We have moved to New Building:
Royan Institute for having more places in both sections of research & treatment, has been moved to new building since June 2007.

Projects on Process:
1- Differentiation of Mouse Embryonic Stem Cells on Poly-Hydroxy Acid Microspheres
2- A 3- Dimensional Nanofibrous Scafforld for Neural Tissue Engineering

* Nature Reports Stem Cells
Published online: 25 October 2007 | doi:10.1038/stemcells.2007.105
An American scientist in Tehran

Rudolf Jaenisch
Enthusiastic stem-cell researchers in Iran face plentiful funding but a shortage of equipment As I filled out the paperwork and purchased a plane ticket to attend the Eighth International Royan Twin Congress in Iran, colleagues and acquaintances accused me of acting rashly. They were surprised that I dared to go to Iran; many other US scientists invited had declined because of safety concerns. During my time in Tehran, however, I encountered only enthusiasm and hospitality. Other Westerners, such as Emory University’s Sarah Berga, who has spoken at this conference before, were treated equally well. My only regret is that there were not more Americans there. Despite my colleagues’ concerns, I felt safer than if I had been a tourist in a large American city. There were no panhandlers or aggressive touts to harass me, and the country is beautiful….

International collaborations are even more crucial for scientists in Iran than in other countries because of the absurd logistical hurdles Iranian scientists face in doing their work. The main problems for science there are not within the country, but in moving people and equipment between Iran and the rest of the world. Although Iran has a permissive internal regulatory environment and its researchers are well funded, the country cannot import the scientific equipment and supplies that most stem-cell scientists use every day, and that many could not imagine doing without. This is largely the result of trade sanctions imposed on Iran by other countries, including the United States and the European Community, under which the export of some items of scientific equipment to Iran is banned and others require special export licenses.

For reading the main report see bellow address:

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Introduction:
The underlying objective of this Award is first to support the researchers financially and scientifically regardless of their nationality; secondly to appreciate their efforts, and third, to introduce the researchers and their findings to the world. This year, the awards will be granted to five researchers who have been able to carry out the best researches on Reproductive Biomedicine or any other related subjects.

Winners:

Best research project in Stem Cells field
Chiba Shigeu M.D., Ph.D./Japan
Role of Notch signaling in normal and neoplastic hematopoietic stem cells and clinical application of Notch signal modifiers

Best research project in Reproductive Genetics field
Françoise Dantzer Ph.D./France
Poly(ADP-ribose) polymerase-2 contributes to the fidelity of male meiosis I and spermiogenesis.

Best research project in Female Fertility field
Seyed Mohammad Moazzeni Ph.D./Iran
Dendritic Cells and Pregnancy: A Bidirectional Relationship to Protect the Semiallogenic Fetus.

Best research project in Embryology field
Bjorn Johannes Oback Ph.D./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 Ph.D./India
Role of Cyclooxygenases in Male Reproduction.
Articles:

**Phase 1 human trial of autologous bone marrow-hematopoietic stem cell transplantation in patients with decompensated cirrhosis.**
Mohamadnejad M, Namiri M, Bagheri M, Hashemi SM, Ghanati H, Zare Mehrjardi N, Kazemi Ashltiani S, Malekzadeh R, Baharvand H. Dep. of Stem Cells, Royan Institute

**AIM:** To evaluate safety and feasibility of autologous bone marrow-enriched CD34+ hematopoietic stem cell Tx through the hepatic artery in patients with decompensated cirrhosis.

**METHODS:** Four patients with decompensated cirrhosis were included. Approximately 200 mL of the bone marrow of the patients was aspirated, and CD34+ stem cells were selected. Between 3 to 10 million CD34+ cells were isolated. The cells were slowly infused through the hepatic artery of the patients.

**RESULTS:** Patient 1 showed marginal improvement in serum albumin and no significant changes in other test results. In patient 2 prothrombin time was decreased; however, her total bilirubin, serum creatinine, and Model of End-Stage Liver Disease (MELD) score worsened at the end of follow up. In patient 3 there was improvement in serum albumin, prothrombin time (PT), and MELD score. Patient 4 developed radiocontrast nephropathy after the procedure, and progressed to type 1 hepatorenal syndrome and died of liver failure a few days later. Because of the major side effects seen in the last patient, the trial was prematurely stopped.

**CONCLUSION:** Infusion of CD34+ stem cells through the hepatic artery is not safe in decompensated cirrhosis. Radiocontrast nephropathy and hepatorenal syndrome could be major side effects. However, this study does not preclude infusion of CD34+ stem cells through other routes.


**The role of inhibin B in prediction of in vitro fertilization or intracytoplasmic sperm injection cycles’ outcome.**
Tehraninejad ES, Amirchaghmaghi E, Owj M, Rashidi BH, Jalilian N, Sadeghi M. Dept. of End. & Female Infert., Royan Institute tehraninejad@royaninstitute.org

**OBJECTIVE:** To investigate the usefulness of inhibin B concentrations obtained on the fifth day in predicting ovarian response and assisted reproductive technologies outcome.

**METHODS:** In this prospective multi-center study, infertile women who were candidate for in vitro fertilization or intracytoplasmic sperm injection for the first time were enrolled. These patients were referred to the Royan Institute, Vali-Asr Hospital and Alvand Hospital, Tehran, Iran between 2003 and 2004. The inclusion criteria were female age (20-35 years), body mass index (BMI) of 20-28 Kg/m2, duration of infertility≥2 years, a normal menstrual cycle and a normal day 3 follicle stimulating hormone level of <8.5 IU/L. All patients underwent long standard gonadotrophin releasing hormone agonist protocol. Plasma level of inhibin B was checked on the fifth day of menstrual cycle. The diagnostic accuracy of inhibin B, were assessed by the area under the receiver operating characteristic (ROC) curve.

**RESULTS:** In this study, 107 infertile patients were studied. Using the value of 283 pg/ml for inhibin B as the cut-off point, day 5 inhibin B had 77% sensitivity, 30% specificity, 31.2% positive predictive values (PPV) and 76.7% negative predictive values (NPV) for poor ovarian response. There were statistically significant correlation among day 5 inhibin B concentration and BMI, number of mature follicles, retrieved oocytes, developed and transferred embryos, chemical pregnancy, ovarian hyperstimulation syndrome (OHSS) and poor responder.

**CONCLUSION:** Although the chemical pregnancy, number of retrieved oocytes, developed and transferred embryos were higher in patients with higher day 5 inhibin B concentration but considering its sensitivity, specificity, PPV and NPV, it cannot be used as a strong test for prediction of cancellation, pregnancy, poor responses and OHSS.

Mol Vs. 2007 Sep;18;13:1711-21

**Proteomic analysis of epithelium-denuded human amniotic membrane as a limbal stem cell niche.**
Baharvand H, Heidari M, Ebrahimii M, Valadbeigi T, Salekdeh GH. Dept. of Stem Cells, Royan Institute, Tehran, Iran.

**PURPOSE:** A new strategy of treating ocular surface reconstruction is to transplant a bioengineered graft by expanding limbal stem cells (SCs) ex vivo on the amniotic membrane (AM). The reasons for the exceptional success on the AM are not fully understood but are believed to be related to its unique composition. We investigated the proteome of the epithelium-denuded AM to increase our understanding of the mechanisms by which AM may confer its beneficial effects.

**METHODS:** We compared the epithelia denuded-human AM with matrigel and collagen on the expansion of limbal SCs by evaluating the expression of specific markers. The protein pattern of the epithelium-denuded AM was analyzed using two dimensional electrophoresis (2-DE) coupled with mass spectrometry (MS) identification of proteins. RESULTS: Epithelial outgrowth of limbal explants on AM expressed more p63 and K19 (SC markers) and less K3 and connexin 43 (corneal differentiation markers) in comparison with other extracellular matrices (ECMs). Moreover, in all groups, the cells expressed ABCG2, K19, K12, p63, and Pax6 as shown by reverse transcription polymerase chain reaction (RT-PCR). Out of about 600 protein spots analyzed on six 2-DE gels, 515 spots could be detected in all replicates. A high average correlation coefficiency (CC) of 0.926 implied good intra-sample reproducibility. Forty major proteins of AM were identified using MALDI TOF/TOF MS of which different isoforms of lumican and osteoglycin were responsible for around 23% of the total proteome on gels.

**CONCLUSIONS:** Our results showed that epithelium-denuded AM provides a superior niche for limbal SC proliferation and phenotype maintenance in vitro and the denuded human AM is a protein enriched ECM. This will prove critical to the future understanding of the biological and therapeutic mechanisms involved in
AM transplantation and regeneration. The identification of highly abundant proteins in denuded-AM, such as lumican, osteoglycin/memican, collagen alpha type IV, and fibrinogen, further explains its unique properties and will assist in the efforts to generate bioengineered and artificial AM constructs.

24th Annual Meeting of the ESHRE, July 6-9 2008
Barcelona, Spain

A Surprising Photo

Learning & Studying Before Die- Prof. Hesabi

7th Bienial Meeting ALPHA
2008, 2-5 May
Istanbul, Turkey

We will glad to see you in our forthcoming Award & Congress
27-29 Aug 2008, Tehran - IRAN

If you want to have our newsletter for your friend, let us know by email
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9th Royan International Research Award
Reproductive Biomedicine & Stem Cells Biology & Technology

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Dear Friends Happy New Year