Royan Institute

Royan Institute is a public non-governmental non-profitable organization, world-renowned center committed to multi-disciplinary, campus-wide, integration, and collaboration of scientific, academic and medical personnel for understanding Reproductive Biomedicine, Stem Cells and Regenerative Medicine, as well as Biotechnology. Royan is affiliated to “Academic Center for Education, Culture and Research (ACECR)”. This institute supports innovation, excellence and the highest ethical standards focusing on increasing the success rate of infertility treatment alongside embryo health. Furthermore, Royan provides a comprehensive and coordinated "bench to bedside" approach to regenerative medicine, as well as a greater understanding of fundamental biology of stem cells, developmental biology, tissue engineering programs, development of translational research of stem cell therapeutics, and administration of new cell-therapy approaches that can restore tissue function to patients. Additionally, Royan is going to establish Personalized Medicine, Cancer Medicine, and Neurocognitive Science fields and expand the works from generation of science, translational research to application of science. Royan is going to establish a big hospital to go more deep for application of bench to bedside. This institute was established in 1991 by the late Dr. Saeid Kazemi Ashtiani (May he rest in peace) as a research institute for Reproductive Biomedicine and Infertility treatments. Royan in Persian means "embryo" and also “ever growing”. Now, this institute acts as leader of stem cell research and infertility treatment in Iran and Middle East. Royan publishes "Cell Journal" (Yakhteh) with a current impact factor of 1.2 and IJFS (Iranian Journal of Fertility and Sterility), indexed in ISI. Royan consists of three research institutes. Each institute focused on a specific field of research. Further each institute has a service center.

- **Royan Institute for Reproductive Biomedicine**, 1991, including “Infertility Treatment Center”
- **Royan Institute for Stem Cell Biology and Technology**, 2002, including “Cell Therapy Center”
- **Royan Institute for Animal Biotechnology**, 2004, including “Dairy Assist Center”

Mission:

- Research and development of science and technology in biology, biotechnology, and medical areas of reproductive and regenerative biomedicine.
- Treatment of infertile patients and patients who need restore tissue function by administration of new cell-therapy approaches.
- Commercialization of research findings to be offered as services or biological products.
- Education and promotion of scientific findings at national and international levels.
**Royan Institute for Stem Cell Biology and Technology (RI-SCBT)**

RI-SCBT, first, as the "Department of Stem Cells" was established in 2002 to advance researches on biology and technology of Embryonic Stem Cells, induced Pluripotent Stem Cells, Germ line Stem Cells, Adult Stem Cells, Cancer Stem Cells, and Cord Blood Stem Cells.

Our vision is to efficiently put stem cell research findings into operation in disease treatment to increase the level of health.

Our mission at RI-SCBT is to generate insights into the biology of stem cells through basic research and to provide the foundation needed for novel therapies from regenerative medicine.

The Institute is providing a comprehensive and coordinated "bench to bedside" approach to regenerative medicine, including a greater understanding of fundamental biology of stem cells, developmental biology, tissue engineering programs, the development of translational research of stem cell therapeutics, and administration of new cell therapies approaches that can restore tissue function to patients.

The "RI-SCBT" consists of three departments and one center including Department of Stem Cells and Developmental Biology, Department of Cell Engineering, Department of Regenerative Medicine, and Cell Therapy Center.

**Additionally, we are going to establish the department of Personalized Medicine, Cancer Medicine, and Neurocognitive Science.**

**Royan Institute for Reproductive Biomedicine (RI-RB)**
Royan Institute for Reproductive Biomedicine, founded in 1991, consists of six departments and one clinic actively working on different aspects of infertility and the development of new methods for infertility treatment.

Its vision is to improve the population’s health through infertility treatments and giving infertile families the hope of having children.

In this regard, RI-RB’s mission is to research different aspects of infertility and its treatment in order to increase the success rate alongside improving embryo health.

The departments of the institutes, including:

- Reproductive Imaging
- Epidemiology & Reproductive Health
- Andrology
- Reproductive Genetics
- Endocrinology & Female Infertility
- Embryology

**Royan Institute for Animal Biotechnology (RI-AB)**

Recent advances over the last decade have shortened the gap between basic science and its applications. This phenomenon is at its utmost in the field of biotechnology. Therefore, at Royan Institute for Biotechnology we hope to participate in this endeavor with the intent to improve the standard of life for mankind, assisting those in need. We believe this vision can only be accomplished by interactive, hands on science between experienced and young researchers. Thus we hope by encouraging interaction and providing the opportunity for scientific discussion
between students and scientists, in addition to expanding our research facilities, to broaden our boundaries of science, making it applicable for those in need.

A Chronological Overview of the Institute Developments

- The first IVF birth in Tehran (1993)
- The second ICSI birth in Iran (1995)
- Iran second success in open testicular biopsy to treat severe male infertility (1996)
- The first frozen embryo birth in Iran (1996)
- The first ICSI birth by frozen sperm of a gonadectomized man (1999)
- The first celebration of the 1000th birth by the assisted conception treatment in Iran (1999)
- The first human embryonic Stem Cell line establishment in Iran and one of first ten counties in the world (2003)
- The first PGD child born in Iran (2004)
- The first time use of Adult Stem Cell in treatment of MI during CABG in Iran (2004)
- Culture of Human Limbal Stem Cells on Chorionic Membrane and use them for corneal injuries (2004)
- The first IVM-IVF sheep born in Iran (2006)
- The first cloned sheep born in Iran (2006)
- Establishment of mouse and human induced pluripotent stem cells (iPS) (2008)
- Transplantation of melanocytes for patient with vitiligo (2008)
- The first cloned goat born in Iran (2009)
- The first transgenic goats born in Iran (2010)
- Establishment of cell therapy pre-hospital (2011)
- Establishment of Stem Cell Bank (2011)
- The first healthy child birth after Molecular PGD for beta-thalassemia in Iran (2012)
- Birth of eight cloned goats through the simplified method of SCNT in Iran (2013)

Prominent Achievements

- Report of three new mutation of cystic fibrosis
- Second place of Razi medical science award 2003
- Best young researcher in Razi medical science award 2004
- Report of human embryonic stem cells’ proteomics for the first time in the world
- Establishment of human embryonic stem cell lines in 2003
- Introduction of late director of Royan Institute as Iran’s everlasting legend in 2005
- Selection as “prominent research center” in Razi medical sciences award
- Best researcher in Razi medical sciences award 2006
- Best medical journal (Cell Journal (yakhteh) ) in Razi medical sciences award 2006
- Best research achievement prize in Razi medical sciences award
- Best research achievement prize in Kharazmi young researcher award 2006
- Publication of two journals: Cell Journal (Yakhteh) and IJFS (Iranian Journal of Fertility and Sterility), Indexed in ISI

- Use of adult stem cells in corneal injuries and myocardial infarction on human

- Several research achievements in preimplantation diagnosis and screening

- Registration of T338A, K536X, Y122H genes in CBAVD (Congenital Bilateral Absence of Vas Deferens) patients, 2007