola Panina Bordignon,** Italy
  The Selective Vitamin D Receptor Agonist Elocalcitol Reduces Development of Endometriosis and Formation of Peritoneal Adhesion in a Mouse Model

Best research project in embryology field

- **Mariano Buffone,** USA
  Role of Actin Cytoskeleton During Mouse Sperm Acrosomal Exocytosis

Iranian Winners:

- **Ashraf Moini**
  Risk Factors Associated with Endometriosis Among Iranian Infertile Women

- **Malek Hossein Asadi**
  OCT4B1, A Novel Spliced Variant of OCT4, Is Highly Expressed in Gastric Cancer and Acts as an Antiapoptotic Factor

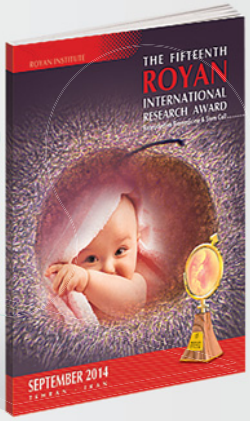
- **Hossein Mozdarani**
  Genome Instability and DNA Damage in Male Somatic and Germ Cells Expressed as Chromosomal Microdeletion and Aneuploidy Is a Major Cause of Male Infertility

- **Armin Towhidi**
  Omega-3 Fatty Acids Accompanied with A-Tocopherol Improved Fresh and Post-thaw Sperm Quality in Ruminants

The Fifteenth ROYAN International Research Award

Reproductive Biomedicine, Stem Cell Biology & Technology

15



September 2014

Received Papers: 222

International Winners:

Best research project in regenerative medicine field

- **Anne S. Baron-Van Evercooren,** France
  Role of Endogenous Neural Precursor Cells in Multiple Sclerosis

Best research project in stem cell biology & technology field

- **Milena Bellin,** Netherlands
  Human Pluripotent Stem Cells for Modelling and Correcting Long-QT Syndrome

Best research project in andrology & reproductive genetic fields

- **Sophie Rousseaux,** France
  Male Genome Programming, Infertility and Cancer

Best research project in female infertility field

- **Christiani Andrade Amorim,** Belgium
  New Steps Towards the Artificial Ovary

Best research project in embryology & biotechnology fields

- **Guoping Fan,** USA
  Transcriptome Dynamics of Human and Mouse Preimplantation Embryos Revealed by Single Cell RNA-sequencing

Best research project in ethics field

- **Kristien Hens,** Netherlands
  Towards the Transparent Embryo? Dynamics and Ethics of Comprehensive Pre-implantation Genetic Screening

Iranian Winners:

- **Seyedeh Nafiseh Hassani**
  The Augmented BMP Pluripotency Pathway via TGF-β Suppression Maintains the Ground State of Embryonic Stem Cells Self-Renewal

- **Rouhollah Fathi**
  Optimal Strategy Toward Fertility Preservation: *in vivo* and *in vitro* Post-thaw Options in Gamete, Embryo and Ovarian Tissue Cryostorage

The Sixteenth ROYAN International Research Award

Reproductive Biomedicine, Stem Cell Biology & Technology

16

September 2015

Received Papers: 204

International Winners:

Best research project in female infertility field

- **Geetanjali Sachdeva**, India
  Endometrial Secretome and Its Role in Uterine Functions

Best research project in embryology field

- **Priyanka Parte,** India
  Tubulin Reversible Acetylation – Driving the Moves and the Moves Behind the Drive

Best research project in biotechnology field

- **Zhang,** USA
  Identifying and Overcoming an Epigenetic Barrier for SCNT Reprogramming

Best research project in reproductive genetic field

- **Masoud Zamani Esteki,** Belgium
  Concurrent Whole-Genome Haplotyping and Copy Number Profiling of Single Cells

Best research project in stem cell biology and technology field

- **Guoliang Xu,** China
  DNA Oxidation Towards Totipotency in Mammalian Development

Iranian Winners:

- **Maryam Shahhoseini**
  Expression Profile of Macrophage Migration Inhibitory Factor (MIF) Signaling Pathway as a Potentional Biomarker in Pathophysiology of Endometriosis

- **Morteza Mahmoudi**
  Bioinspired Substrates Direct the Fate of Stem Cells

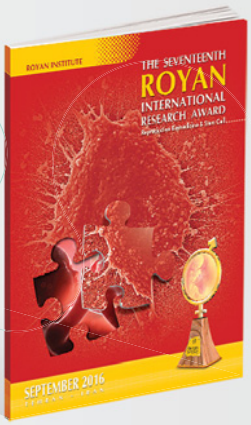
The Seventeenth

ROYAN

International Research Award

Reproductive Biomedicine, Stem Cell Biology & Technology

17



September 2016

Received Papers: 175

International Winners:

Best research project in biotechnology field

- **Jianguo Zhao,** China
  High Efficient Genome Editing in Pigs for Making Human Disease Models

Best research project in embryology field

- **Peter Koopman,** Australia
  Validation of Retinoic Acid as the Master Inducer of Meiosis in Fetal Germ Cells

Best research project in regenerative medicine field

- **Mohammad Sharif Tabebordbar,** USA
  In vivo DMD Gene Editing in Muscles and Muscle Stem Cells of Dystrophic Mice

Best research project in reproductive genetic field

- **Miguel Ramalho-Santos,** USA
  Hira-Mediated H3.3 Incorporation Is Required for DNA Replication and Ribosomal RNA Transcription in the Mouse Zygote

Best research project in stem cell biology and technology field

- **Xiaohua Shen,** China
  Cis-regulatory Roles of lncRNAs in Transcription Regulation and Stem Cell Differentiation

Iranian Winners:

- **Mohsen Sharafi**
  Optimization of Domestic Animal Sperm Freezing Using Novel Plant-Origin Cryopreservation Media

- **Anahita Mohseni Meybodi**
  Beneficial Application of Molecular Cytogenetics in Delineation of Chromosomal Abnormalities Involved in Male Infertility: From Rare to Care

- **Kamran Ghaedi**
  Utilization of Pioglitazone as a Novel Approach to Increase the Colony Formation Efficiency of Individualized Human Pluripotent Stem Cells

The Eighteenth ROYAN International Research Award

Reproductive Biomedicine, Stem Cell Biology & Technology

18

September 2017

Received Papers: 239

International Winners:

Best research project in stem cell biology and technology field

- **Thomas Braun**, Germany
  Compaction of Chromatin Seals Quiescence of Muscle Stem Cells

Best research project in embryology field

- **David Greening,** Australia
  Exosomes: A New Paradigm in Embryo-Maternal Cross-Talk for Successful Implantation

Best research project in regenerative medicine field

- **Riccardo Fodde,** Neatherlands
  Diet, Inflammation, and Stem Cells: Trading off Regenerative Response with Cancer Risk

Best research project in reproductive genetic field

- **Kaei Nasu,** Japan
  Roles of Aberrantly Expressed microRNAs in Endometriosis

Best research project in female infertility field

- **Khaleque Khan,** Japan
  Molecular Detection of Intrauterine Microbial Colonization in women with Endometriosis

Iranian Winners:

- **Mahnaz Ashrafi**
  Assisted Reproductive Outcomes in Women with Different Polycystic Ovary Syndrome Phenotypes: The Predictive Value of Anti-Müllerian Hormone

- **Fereshteh Esfandiari**
  in vitro Generation of Meiosis-Competent Germ Cells from Embryonic Stem Cells by Engineering the Delivery of BMP4

- **Mahdi Sheikh**
  Granulocyte Colony Stimulating Factor in Repeated IVF Failure: A Randomized Trial

- **Hossein Ghanbarian**
  RNA-Directed Programming of Embryonic Stem Cell

- **Kambiz Gilani**
  Untargeted Metabolomic Profiling of Seminal Plasma in Non-obstructive Azoospermia Men: A Non-invasive Detection of Spermatogenesis

The Nineteenth

ROYAN

International Research Award

Reproductive Biomedicine, Stem Cell Biology & Technology

19

August 2018

Received Papers: 191

International Winners:

Best research project in stem cell biology and technology field

- **SaverioBellusci**, Germany
  Two-Way Conversion Between Lipogenic and Myogenic Fibroblastic Phenotypes Marks the Progression and Resolution of Lung Fibrosis

Best research project in embryology & andrology fields

- **Reza Nosrati,** Australia
  Microfluidics for Male Fertility

Best research projects in reproductive genetic field

- **Pradeep Kumar**, India (share Winner)
  Epigenetic Regulation of Coding and Non-coding RNA Expression During the 1st Wave of Spermatogenesis

- **Amir Amiri-Yekta**, Iran (Share Winner)
  Genetics and Molecular Characterization of the Multiple Morphological Abnormalities of the Sperm Flagella (MMAF) Syndrome

Best research project in female infertility field

- **Teresa Kaye Woodruff**, USA
  A Bioprosthetic Ovary Created Using 3D Printed Microporous Scaffolds Restores Ovarian Function in Sterilized Mice

Best research project in biotechnology field

- **Ali FouladiNashta**, UK
  Impact of Sperm Hyaluronidase and VLMWHA on Sheep Blastocyst Formation *in vitro*, Viability After Cryopreservation and Pregnancy Rate After Embryo Transfer

Iranian Winners:

- **Sarah Rajabi**
  Bioengineering of a Humanized Heart by Seeding of hiPSC-Derived Cardiovascular Progenitor Cells into Growth Factor-Tethered Rat Heart Matrix

- **Mazdak Razi**
  Antioxidant, Anti-inflammatory and Testosterone Therapy Reinforces Spermatogonial Stem Cells Self-Renewal in Experimentally-Induced Varicocele; Possible Mechanisms

The Twentieth ROYAN International Research Award

Reproductive Biomedicine, Stem Cell Biology & Technology

20

August 2019

Received Papers: 67

International Winner:

Best research project in Reproductive Biomedicine field

- **Jemma Evans**, Australia
  The Negative Impact of Obesity Associated Advanced Glycation End Products on Female Fertility

Iranian Winner:

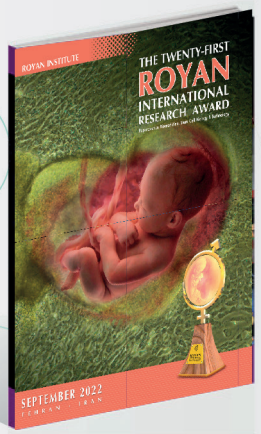
- **Mehdi Totonchi**
  Application of Genomic Studies in Uncovering Sperm Defects Mechanisms

The Twenty-Frist

ROYAN

International Research Award
Reproductive Biomedicine, Stem Cell Biology & Technology

21



September 2022

National Winners:

Stem Cell Biology and Technology

- **Mehdi Jaymand**
  Electrically Conductive Scaffolds for Tissue Engineering: Advantages, Challenges, and Perspectives
- **Iman Shabani**
  Development of Bioactive Dopants to Design PANI-Based Conductive Scaffolds for Tissue Engineering Applications

Reproductive Biomedicine

- **Marziyeh Tavalaee**
  Could Artificial Oocyte Activation Following ICSI Improve Fertilization and Pregnancy in Couples with Male Factor Infertility

Selected Iranian Scientist

Stem Cell Biology and Technology

- **Omid Mashinchian**, Switzerland
  An Engineered Multicellular Stem Cell Niche for Studying Disease, Aging and Regeneration

Reproductive Biomedicine

- **Ali Honaramooz**, Canada
  The Application of Animal Models in Preservation of Male Fertility

The Twenty-Second ROYAN International Research Award

Reproductive Biomedicine, Stem Cell Biology & Technology

22

September 2023

National Prominent Senior Scientists

Stem Cell Biology and Technology

- **Seyed Ali Malek-Hosseini**

Biotechnology

- **Fereidoun Mahboudi**

Reproductive Biomedicine

- **Abbas Aflatoonian**

National Prominent Junior Scientists

Stem Cell Biology and Technology

- **Seyed Ehsan Enderami**

Reproductive Biomedicine

- **Amir Fattahi**

Biotechnology

- **Esmaeil Mirzaie**

The Twenty-Third

ROYAN

International Research Award
The Sixth Kazemi Prize

23

September 2024

Kazemi Prize Winners

- **Thomas Braun,** Germany

Requirements of Stem Cell-Mediated Skeletal Muscle Regeneration

- **Nikolas Rivron,** Austria

Blastoids: Modeling Blastocyst Genesis and Implantation with Stem Cells

2025

THE TWENTY-FOURTH

ROYAN

INTERNATIONAL
RESEARCH AWARD

Table of Titles

	Lastname, First Name	Country	Title
1.	**Ajdary, Marziyeh**	Iran	Angiogenic Lipid-Based Drug Delivery System (PhytoSolve) for Treatment of a Thin Endometrium in Animal Model
2.	**Ajdary, Marziyeh**	Iran	Investigation of HSD3B, StAR, CYP11A1 Proteins in Plasma Levels of Endometriosis Patients Treated with Dienogest
3.	**Arjmand, Fateme**	Iran	Evaluation of the Effects of Extracellular Vesicles Derived from Adipose Tissue Mesenchymal Stem Cells on a Mouse Model of Primary Ovarian Insufficiency (POI): Histology, and the Expression of Key Genes in the Folliculogenesis Process
4.	**Attar, Armin**	Iran	Prevention of Acute Myocardial Infarction-Induced Heart Failure by Intracoronary Infusion of Mesenchymal Stem Cells: A Phase III Randomized Clinical Trial (PREVENT-TAHA8)
5.	**Boiani, Michele**	Germany	New Facets of Zona Pellucida(ZP) Proteins: Called Oocyte-Specific, Yet Produced by the Preimplantation Embryo and Needed for Blastocyst Formation
6.	**Daemi, Hamed**	Iran	Sulfated Alginate-Based Scaffolds for Engineering of Soft Tissues
7.	**Dahan, Michael**	Canada	The Role of PCOS on Pregnancy Complications
8.	**Deneke, Victoria**	Austria	A Conserved Fertilization Complex Bridges Sperm and Egg in Vertebrates
9.	**Ebrahimi Warkiani, Majid**	Australia	AI-Powered Solutions for Male Infertility
10.	**Esmaeilivand, Masoumeh**	Iran	MicroRNAs in the Blastocoel Fluid as Accessible Indicators of Chromosomal Normality
11.	**Fathi, Helia**	Iran	Investigating the Effect of sumatriptan on Spermatogenesis, Testosterone Levels and Oxidative Stress Factors in NMRI Male Rats
12.	**Fesahat, Farzaneh**	Iran	Modulation of NRF2 and CYP24A1 Pathways by Hookah Smoke: Implications for Male Reproductive Health
13.	**Firouzabadi, Amir Masoud**	Iran	Possible Impact of Human β-defensin 1 on Sperm Motility in Infertile Men with Abnormal Sperm Parameters
14.	**Fodde, Riccardo**	Netherlands	Western Lifestyles, Metaflammation, and the Cell-of-Origin of Colon Cancer
15.	**FRUNGIERI, MONICA**	Argentina	Testicular Aging: Impact of Melatonin on the Inflammatory-Oxidative Status
16.	**FRUNGIERI, MONICA**	Argentina	Impact of COVID-19 on Sperm and the Seminal Fluid
17.	**Ghanian, Mohammad Hossein**	Iran	Earlier Detection of Alzheimer's Disease Based on a Novel Biomarker cis P-tau by a Label-Free Electrochemical Immunosensor

Table of Titles

	Lastname, First Name	Country	Title
18.	**govahi, azam**	Iran	Changes in the Transcriptomic Profile of Cumulus Cells Under the Influence of Cumulus-Oocytes Complex Pre-Incubation
19.	**govahi, azam**	Iran	Study of CGRP and ENA-78 Gene Expression and Related MiRNAs in Patients with Endometriosis
20.	**Haddadi, Parinaz**	Iran	Induction of Experimentally Induced Mouse AD Model
21.	**Haddadi, Parinaz**	Iran	Evaluated of the Effect of Astrocytes-Derived Exosome on Neurogenesis by Experimentally Induced Mouse AD Model
22.	**Haddadi, Parinaz**	Iran	Induction of Experimentally Induced Mouse AD Model
23.	**Hadinedoushan, Hossein**	Iran	The Role of Inflammasome Dysregulation in Obstructive and Non-obstructive Azoospermia: A Comparative Molecular Analysis of Blood, Tissue, and Seminal Plasma
24.	**Hallak, Jorge**	Brasil	A Novel Role for the Sperm Cell in Immunity: Discovery of Sperm DNA-Extracellular Trap-Like Structures (SETs-L) Beyond Reproduction
25.	**Hallak, Jorge**	Brasil	Transmission Electron Microscopy Reveals the Presence of SARS-CoV-2 in Human Spermatozoa Associated with an ETosis-Like Response
26.	**Halvaei, Iman**	Iran	Evaluation of the Effect of Lecithin and Nanolecithin in repairing membrane Damage, Maintaining Membrane Integrity, and Improving Human Sperm Function in the Freezing–Thawing Process
27.	**harimi, samaneh**	Iran	Hsa-miR-15b-5p/miR-195-5p Controls Osteogenic Differentiation of Human Adipose-Derived Mesenchymal Stem Cells Through Regulating Indian Hedgehog Expression
28.	**Heidari Khoei, Heidar**	Austria	Stem Cell-Based Human Embryo Model (Human Blastoid) as a Tool for Understanding Early Embryogenesis
29.	**Heidari Khoei, Heidar**	Austria	The Role of mTOR Signaling in Human Blastocyst development and Implantation
30.	**Horta Nunez, Fabrizzio**	Australia	Creating A Transformative Strategy for Infertility Treatments By Assessing Gamete And Embryo Metabolism Via Novel Non-Invasive Metabolic Imaging, Lab On-A-Chip & Artificial Intelligence Technologies
31.	**Hosseini, Seyed Amir**	United Kingdom	Perturbing LSD1 and WNT rewires transcription to synergistically induce AML differentiation
32.	**Hosseini, Kobra**	Iran	Dynamic Ovarian Markers for Predicting ART Success: A Systematic Review and Meta-Analysis
33.	**Ibrahim, Abubakar**	Malaysia	Design Placentation: Elaborating the Mechanism of Peri-Implantation Sexual Intercourse and Oxidative Stress: A Randomised Controlled Trial

Table of Titles

	Lastname, First Name	Country	Title
34.	**Karimi, Mahdi**	Iran	Mechanism and Antibacterial Synergies of Poly(Dabco-BBAC) Nanoparticles Against Multi-Drug Resistant Pseudomonas Aeruginosa Isolates from Human Burns
35.	**Kashir, Junaid**	United Arab Emirates	The Mammalian Sperm Factor Phospholipase C Zeta Is Critical for Early Embryo Division and Pregnancy in Humans and Mice
36.	**Mansouri, Kamran**	Iran	Human Placental Mesenchymal Stromal Cell-Derived Small Extracellular Vesicles as a Treatment for Severe COVID-19: A Double-Blind Randomized Controlled Clinical Trial
37.	**Mansouri, Kamran**	Iran	Improvement in the Clinical Manifestations of Interstitial Lung Disease Following Treatment with Placental Mesenchymal Stromal Cell Extracellular Vesicles in a Patient with Systemic Sclerosis: A Case Report
38.	**Mansouri, Kamran**	Iran	Treatment of Persistent Chemotherapy-Induced Hair Loss (Alopecia) with Human Mesenchymal Stromal Cells Exosome Enriched Extracellular Vesicles: A Case Report
39.	**Mirsanei, Jamileh sadat**	Iran	Mesenchymal Stem Cell-Derived Extracellular Vesicles Restore Spermatogenesis in Busulfan-Induced Azoospermia
40.	**MirzaKarimi, Zahra**	Iran	The Effect of Aframomum Malagueta Extract on the Health of Sperm Genetic Material in Asthenospermic Patients
41.	**Moghadasali, Reza**	Iran	Enhancing Maturity in 3D Kidney Micro-Tissues Through Clonogenic Cell Combinations and Endothelial Integration
42.	**Moghadasali, Reza**	Iran	Enriched Human Embryonic Stem Cells-Derived CD133þ, CD24þ Renal Progenitors Engraft and Restore Function in a Gentamicin-Induced Kidney Injury in Mice
43.	**Moghassemi, Saeid**	Belgium	ex vivo purging of cancer cells from Ovarian Tissue Using Photodynamic Therapy: A Novel Strategy to Restore Fertility in Leukemia Patients
44.	**momen, razieh**	Iran	Magnetic Melamine Cross-Linked Polystyrene-alt-Malic Anhydride Copolymer: Synthesis, Characterization, Paclitaxel delivery, Cytotoxic Effects on Human Ovarian and Breast Cancer Cells
45.	**Pluchino, Stefano**	United Kingdom	Early-Stage Brain Stem Cell Therapy for Treating Progressive Multiple Sclerosis
46.	**Pluchino, Stefano**	United Kingdom	Patient Stem Cell Models of Multiple Sclerosis
47.	**Rasouli-Saravani, Ashkan**	Iran	Effects of miR-29-Enriched Amniotic Fluid EVs on Fibrosis, Intrauterine adhesions, and the rate of embryo Implantation in Asherman Syndrome

Table of Titles

	Lastname, First Name	Country	Title
48.	**Rasouli-Saravani, Ashkan**	Iran	Effects of miR-29-Enriched Human Amniotic Fluid Extracellular Vesicles (hAF-EVs) on Fibrosis, Intrauterine Adhesions, and the Rate of Embryo Implantation in Asherman Syndrome Mice Model
49.	**Sadeghi Abandansari, Hamid**	Iran	Topical Administration of Mucoadhesive Liposomes–Epoetin-β for Targeting the Ocular Posterior Segment
50.	**Sadeghi Abandansari, Hamid**	Iran	Switchable PAMAM Megamers for Deep Tumor Penetration and Enhanced Cell Uptake
51.	**Sahab Negah, Sajad**	Iran	Nano-scaffold Containing Functional Motif of Stromal Cell-Derived Factor 1 Enhances Neural Stem Cell Behavior and Synaptogenesis in Traumatic Brain Injury
52.	**Seyed Hosseini, Parsa**	Iran	Reporting Binding Process of Atropine to Human Serum Albumin
53.	**Sheibak, Nadia**	Iran	Evaluation of Microfluidic Chip Efficiency for Human Sperm Sorting and Comparison of the Resulting Sperm Quality with Density Gradient Centrifugation and Swim-Up Methods in Men with Normal and Abnormal Sperm Parameters
54.	**Tehrani, Fahimeh**	Iran	Association Between Anti-Mullerian Hormone Levels and Age in Women with Endometriosis: Insights from a Population-Based Study
55.	**Tehrani, Fahimeh**	Iran	Elucidating the Genetic Architecture of Early Menopause in Tehran Cardiometabolic Genetic Study
56.	**Towhidi, Armin**	Iran	Application of Nanotechnology in Sperm Cryopreservation: Lecithin Ultrastructures
57.	**Vahidi, Bahman**	Iran	In Silico Analysis of a Parallel Plate Bioreactor to Reveal Effects of Oscillatory Flow on Stem Cells for Bone Tissue Engineering Applications
58.	**Vosough, Massoud**	Iran	MiR-29a-Laden Extracellular Vesicles Efficiently Induced Apoptosis Through Autophagy Blockage in HCC Cells
59.	**Winuthayanon, Wipawee**	United States	Progesterone Signaling in Oviductal Epithelial Cells Modulates the Immune Response to Support Preimplantation Embryonic Development
60.	**Yadav, Savita**	India	Deciphering the Male Contribution to Idiopathic Recurrent Pregnancy Loss: Proteomic and microRNA Signatures in Human Spermatozoa
61.	**Zamani Esteki, Masoud**	Netherlands	Intelligent and Non-invasive Embryo Selection: A New Paradigm in Assisted Reproduction to Enhance Embryo Selection
62.	**赵, 涵**	China	Genetic Aspects of Infertility and Its Treatment

2025 International Winner

Stem Cell Biology and Technology

Heidar Heidari Khoei, DVM, PhD
heidarheidari@yahoo.com
Austria

Dr. Heidari Khoei is a reproductive biologist and embryologist whose research focuses on early human development, particularly self-organization, lineage specification, and embryo–endometrium interactions. Using advanced stem cell-based models such as human blastoids, he has uncovered human-specific developmental mechanisms previously inaccessible, with first-author publications in leading journals including Nature, Cell, and Nature Protocols.
He received his Ph.D. in Reproductive Biology with highest distinction from Shahid Beheshti University of Medical Sciences and Royan Institute, and is currently a postdoctoral fellow in Nicolas Rivron's lab at the Institute of Molecular Biotechnology (IMBA), Vienna. His work has been recognized with prestigious fellowships such as the Marie Skłodowska-Curie and Lise Meitner awards, and he is a co-inventor on a European patent for generating blastocyst-like structures. His long-term aim is to bridge developmental biology and translational science to advance reproductive health.

Stem Cell-Based Human Embryo Model (Human Blastoid) as a Tool for Understanding Early Embryogenesis

Objective/Background :
Human early embryonic development remains difficult to study due to ethical and technical limitations. To address this, we developed a stem cell-based model of the human blastocyst, termed blastoids, which closely mimic preimplantation embryos in morphology, lineage specification, and implantation capacity. These models provide an ethical and scalable platform for studying fundamental developmental processes. In this study, we leveraged human blastoids to investigate the role of the mechanistic target of rapamycin (mTOR) pathway in regulating blastocyst dormancy and implantation potential. Understanding how mTOR signaling modulates early embryonic states could lead to improved fertility treatments and embryo preservation strategies.

Materials & Methods :
We generated human blastoids from naïve pluripotent stem cells (hPSCs) using a chemically defined protocol that promotes self-organization into trophectoderm (TE), epiblast (EPI), and primitive endoderm (PrE) analogs. These structures were then subjected to pharmacological mTOR inhibition to induce a putative dormant state. We characterized the effects of mTOR suppression on blastoid growth, transcriptional dynamics, metabolic activity, and implantation capacity using single-cell RNA sequencing, immunofluorescence, and an in vitro implantation assay with hormonally primed endometrial organoids.

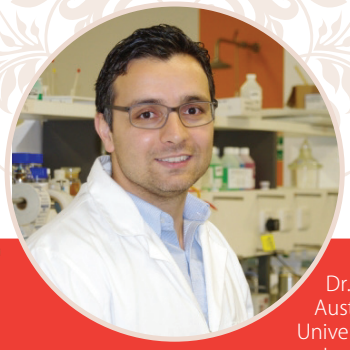
RESULTS:
Blastoids efficiently recapitulated early blastocyst development, displaying characteristic cystic structures, inner cell mass (ICM)-like clusters, and TE monolayers. Immunostaining and transcriptomic profiling confirmed that blastoids followed a developmental trajectory comparable to natural blastocysts, with sequential emergence of TE and EPI, followed by PrE differentiation. Functionally, blastoids exhibited the ability to attach to and interact with hormonally primed endometrial cells, modeling early implantation dynamics.
Upon mTOR inhibition, blastoids exhibited a reversible dormancy-like state, characterized by arrested growth, reduced metabolic activity, and delayed lineage progression. While dormant blastoids retained lineage-specific identities, they displayed impaired polar trophectoderm (pTE) maturation, which is crucial for implantation. Notably, when mTOR inhibition was lifted, blastoids reactivated their developmental program, resuming growth, metabolic activity, and restoring their implantation potential. Transcriptomic analysis revealed that mTOR-inhibited blastoids shared molecular signatures with naturally occurring diapause embryos in other mammals, supporting the hypothesis that early human embryos may possess an intrinsic capacity for dormancy.

CONCLUSION:
This study demonstrates that stem cell-derived blastoids provide a powerful model to investigate key regulatory pathways in early human development. By modulating mTOR signaling, we reveal an intrinsic ability of human blastoids to enter and exit a dormancy-like state, offering new insights into blastocyst survival mechanisms. These findings have significant implications for enhancing embryo culture conditions in IVF, optimizing embryo preservation, and improving implantation outcomes in ARTs.

Keywords :
Human Blastoids, mTOR Signaling, Blastocyst Dormancy, Early Embryo Development, Assisted Reproduction

International Winner 2025

Reproductive Biomedicine



Majid Ebrahimi Warkiani, PhD
m.ebrahimi.w@gmail.com
Australia

Dr. Majid E. Warkiani is a Professor in the School of Biomedical Engineering at UTS, Sydney, Australia. He earned his PhD in Mechanical Engineering from Nanyang Technological University (NTU, Singapore) under the prestigious SINGA scholarship from A*STAR and completed his postdoctoral training at Massachusetts Institute of Technology (MIT, USA). Throughout his career, he has held fellowships from NRF (2014-2012), NHMRC (2022-2018) and Cancer Institute NSW (2025–2022). Currently, his research focuses on microfluidics, organ-on-a-chip technologies, and 3D micro-printing. His outstanding research contributions have earned him several awards, including the Young Tall Poppy Science Award (2019), MIT Technology Review-Innovators under 35 Award (2016), and the Nanyang Young Alumni Award (2017). Since 2010, he has published 200 peer-reviewed scientific articles and book chapters in premier journals such as Nature Protocols, Nature Communications, Nature Reviews Urology, Advanced Materials, Trends in Biotechnology, ACS Nano, and Lab on a Chip. Dr. Warkiani is not only a prominent researcher but also a valued member of various biotech companies' advisory boards. Additionally, he actively contributes to the academic community by serving as a guest editor and reviewer for esteemed journals such as Scientific Reports, Nature Biomedical Engineering, Lab on a Chip, and Micromachines.

AI-Powered Solutions for Male Infertility

Objective/Background :

Male infertility is a rising global health issue, with sperm counts declining by over %50 in the last 50 years. Today, male factors contribute to infertility in over half of all cases, with non-obstructive azoospermia (NOA)—the complete absence of sperm in the ejaculate due to testicular failure—being the most severe form. NOA affects up to %20 of infertile men and poses a significant clinical challenge. The current gold-standard treatment, microdissection testicular sperm extraction (mTESE), requires embryologists to manually search testicular tissue under a microscope for hours to locate rare sperm cells. This process is inefficient, error-prone, and mentally taxing, often leading to missed sperm and inaccurate diagnoses.

To address this critical bottleneck in male infertility care, this study investigates the use of an assistive AI tool based on a neural network (CNN) to automate and enhance sperm detection in real time. The system integrates with standard ICSI microscopes to support embryologists by identifying spermatozoa in complex tissue suspensions instantly. By improving speed, accuracy, and throughput, this AI-assisted approach aims to transform the clinical workflow for NOA patients and offer a scalable solution to a growing global reproductive health burden.

To address this critical bottleneck in male infertility care, this study investigates the use of an assistive AI tool based on a neural network (CNN) to automate and enhance sperm detection in real time. The system integrates with standard ICSI microscopes to support embryologists by identifying spermatozoa in complex tissue suspensions instantly. By improving speed, accuracy, and throughput, this AI-assisted approach aims to transform the clinical workflow for NOA patients and offer a scalable solution to a growing global reproductive health burden.

Materials & Methods :

This two-phase proof-of-concept study began with a training phase using eight azoospermic patients (>10,000 sperm images) to provide a variety of surgically collected samples for sperm morphology and debris variation to train a convolutional neural network to identify spermatozoa. Second, side-by-side testing was undertaken on two cohorts of non-obstructive azoospermia patient samples: an embryologist versus the AI identifying all the spermatozoa in the still images (cohort 1, n=4), and a side-by-side test with a simulated clinical deployment of the AI model with an intracytoplasmic sperm injection microscope and the embryologist performing a search with and without the aid of the AI (cohort 2, n=4).

RESULTS:

In cohort 1, the AI model showed an improvement in the time taken to identify all the spermatozoa per field of view ($\times$ 0.30 $\pm$ 0.02 5–10s versus 1.18 $\pm$ 36.10s, $P < 0.0001$) and improved recall (%0.81 $\pm$ 91.95 versus %1.34 $\pm$ 86.52, $P < 0.001$) compared with an embryologist. From a total of 2660 spermatozoa to find in all the samples combined, 1937 were found by an embryologist and 1997 were found by the AI in less than 1000th of the time. In cohort 2, the AI-aided embryologist took significantly less time per droplet (3.19 $\pm$ 98.90 s versus 7.84 $\pm$ 168.7 s, $P < 0.0001$) and found 1396 spermatozoa, while 1274 were found without AI, although no significant difference was observed.

CONCLUSION:

AI-powered image analysis has the potential for seamless integration into laboratory workflows, to reduce the time to identify and isolate spermatozoa from surgical sperm samples from hours to minutes, thus increasing success rates from these treatments.

Keywords :

Azoospermia, Male infertility, Microdissection testicular sperm extraction, Spermatozoa, Surgical sperm collection

2025 National Winner

Reproductive Biomedicine

Masoumeh Esmaeilivand, PhD
m.esmaeilivand@gmail.com
Iran

Dr. Masoumeh Esmaeilivand holds a Ph.D. in Reproductive Biology with a research focus on molecular embryology and the diagnostic and therapeutic applications of microRNAs in infertility. She is currently a faculty member in the Department of Obstetrics and Gynecology at Kermanshah University of Medical Sciences and serves as a clinical embryologist at the Infertility Center of Mo'tazedi Hospital. Her main research interests include the role of miRNA biomarkers in embryo selection, the development of non-invasive ART methods, and the molecular regulation of gametes and early embryonic development.

microRNAs in the Blastocoel Fluid as Accessible Indicators of Chromosomal Normality

Objective/Background :
MicroRNAs (miRNAs) derived from the pre-implantation blastocoel fluid (BF) have attracted interest as accessible biomarkers indicative of embryonic health in ongoing IVF cycles. Therefore, we investigated expression levels of some aneuploidy-associated miRNAs and implantation-related mRNAs as predictive markers for embryo chromosomal normality.

Materials & Methods :
In this study, the BF of 25 blastocysts that had been checked for aneuploidy (aneuploid=17 and euploid=8) was aspirated and the expression of 10 miRNAs (miR-20a, miR-30c, miR-661, miR-372, miR-142, miR-191, miR-345, miR-339, miR-141, and miR-27b) and four genes (ERBB4, SELL, ITGB3, ITGAV) were evaluated using real time-PCR.

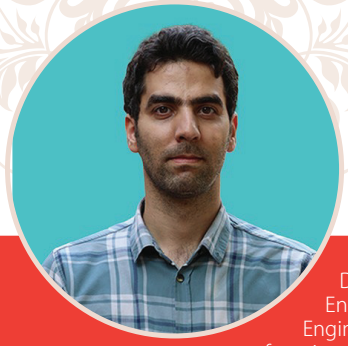
RESULTS:
Results showed that the levels of miR-661 and miR-20a were significantly higher in the BF of the aneuploid embryos compared to the euploid group ($p = 0.0017$ and 0.004, respectively). A comparison of the mRNA levels between the aneuploid and euploid groups also demonstrated a significant difference in ITGAV ($p = 0.013$) and SELL ($p = 0.0317$) levels. In the euploid group, a negative correlation was found between ITGB3 and miR-30c ($r = -0.71$, $p = 0.08$), and in the aneuploid group, a positive correlation was found between ERBB4 and miR-345 ($r = 0.71$, $p = 0.02$).

CONCLUSION:
It can be suggested that miR-20a, miR-661, and ITGAV levels of BF could be used as less-invasive biomarkers to evaluate embryonic health. Moreover, aneuploidy-related miRNA levels were associated with levels of genes involved in embryo implantation.

Keywords :
blastocoel fluid, miRNAs, in vitro fertilization, implantation, biomarker

National Winner 2025

Stem Cell Biology and Technology



Hamed Daemi, PhD
h.daemi@royaninstitute.org
Iran

Dr. Hamed Daemi is an Assistant Professor of Polymer Engineering and head of the Tissue Engineering Group at the Royan Institute, Tehran. He earned his Ph.D. in Polymer Engineering from the Iran Polymer and Petrochemical Institute with highest distinction, focusing on polyurethane and alginate nanostructures for catalytic and biomedical applications. His research expertise spans polymer chemistry, functional materials, nanocomposites, smart hydrogels, and tissue engineering, with particular emphasis on engineering skin, cartilage, and cardiovascular tissues, as well as developing advanced polymers for drug delivery and wound healing. He has supervised numerous graduate students and has been actively involved in the commercialization of smart polymeric wound dressings and skin substitutes.
Dr. Daemi has published extensively in high-impact journals such as Biomaterials, Materials Today, Carbohydrate Polymers, and RSC Advances. He is the recipient of multiple national and international awards, including the Khwarizmi Young Award and recognition from the Iran Polymer Society and the Royan Institute as a top researcher. His work has also resulted in several patents on alginate-based polyurethanes, green catalysts, and polymeric biomaterials. In addition to his scientific achievements, he has contributed to more than 40 conference presentations and plays an active role in scientific societies, including the Iran Polymer Society and the National Foundation of Exceptional Talents.

Sulfated Alginate-Based Scaffolds for Engineering of Soft Tissues

Objective/Background :
Design and synthesis of sulfated alginate-based engineered constructs including hydrogels, films, and nanofibrous mats are of interest as available, renewable and low-cost biomaterials for engineering of different soft tissues. These constructs could trigger main activities of the cells including cell proliferation, migration, differentiation and also tissue repair. In this regard, our primary focus centers on unraveling the pivotal role of the sulfated alginate as a constituent of scaffolds on cell and tissue behaviors.

Materials & Methods :
The sulfated alginate solely or in combination with other materials has been employed to be evaluated in point of its role on cell activities of different cells including fibroblasts, endothelial cells, macrophages, mesenchymal stem cells, islets and etc. For this aim, sulfated alginate was physically or chemically modified by calcium cations, isocyanate-based or/and vinyl-functionalized polyurethane, methacrylated chitosan, and carbodiimide chemistry. All of the sulfated alginate-based constructs including hydrogels, nanofibrous mats, and microparticles were first both physically and chemically characterized by FTIR, NMR, CHNS elemental analysis, EDX mapping, and etc. After that, different in vitro analyses including cell viability, scratch assay, cell adhesion, hemocompatibility, protein adsorption and ⋯, were performed on resulting engineered constructs. Finally, different in vivo experiments were performed in accordance with the guidelines established by the acquired centers, and histological and immunohistological aspects of the healed tissues were studied.

RESULTS:
Appearance of carboxylate, sulfate and methacrylate functional groups at 1680-1650 cm-1270-1260 ,1 cm-1, and 1730-1700 cm-1 confirmed chemical structure of sulfated alginate and its derivatives. Further characterization by NMR spectroscopy and elemental analysis confirmed the successful sulfation, methacrylation, and urea formation in chemical structure of sulfated alginate and final engineered constructs by appearance of the characteristic peaks at 6.2-5.8 ppm and 4.7-4.5 ppm. The results of both indirect and direct MTT assays showed appropriate cytocompatibility for all constructs. In addition, the results of histopathological analyses of engineered constructs as wound dressing, cell carrier and tough hydrogel well showed proper biocompatibility against control samples.

CONCLUSION:
The appearance of deterministic bands, peaks, and required elements and functional groups in chemical structure of these constructs confirmed the chemical structure of proposed biomolecules by abovementioned techniques. The microstructure of the engineered constructs was studied by microscopic instruments like SEM analysis, and the nanofibrous or microporous structure of each construct was approved. Based on the in vitro cytotoxicity experiments, the scaffolds not only showed no cytotoxicity, but the cell growth and migration also dramatically increased by increasing the sulfated alginate content. The ability of prepared constructs as hydrogel to promote wound healing process in diabetic animals, as nanofibrous mats to be used as functional tissue-engineered small-diameter vascular grafts, as double network hydrogel to mitigate fibrosis for long-term glycemic control in diabetic mice, and finally, as microparticle to promote articular cartilage tissue regeneration in rabbits revealed significant role of sulfated alginate as a bioactive semi-synthetic polysaccharide for regeneration of soft tissues.

Keywords :
Sulfated alginate - Tissue Engineering - Soft tissues

Royan Award Board

JURIES

Last Name, First Name, Degree	Country
Afsharian, Parvaneh, PhD	Iran
Aghdami, Nasser, MD, PhD	Iran
Ahmadi, Firoozeh, MD	Iran
Alipour, Hiva, DVM, PhD	Denmark
AlizadehMoghadam, Alireza, PhD	Iran
Almadani, Seyed Navid, MD	Iran
Amirchaghmaghi, Elham, MD, PhD	Iran
Amiri-Yekta, Amir, PhD	Iran
Baghaban Eslaminejad, Mohamadreza, PhD	Iran
Bagheri, Fatemeh, PhD	Iran
Baharvand, Hossein, PhD	Iran
Bazrgar, Masoud, PhD	Iran
Dalman, Azam, PhD	Iran
Dormiani, Kianoush, PhD	Iran
Ebrahimi, Marzieh, PhD	Iran
Eftekhari-Yazdi, Poopak, PhD	Iran
Esfandiari, Fereshte, PhD	Iran
Esmaeeli, Vahid, PhD	Iran
Fathi, Rouhollah, PhD	Iran
Ghaffari, Firouzeh, MD	Iran
Ghezelayagh, Zahra, PhD	Iran
Goodarzian, Maedeh, MD	Iran
Gourabi, Hamid, PhD	Iran
Greening, David, PhD	Australia
Hafezi, Maryam, MD	Iran
Hajian, Mahdi, PhD	Iran
HajiZadeh Saffar, Ensieh, PhD	Iran
Hassani, Seyedeh-Nafiseh, PhD	Iran
Hassani, Fatemeh, PhD	Iran
Homayouni Moghaddam, Farshad, PhD	Iran
Hosseini, Roya, MD	Iran
Hosseini, Samaneh, PhD	Iran
Jafarpour, Farnoosh, PhD	Iran
Kalantar, Seyed Mehdi, PhD	Iran
Kamali, Koorosh, MD, MPH, PhD	Iran
Karamali, Fereshteh, PhD	Iran
Khaligh Razavi, Seyed Mahdi, PhD	Iran
Kiani, Sahar, PhD	Iran
Kiani, Kiandokht, PhD	Iran
Madani, Hoda, MD, PhD	Iran
Madani, Tahereh, MD	Iran

Royan Award Board

JURIES

Last Name, First Name, Degree	Country
Maranna, Sandy, FASA, FHEA, AFHERDSA	Australia
Mirahmadi Zare, Zohreh, PhD	Iran
Mohseni, Jafar, PhD	Iran
Moini, Ashraf, MD	Iran
Moradi, Sharif, PhD	Iran
Moshfeghi, Maryam, MD	Iran
Nabavi, Seyyed Masoud, MD	Iran
Ng, Ernest, MD	Hong Kong
Niknejadi, Maryam, MD	Iran
Nowroozi, Mohammad Reza, MD	Iran
Nussler, Andreas, PhD	Germany
Pahlavan, Sara, PhD	Iran
Piemonti, Lorenzo, MD	Italy
Piryaei, Abbas, PhD	Iran
Pourmand, Gholamreza, MD	Iran
Rajabi, Sara, PhD	Iran
Rashidi, Batool, MD	Iran
Rashki, Leila, PhD	Iran
Redi, CarloAlberto, PhD	Italy
Rostami, Sirous, MD	Iran
Sabbaghian, Marjan, PhD	Iran
Sajadi, Hesamoddin, MD	Iran
Sattarian, Leila, PhD	Iran
Shahhosseini, Maryam, PhD	Iran
Taei, Adele, PhD	Iran
Taghiyar, Leila, PhD	Iran
Taheri Panah, Robabeh, MD	Iran
Tavalaee, Marziyeh, PhD	Iran
Tavana, Somayeh, PhD	Iran
Zamanian, Mohammad Reza, MD, PhD	Iran
Zhang, Heping, PhD	USA

Royan Award Board

SCIENTIFIC BOARD

Last Name, First Name, Degree
Afsharian, Parvaneh, PhD
Amirchaghmaghi, Elham, MD, PhD
Ashrafi, Mahnaz, MD
Baghaban-Eslaminezhad, MohammadReza, PhD
Baharvand, Hossein, PhD
Ebrahim, Marzieh, PhD
Fathi, Rouhollah, PhD
Ghaffari, Firouzeh, MD
Ghanian, Mohammad-Hossein, PhD
Gharanfoli, Mohsen, PhD
Gourabi, Hamid, PhD
Hajian, Mahdi, PhD
Hassani, Fatemeh, PhD
Hassani, Seyedeh-Nafiseh, PhD
Kazemi-Ashtiani, Mohammad, PhD
Kiani, Sahar, PhD

Last Name, First Name, Degree
Madani, Hoda,MD, PhD
Moradi, Sharif, PhD
Najjar-Asl, Mostafa, PhD
Nasr-Esfahani, MohammadHossein, PhD
Pahlavan, Sara, PhD
Sabbaghian, Marjan, PhD
Sadighi-Gilani, MohammadAli, MD
Shahverdi, Abdolhossein, PhD
Shahzadeh-Fazeli, Seyed-Abolhassan, MD, PhD
Shiva, Marzieh, MD
Taghiyar, Leila, PhD
Tahamtani, Yasser, PhD
Vosough-Dizaj, Ahmad, MD
Vosough, Massoud, MD, PhD
Zamanian, Mohammad-Reza, MD, PhD

Royan Award Board

SCIENTIFIC COMMITTEE

Last Name, First Name, Degree
Afsharian, Parvaneh, PhD
Amirchaghmaghi, Elham, MD, PhD
Ghanian, Mohammad-Hossein, PhD
Hassani, Fatemeh, PhD
Jafarpour, Farnoosh, PhD
Kazemi-Ashtiani, Mohammad, PhD
Kiani, Sahar, PhD
Madani, Hoda, MD, PhD
Moradi, Sharif, PhD
Pahlavan, Sara, PhD
Sabbaghian, Marjan, PhD
Shiva, Marzieh, MD
Taghiyar, Leila, PhD
Zamanian, Mohammad-Reza, MD, PhD

Royan Award Board

EXECUTIVE COMMITTEE

Last Name, First Name, Degree
Afsharian, Parvaneh, PhD
Amirchaghmaghi, Elham, MD, PhD
Azmakan, Reza, MSc
Bazrgar, Masoud, PhD
Dadkhah, Fatemeh, MSc
Daliri, Leila, MSc
Dalman, Azam, PhD
Eslami, Kosar, BSc
Ezabadi, Zahra, MSc
Farrokh, Sima, BSc
Fathi, Rouhollah, PhD
Ghezelayagh, Zeinab, PhD
Jangkhah, Meysam, PhD
Khadem Sharif, MohammadReza, MA

Last Name, First Name, Degree
Kheiri, Mohammadreza, MSc
Lotfipanah, Mahdi, MA
Mirshekar, Zeynab, BSc
Moradi, Sharif, PhD
NajjarAsl, Mostafa, PhD
Parvini, Nasser, MSc
Shahverdi, Abdolhossein, PhD
Shakeri, Fatemeh, MA
Taghinyia, Saeed, BA
Taheri, Hadis, MSc
Vosough, Ahmad, MD
Vosough, Masood, MD, PhD
Zoghi, Fereshteh, BSc