➢ *Personal Information:*

Surname: **Esfandiari**
First name: **Fereshteh**
Gender: **Female**
Marital Status: **Married**
Children: **1**
Nationality: **Iranian**
Date of birth: **02.08.1986**
Email address: **fereshtehesfandiari@royaninstitute.org**

➢ *Educational background:*

Degree	Major	University	Date	GPA
Ph.D	Cell and Developmental Biology	Royan Institute joint with university of scinece and culture, Tehran, Iran	2011-16	19.53 from 20
M.Sc	Cell and Developmental Biology	Royan Instituite joint with university of scinece and culture, Tehran, Iran	2008-11	18.32 from 20
B.Sc	Biology	Shiraz University	2004-8	18.20 from 20

➢ *Fellowships and training courses:*

1) **Assisted reproductive technologies fellowship**; Sperm preparation, Sperm freezing, Oocyte and embryo freezing, IVF, ICSI, IUI, Embryo transfer, **Royan Institute, Tehran**, Iran (2016-2017)
2) **Advances in stem cell biology course**, **PASTEUR, Paris,** France (Jun 2016)

➢ Employment:

Position	Location	Duration
Assistant Professor	Department of Stem Cells and Developmental Biology, Royan Institute for Stem Cell Biology and Technology	May 2018-Today
Maternity leave		November 2017-April 2018
ART fellowship	Royan clinic for infertility treatment, Royan Institute for Reproductive Biomedicine, ACECR, Tehran, Iran	2016 (Nov)-2017 (Sep)
Group leader for germ cells program	Department of Stem Cells and Developmental Biology, Royan Institute for Stem Cell Biology and Technology	2012-2017 (May)
Research assistant	Department of Stem Cells and Developmental Biology, Royan Institute for Stem Cell Biology and Technology	2011-2015

➢ *Research Interests:*

1) Reproductive biology/medicine and Assisted reproductive biology (ART)
2) Bioengineering in reproductive biology/medicine
3) Germ cells biology
4) In vitro germ line development from stem cells

➢ *Funding/Grants*

1) Research grant from Council for Stem Cell Sciences and Technologies (Grant no:454)
2) Research grant from Iran National Science Foundation (Grant no:97001442)
3) Travel grant winning for 4th edition of the advances in stem cell biology course, France (Jun 2016).

➢ Awards and Honors:

1) **Winner** as best PhD thesis in 4th **ISERB award for excellence in reproduction** (May 2018).
2) **Winner of the "Royan 18th International Research Award"** in the field of Stem Cell Biology and Technology for outstanding research entitled "In vitro Generation of Meiosis-Competent Germ Cells From Embryonic Stem Cells By Engineering the Delivery of BMP4" (Sep 2017).
3) **Honored and award winner** for the **first ranked research project** in medical sciences by ACECR (November 2016).
4) **Honored as first ranked** graduated student for PhD degree.
5) Award winning for best presentation at "**best ideas in stem cells and regenerative medicine conference**" by Iranian Council of Stem Cell Research and Technology (2015).
6) **Honored** as **the best researcher** in Royan Institute (2015).

7) The **first one in the PhD entrance exam** and **winner of Dr.Kazemi scholarship** (2011).
8) **Honored as a gifted student**, office of gifted Students, Shiraz University (2005-2008)
9) **Best poster presentation** of Shiraz University stem cell congress (2008).

➢ Professional experiences:

➢ Group leader

1) Supervision of ongoing projects
2) Management of regular weekly meetings and progress reports
3) Management of training for new students that join the group
4) Training two research assistant
5) Write an proof the manuscripts for submitting to peer-reviewed journals
6) Grant application
7) Supervision of establishment new protocols for germ cells isolation and culture in the laboratory

➢ Organisation of International conferences

1) Chairman the workshop for isolation and culture of mouse spermatogonial stem cell, Aug 2018, Royan Institute, Tehran,Iran
2) Chairman for "Recent Advances in Stem Cells and Regenerative Medicine" session in 19th Royan International Twin Congress, Aug 2018, Royan Institute, Tehran,Iran
3) Chairman for Isolation and Culture of mouse Spermatogonial Stem Cells, Aug 2018, Royan Institute, Tehran,Iran

➢ **Member of scientific board;** department of Department of Stem Cells and Developmental Biology, Royan Institute for Stem Cell Biology and Technology, since Feb 2019

➢ PUBLISHED papers in peer-reviewed Journals:

1) **Esfandiari F**, Mohammad Kazemi Ashtiani, Mehdi Sharifi Tabar, Maryam Saber, Hamed Daemi, Abdolhossein Shahverdi, Hossein Baharvand, Microparticle-mediated Delivery of BMP4 for Generation of Meiosis-competent Germ Cells from Embryonic Stem Cells. Macromol Biosci. **2017** Mar;17 (3).
2) **Esfandiari F**, Mashinchian O, Ashtiani MK, Ghanian MH, Hayashi K, Saei AA, Mahmoudi M, Baharvand H. Possibilities in Germ Cell Research: An Engineering Insight. Trends Biotechnol. **2015** Dec;33 (12):735-746
3) **Esfandiari F**, Fathi A, Gourabi H, Kiani S, Nemati S, Baharvand H, Glycogen Synthase Kinase-3 Inhibition Promotes Proliferation and Neuronal Differentiation of

Human Induced Pluripotent Stem Cell-derived Neural Progenitors. Stem Cells Dev. **2012** Nov 20;21 (17):3233-43.

4) Mirzaeian, Eftekhari-Yazdi P, **Esfandiari F**, Eivazkhani F, Rezazadeh Valojerdi M, Moini A, Fathi R. Induction of mouse peritoneum mesenchymal stem cells into germ cell-like cells using follicular fluid and cumulus cells conditioned media. Stem Cells Dev. **2019** Feb 15. doi: 10.1089/scd.2018.0149.
5) Moraveji SF, **Esfandiari F**, Sharbatoghli M, Taleahmad S, Nikeghbalian S, Shahverdi A, Baharvand H, Optimizing Methods for Human Testicular Tissue Cryopreservation and Spermatogonial Stem Cells Isolation. J Cell Biochem. **2019** Jan;120(1):613-621.
6) Yekani F, Azarnia M, **Esfandiari F**, Hassani SN, Baharvand H, Enhanced development of mouse single blastomeres into blastocysts via the simultaneous inhibition of TGF-β and ERK pathways in microdroplet culture. J Cell Biochem. **2018** Sep;119 (9):7621-7630.
7) Yekani F, Fazel-Tabar M, Kowsari-Esfahan R, Renaud P, Kavand H, **Esfandiari F,** Azarnia M, Montazeri L, Baharvand H. Enhancing developmental rate and quality of mouse single blastomeres into blastocysts using a microplatform. J Cell Physiol. **2018** Dec;233 (12):9070-9076.
8) Sharifi Tabar M, Hesaraki M, **Esfandiari F**, Sahraneshin Samani F, Vakilian H, Baharvand H. Evaluating electroporation and lipofectamine approaches for transient and stable transgene expression in human fibroblast and embryonic stem cells. Cell J. **2015** Fall;17 (3):438-50.
9) Attari F, Sepehri H, Ansari H, Hassani SN, **Esfandiari F**, Asgari B, Shahverdi A, Baharvand H. Efficient induction of pluripotency in primordial germ cells by dual inhibition of TGF β and ERK signaling pathways. Stem Cells Dev. **2014** May 15;23(10):1050-61.
10) Bahrehbar Kh, Rezazadeh Valojerdi M, **Esfandiari F**, Fathi R, Hassani SN, Baharvand H, Human Embryonic Stem cells–derived Mesenchymal Stem Cells Restore Ovarian Function and Rescue Fertility in Mouse Model of Chemotherapy-Induced Premature Ovarian Failure, Cytotherapy, Submitted article.
11) Moraveji SF, **Esfandiari F,** Taleahmad S, Nikeghbalian S, Masoudi NS, Shahverdi A, Baharvand H, A small molecule approach for enhancement of human spermatogonial stem cells proliferation and spermatogenesis recovery after chemotherapy, Human Reproduction, under revision.
12) Saber M, **Esfandiari F**, Moeini A, Shahpasand K, Shahverdi A, Baharvand H, Isolation and Propagation of Mitotically Active Functional Germ Cells from Adult Mouse and Human Ovarian Organoids, *In preparation*
13) Javadi A, Mokhtari S, Moraveji SF, Gouarbi H[*], **Esfandiari F[*]**, Zinc oxide nanoparticles interfere with gene expression network involved in self-renewal and differentiation of mouse spermatogonial stem cells. *In preparation*.
14) Farzaneh M, Mokhtari S, Moraveji SF, Gouarbi H[*], **Esfandiari F[*]**, Zinc oxide nanoparticles impair testicular cells karyotype by inducing ROS production and interfere with cell cycle. *In preparation*.

➢ Chapter books in Persian:

1) **Germ line stem cells, *Fereshteh Esfandiari***, *Faezeh Moraveji, Moein Zargarzadeh, Mina Sharbatoghli, Hossein Baharvand*. (In press, House of Biology Publisher).
2) **Differentiation of pluripotent stem cells to germ cells, *Fereshteh Esfandiari,*** *Hossein Baharvand.* (In press, House of Biology Publisher).
3) **Germ line-derived pluripotent stem cells,** Fereshteh Esfandiari, Farnoosh Attari, *Faezeh Moraveji,Nafisseh Hassani.* (In press, House of Biology Publisher).

➢ Invited Speaker in national and international meetings and congresses:

No	Title	Location	Date
1.	Stem cell approach in reproductive medicine	The 2nd International Congress on Biomedicine	Dec 2018
2.	What stem cells can do for infertile couples?	13th Seminar on Nursing and Midwifery	August, 2018
3.	Stem cells approach for future fertility in childhood cancer	Fertility preservation in cancer	June 2018
4.	In vitro generation of meiosis-competent germ cells from embryonic stem cells by engineering the delivery of BMP4	13th International Congress on Stem Cell Biology & Technology	Sep 2017
1.	Stem cells in reproductive medicine	Third international reproductive biology congress, Tehran, Iran	May 2017
2.	Tissue engineering approach in germ cell research	Tissue engineering and regeneration medicine symposium	May 2017
3.	Application of germ line stem cells in ART	Biology of germ line stem cells in ART, Isfahan, Iran	March 2017
4.	Engineering approach in germ cell research	The 2nd international congress on reproduction, Tehran, Iran	May 2016
5.	Stem cells for infertility treatments	6th Yazd international congress for reproductive medicine, Yazd, Iran	April 2015
6.	Generation of sperm from stem cells	First sperm biology symposium, Isfahan, Iran	November 2015
7.	Germ cells	Royan 6th international summer school on developmental biology and stem cells	June 2015
8.	Differentiation of stem cells to germ cells	First international reproductive biology congress	May 2015
9.	In vitro gamete production	Infertility and sterility congress, Isfahan, Iran	June 2014
10.	Production of germ cells in laboratory	10th International congress of women infertility, Tehran, Iran	September 2014

11.	Pluripotent Stem Cells: A Promising Approach to Cure the Infertility	14th International congress of women infertility, Tehran, Iran	Septemper 2013
12.	Germ cell development and germ line stem cells	Royan 4th international summer school on developmental biology and stem cells	June 2013
13.	From stem cells to germ cells	First stem cell congress of Damqan University, Damqan, Iran	October 2012

➢ Conferences and Meetings:

	Title	Location	Date	Name order
1.	Human Warton's Jelly Mesenchymal Stem Cells Possess the Potential to Differentiate into Oocyte-Like Cells after Induction by Follicular Fluid	International Opportunities in Stem Cell Research, ISSCr, Basel, Switzerland	2017, Feb	Zolfaghar Mona, Fathi Rouhollah **Esfandiari Fereshteh**, Beiki Bahareh, Naji Tahere, Moeini Ashraf
2.	ZnO nanoparticles effect on spermatogonial stem cells	NMNS, Tehran	2017, Nov	Azam Javdi, Maryam Farzaneh, Saadat Mokhtari, Faeze Moraveji, Hamid Gourabi, **Fereshteh Esfandiari***
3.	Dynamic and static microfluidic system for single embryo culture	NanoBioTech-Montreux, Geneva, Switzerland	2017, Nov	Farshid yekani, Reza kowsari Esfahan, Leila Montazeri, **Fereshteh Esfandiari**, Philippe Renaud b and Hossein ıd
4.	Ovarian Follicular Recruit Loss after Cyclophosphamide Treatment: Premature Ovarian Failure Modeling in Mice	12th Royan International Twin Congress, Tehran, Iran	2017,Sep	Abedi F, Abtahi NS, Eivazkhani F, Eimani H, Montazeri L, Bahrebar Kh, **Esfandiari F**, Fathi R
5.	Mouse Visceral Peritoneum Mesenchymal Stem Cells Express Germ and Oocyte Cells Markers during In Vitro Induction by Human Follicular Fluid	12th Royan International Twin Congress, Tehran, Iran	2017,Sep	Mirzaeian L, **Esfandiari F**, Rezazadeh Volojerdi M, Fathi R
6.	Simultaneous Inhibition of TGFβ and Erk Pathways Promotes the Development of Mouse Single Blastomeres into Blastocyst	12th Royan International Twin Congress, Tehran, Iran	2017,Sep	Farshid Yekani , Mahnaz Azarnia **Fereshteh Esfandiari**, Seyedeh-Nafiseh Hassani , Hossein Baharvand

7. Establishment of Chemotherapy Induced Premature Ovarian Failure Model	12th Royan International Twin Congress, Tehran, Iran	2017	Khadijeh Bahrebar, **Fereshteh Esfandiari**, RouhollahFathi, Seyedeh Nafiseh Hassani, MojtabaRezazadeValojerdi, Hossein Baharvand
8. Isolation, Culturing and Differentiation of Human Amniotic Fluid Stem Cells into The Oocyte Like Cells by Using of Cumulus Condi¬tioned Medium and Follicular Fluid	12th Royan International Twin Congress, Tehran, Iran	2016, Sep	Babaee Faraj Abad S1Fathi R, jerdi M, Ebrahimi B**, Esfandiari F**
9. A simple and efficient method for cryopreservation, isolation and long term culture of human spermatogonial stem cells	Second international congress on reproduction, Tehran, Iran	2016, May	Moraveji F, **Esfandiari F,** Shahverdi A, Baharvand H
10. Wharton's Jelly Mesenchymal Stem Cells Derived from Human Umbilical Cord Could Be Isolated, Cultured and Differentiated Morphologically into The Oocyte Like Cells	12th Royan International Twin Congress, Tehran, Iran	2016, Sep	Zolfaghar M1*, Naji T, Beiki B, Rezazadeh Valojerdi M, Fathi R, **Esfandiari F**, Moini A
11. Establishment of spermatogonial stem cell line	First international reproductive biology congress, Tehran, Iran	2015, May	Arkian E**, Esfandiari F**, Shahverdi A, Baharvand H
12. Derivation of Mouse Sperm from SpermatogonialStem Cells in Three- dimensional Culture System	CDB Symposium, Paris, France	2014, March	Sharbatoqli M, Eftekhari Yazdi P, Dalman A, Hadi M, Kazemi Ashtiani M, **Esfandiari F**, Shahverdi A, Baharvand H
13. Inhibition of glycogen synthase 3 enhances proliferation and neural differentiation of human pluripotent stem cells-derived neural progenitor cells	first annual neural stem cell conference Tehran, Iran	2011, Sep	**Fereshteh Esfandiari,** Sahar Kiani,Shiva Nemati, Ali Fathi, Hossein Baharvand, Hamid Gourabi
14. CHIR99021-a GSK3 Inhibitor- Promotes Proliferation of Human Induced Pluripotent Stem Cell-Derived Neural Progenitors via βcatenin and Notch Signalling and Increase	7th Royan International Twin Congress, Tehran, Iran	2011, Sep	**Esfandiari F**, Fsthi A, Kiani S, Gourabi H, Baharvand H

➢ Teaching experiences:

1) Royan 4th international summer school on developmental biology and stem cells, June 2013 (Title: germ cell development and germ line stem cells)

2) Royan 6th international summer school on developmental biology and stem cells, June 2015 (Title: Germ cells)
3) Embryology, for Master students, Royan Institute 2016
4) Germ line stem cells for PhD students, Royan Institute 2016
5) Developmental biology for PhD students, Royan Institute 2016
6) Germ line development, Workshop for isolation and culture of mouse spermatogonial stem cells, Royan Institute 2017
7) Physiology of Reproduction, Master students, University of Science and Culture, 2019

➢ Advising experiences

Thesis title	Location (University)	Level	Situation
Differentiation of human Wharton's jelly-derived mesenchymal stem cells to female germ cells by human follicular fluid an cumulus cells conditioned media	Royan Institute and Azad University, Science and Research Branch, Tehran	Master	Defense in Sep 2016
Differentiation of human amniotic fluid stem cells to female germ cells by human follicular fluid an cumulus cells conditioned media	Royan Institute and university of science and culture, Tehran	Master	Defense in Sep 2016
Making artificial gonad by simultaneously seeding the oogonial and peritoneal stem cells in decellularized ovary	Royan Institute and university of science and culture, Tehran (ongoing project)	PhD	Close to thesis submission
Generation of human endometrial organoid as a model for in vitro study of endometrium and evaluation its effects on embryo development and Asherman syndrome	Shahid Beheshti University and Royan Institute	PhD	Ongoing
Probing the Effect of Clonal MSC-Extracellular Vesicles, Releasing Approach and Rout of Injection in a Murine Model of Asherman Syndrome	Shahid Beheshti University and Royan Institute	PhD	Ongoing
Investigating the Effect of Clonal MSC-Extracellular Vesicles, Releasing Pattern and Route of Injection In Premature Ovarian Failure Mouse Model	Royan Institute and university of science and culture, Tehran	PhD	ongoing

➢ Mentoring

Thesis title	Location (University)	Level	Situation
Investigation of ZnO nanoparticles in self-renewal and differentiation of mouse spermatogonial stem cells	Royan Institute and university of science and culture, Tehran	Master	Defense in Sep 2018

Investigation of ZnO nanoparticles in chromosomal integrity of mouse spermatogonial stem cells	Royan Institute and university of science and culture, Tehran	Master	Defense in Sep 2018
The effects of Ceratonia siliqua l. (carob) decoction on spermatogenesis of infertile male mice model	Royan Institute and university of science and culture, Tehran	Master	Close to thesis submission
BMP4-loaded microparticles fabricated In microfluidic system for Primordial Germ Cell-like Cell induction from Mouse Embryonic Stem Cells	Royan Institute and university of science and culture, Tehran	Master	Ongoing
The effects of Ceratonia siliqua l. (carob) fractions on spermatogenesis of infertile male mice model	Royan Institute and university of science and culture, Tehran	Master	Ongoing

➢ Research experiences

Title of research project	Location	Situation	Role
Specification of Male Germ Cells from Mouse Germ Line Pluripotent Stem Cells in vitro	Royan Institute	The final report submitted in 2014	Researcher
Fabrication of Uterine adhesion prevention barrier based on hyaluronic acid and carboxymethyl cellulose	Royan Institute	Ongoing	Advisor
Microfluidic based isolation of human motile spermatozoa	Royan Institute	Ongoing	Advisor
Generation of fertile oocytes from oogonial stem cells via organoid approach	Royan Institute	Ongoing	Advisor
Generation of endometrial organoids from endometrial tissue of patients with endometriosis and healthy women	Royan Institute and Shahid Beheshti University	Ongoing	Advisor
Isolation and Culture of Human and Mouse Oogonial Stem Cells	Royan Institute	Ongoing	Colleague

Integration of microfluidic systems and testis-derived hydrogel for development of human and mouse spermatogenesis	Royan Institute and Tarbiat Modares University	Ongoing	Colleague
Propagation and long term culture of Human Spermatogonial Stem Cells using Small Molecules	Royan Institute	Manuscript submitted	Colleague

➢ Research Expertise and Skills:

1) Culture of human and mouse embryonic stem cells
2) Culture of mesenchymal stem cells
3) Culture of neural stem cells
4) Differentiation of mouse embryonic stem cells to germ cells
5) In vitro meiosis induction
6) Differentiation of human embryonic stem cells to neural cells
7) Electroporation of both human and mouse embryonic stem cells
8) Immunofluorescence
9) Flowcytometry technique
10) Fluorescence Activated Cell Sorting (FACS)
11) SEM imaging
12) Cryosection of cell aggregates
13) DNA, RNA extraction, RT-PCR, q-RT PCR, Gel electrophoresis
14) Primer designing for q-RT PCR
15) Promoter isolation
16) Digestion, ligation and transduction

➢ Training:

Title	Location	Date
Theoretical basis for RNAi technique	Royan institute, Tehran, Iran	Oct 2012
Scientific writing and scientific ethics	Royan institute, Tehran, Iran	June 2011
Scientific writing	Biotechnology institute, Karaj, Iran	Oct 2011-Jan 2012 (64 hours)
Isolation of male and female gonad from mouse embryos (E13.5)	First International school for developmental biology and stem cells Royan institute	2010

- **Hobbies:**
  1. Swimming
  2. Walking

- **Referees contact information:**

1. Hossein Baharvand, PhD

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2. Hamid Gourabi, PhD

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