This rose is from the dust of one like me. My companion and confidant it is, because:

His joy within the rose, thus I can see. The colorful rose brings the sweet scent of he.

Haftari (1320-1389 A.D)

A Trip to Iran

A trip to Iran was a great experience!
I had the opportunity to visit a fantastic country with history and culture but also to appreciate the warm hospitality of the people.
I have so beautiful memories and I showed my pictures to my relatives and friends and was very proud and glad to had this opportunity.

I never forget the unique and special atmosphere of Persepolis it was like a dream! And also I will never forget all the Iranian people that made the dream reality!!

Anastasia Ussia M.D
Villa Giose Clinic, Crotone, Italy.

Royan Articles

Varicocelectomy: semen parameters and protamine deficiency.

Nasr-Esfahani MH, Abasi H, Razavi S, Ashrafi S, Tavalaee M.
Department of Embryology and Andrology, Royan Institute, Tehran, Iran. mh_nasr@med.mui.ac.ir

Different methods have been used to evaluate the beneficial effect of varicocelectomy; these include semen parameters and pregnancy rate. Because of high biological variability of semen parameters, sperm functional tests have been considered as an efficient end point in assessment of fertility. Therefore, the aim of this study was to evaluate the effect of varicocelectomy on semen parameters and sperm protamine deficiency in 192 patients. The results of the present study show that all the three semen parameters and percentage of sperms with normal protamine content have improved post-surgery. The cumulative pregnancy rate was 34.6%. Comparing the results of the semen parameters and protamine content between patients whose partner became pregnant to those who did not benefit from varicocelectomy before and 6 months after surgery, show that patients may benefit from varicocelectomy that had higher initial semen density and better sperm morphology prior to surgery. Detailed analyses of sperm morphology, along with aforementioned results reveal that the factors which account for pregnancy difference are: (i) improvement in early events of spermatogenesis, possibly during spermatocytogenesis and reduction division; and (ii) late spermiogenesis events. Thus, it can be suggested that patients with low initial sperm count may benefit more from assisted reproductive techniques or varicocelectomy followed by assisted reproduction.

Royan Institute
Reproductive Biomedicine Stem Cell Biology & Technology Tehran, Iran
P.O.Box: 19395 - 4644
Tel/Fax: (+9821) 22310406
E-mail: info@royaninstitute.org
Influence of sperm chromatin anomalies on assisted reproductive technology outcome.

Tavalaee M, Razavi S, Nasr-Esfahani MH.
Department of Embryology and Andrology, Royan Institute, Tehran, Iran.

OBJECTIVE: To evaluate the influence of DNA fragmentation, DNA methylation, and protamine deficiency as indicators of chromatin status on assisted reproductive technology outcome, and also to assess the relation between these parameters.

DESIGN: Prospective study.

SETTING: Royan Institute and Isfahan Fertility and Infertility Center.

PATIENT(S): Semen samples from 92 infertile couples undergoing intracytoplasmic sperm injection (ICSI) and IVF were assessed during this study.

INTERVENTION(S): Semen analysis was carried out according to World Health Organization criteria. Protamine deficiency, DNA methylation, and DNA fragmentation were assessed by chromomycin A3 (CMA3), immunostaining, and sperm chromatin dispersion, respectively.

MAIN OUTCOME MEASURE(S): Chromomycin A3 positivity, DNA methylation, DNA fragmentation and assisted reproductive technology outcome.

RESULT(S): Chromomycin A3 positivity shows a significant correlation with DNA fragmentation and fertilization rate. Furthermore, unlike in IVF patients, DNA fragmentation showed a significant negative correlation with fertilization rate in ICSI. A significant negative correlation was observed between DNA methylation and DNA fragmentation. In addition, no correlation was found between fertilization rate and DNA methylation in both IVF and ICSI patients.

CONCLUSION(S): The results reveal that in ICSI procedure DNA fragmentation, and CMA3 positivity affect the fertilization rate, whereas none of these parameters affect postfertilization development. Furthermore, both CMA3 positivity and DNA methylation affect DNA fragmentation, independently of each other. Thus, it can be concluded that these parameters may play an early role in initiation of development.

Effect of lead on proliferation and neuronal differentiation of mouse bone marrow-mesenchymal stem cells.

Kermani S, Karbalaie K, Madani SH, Jahangirinejad AA, Estaminejad MB, Nasr-Esfahani MH; Baharvand H.
Department of Stem Cells, Cell Science Research Center, Royan Institute, Esfahan Campus, PO Box 8158968433, Esfahan, Iran.

Bone marrow-mesenchymal stem cells (MSCs) are considered to be an ideal source of stem cells for assessing the effects of environmental toxins on the proliferation, multipotency and differentiation of adult stem cells. The aim of this study was to investigate the effect of lead on the proliferation and neuronal differentiation of murine MSCs. MTT assay used in this study revealed that while the proliferation of MSCs is sensitive to higher than 10 microM lead, a 50% reduction in the rate of their proliferation can be achieved in the presence of 60 microM lead. The results of immunocytochemistry and RT-PCR showed that beta-mercaptoethanol induced-neuronal differentiation is also reduced after the treatment of MSCs by 60 microM lead. Furthermore, the comet assay analysis of MSCs showed a substantial increase in DNA damage in the lead treated cells compared to the control. In conclusion, our results revealed for the first time that lead is not only cytotoxic to the survival and proliferation of MSCs but also inhibits their differentiation to neurons in a dose-dependent manner. Therefore, MSCs appear to be an alternative method for assessing the cytotoxic effects of such environmental hazards.

New stem cell research unlocks unknown therapies

Published: Thursday, May 21, 2009 - 12:22 in Health & Medicine

“Stem cell research and regenerative medicine are in an extremely exciting phase right now. We are gaining knowledge very fast and many companies are being formed and are starting clinical trials in different areas,” says Dr Jonas Frisen. As an example, a first-in-human study was just initiated for Parkinson’s disease patients with the drug product sNN0031, from the Swedish company NeuroNova. The drug, which is administered into the fluid-filled cavities of the brain, has shown long-lasting recovery and formation of new cells in animal models of Parkinson’s disease. Last year, a treatment for ALS entered the clinical trial phase. Disorders in the brain and nervous system result in more hospitalizations than any other disease group, and treatments entail large costs to society. The research field of neuroscience is one of Sweden’s finest. This had resulted in achievements within numerous areas of basic science with considerable scope to direct clinical applications. These include research advances concerning the origin and repair of nerve cell damage following stroke and spinal cord injury, as well as research into major degenerative diseases such as Parkinson’s and Alzheimer’s.

Source: Karolinska Institutet

Gene therapy could expand stem cells’ promise

Published: Thursday, May 21, 2009 - 11:50 in Health & Medicine

Once placed into a patient’s body, stem cells intended to treat or cure a disease could end up wreaking havoc...
simply because they are no longer under the control of the clinician. But gene therapy has the potential to solve this problem, according to a perspective article from physician-scientists at NewYork-Presbyterian Hospital/Weill Cornell Medical Center published in a recent issue of the journal Cell Stem Cell. The paper details strategies for genetically modifying stem cells prior to transplantation in order to ensure their safety.

“Stem cell therapy offers enormous potential to treat and even cure serious diseases. But wayward stem cells can turn into a runaway train without a conductor. This is an issue that can be dealt with and we have the technology to do that in the form of gene therapy,” says senior author Dr. Ronald G. Crystal, chief of the Division of Pulmonary and Critical Care Medicine at NewYork-Presbyterian Hospital/Weill Cornell Medical Center, and the Bruce Webster Professor of Internal Medicine and Professor of Genetic Medicine at Weill Cornell Medical College.

Stem cells have the capacity to differentiate into any of the different tissues making up the human body, thus holding the promise of treating or curing diseases such as multiple sclerosis or spinal-cord injury by replacing diseased cells with healthy cells.

But unlike other therapies such as chemotherapy, antibiotics or aspirin, stem cells have no expiration date, and that poses a real problem.……

But gene therapy also needs to be carefully done and, ideally, two independent gene-manipulation systems would be used to ensure that stem cells remain firmly in control of clinicians.

Source: New York- Presbyterian Hospital/Weill Cornell Medical Center/Weill Cornell Medical College
Iran’s second cloned calf born

TEHRAN, July 25 (KUNA) -- A second calf cloned by Iranian researchers was born at “Royan Institute” in Isfahan on Saturday, reported Fars News Agency (FNA).

According to the news agency, following the successful cloning of various farm animals, including a lamb named ‘Royana,’ a goat named ‘Hanna,’ and the first calf named ‘Bonyana,’ Iranian scientists succeeded in cloning a second calf named ‘Tamina.’ The birth of Iran’s second cloned calf, which occurred two weeks after Bonyana’s birth, completed the circle of embryology researchers carried out by the Royan Institute in the field of cloning, it said.

Now, Iran stands among the numbered countries possessing the ability to clone farm mammals, it added.

It said Royan Institute researchers hoped to clone certain species at high risk of extinction in the near future. They are also looking to use cloned goats to produce genetically modified animals required for manufacturing new recombinant medications, it noted.

The effort is part of Iran’s quest to become a regional high-tech powerhouse in western Asia by 2025. (end) ha.ema KUNA 251404 Jul 09NNNN

About IRAN, Science and Technology in Iran

Part I

Persia was a cradle of science in earlier times. Persian scientists contributed to the current understanding of nature, medicine, mathematics, and philosophy. Persians made important contributions to algebra and chemistry, invented the wind-power machine, and performed the first distillation of alcohol. Trying to revive the golden time of Persian science, Iran’s scientists cautiously reach out to the world. Many individual Iranian scientists, along with the Iranian Academy of Medical Sciences and Iranian Academy of Sciences, are involved in this revival. Iran is an example of a country that has made considerable advances through education and training. Despite sanctions in almost all aspects of research during the past few decades, Iran’s university population swelled from 100,000 in 1979 to 2 million in 2006. Seventy percent of its science and engineering students are women.

Science in Persia evolved in two main phases separated by the arrival and widespread adoption of Islam in the region. Many of the today’s concepts in Science including Hello-Centric model of solar system, finite speed of light, and gravity were first proposed by Persian scientists. Little is known about science in Iran during ancient times. In the Sassanid period (226 to 652 AD), attention was given to mathematics and astronomy. The Academy of Gondeshapur is an example. The Sassanid School of Nisibis and pre-Islamic Sarouyeh are other examples in this category. Because the ratio of Astronomical tables—such as the Shahryar Tables—date to this period, and Sassanid observatories were later imitated by the astrologers and astronomers of the Islamic period. Sa’ad Andolsosi, in his book Classes of People, praised Persian knowledge of mathematics and astronomy. References to scientific subjects such as natural science and mathematics occur in books written in the Pahlavi languages.

The medical and veterinary essays, prescriptions, and expressions mentioned in Dinkart (from the Sassanid period) were of interest to later and modern scholars. Some medical books later translated into Arabic were initially compiled in the Syrian or Pahlavi languages by Iranian scholars. Among such books are those on veterinary medicine, agriculture, diseases and treatment of gab-birds, training and education of children, and tactics of warfare.

In the mid-Sassanid era, knowledge came to Persia from the West in the form of the views and traditions of Greece which, after the spread of Christianity, accompanied Syriac, the official language of Christians as well as the Iranian Nestorians. The Christian schools in Iran produced scientists such as Nersi, Farhad, and Marabai. Also, a book was left by Paulus Persa, head of the Iranian Department of Logic and Philosophy of Aristotle, written in Syriac and dictated to Sassanid King Anushiravan.
Other teachers have risen from similar theological and philosophical schools. Amongst them were Ibrahim Madi, Hibai the translator, Marbab Gondishapuri, and Paulus, son of Kaki of Karkhe. During the Sassanid period, Gondishapur (a town east of Susa, southeast of Dezful and northwest of Shushtar) became a center of medical knowledge, and its fame lasted for several centuries, even after the advent of Islam in Persia.

**Ancient technology in Persia**

Qanat (a water management system used for irrigation) originated in pre-Achaemenid Persia. The oldest and largest known qanat is in the Iranian city of Gonabad which, after 2,700 years, still provides drinking and agricultural water to nearly 40,000 people.

Persian philosophers and inventors may have created the first batteries (sometimes known as the Baghdad Battery) in the Parthian or Sassanid eras. Some have suggested that the batteries may have been used medicinally. Other scientists believe the batteries were used for electroplating—transferring a thin layer of metal to another metal surface—a technique still used today and the focus of a common classroom experiment.

Windwheels were developed by the Babylonians ca. 1700 BC to pump water for irrigation. In the 7th century, Persian engineers in Afghanistan developed a more advanced wind-power machine, the windmill, building upon the basic model developed by the Babylonians.[4][5]

The philosophy of the Islamic period was influenced by Greece, India, and by the Iran of the pre-Islamic period. Ibn Khurram writes in his book “al Melal wa al-Nehal” that Muhammad Bin Zakaria Razi took from the ancient Iranians five principles in which he believed:

*Creator- Ahuramazda, Satan-Ahriman, Moment-Time, Place-Locality, Essence-Spirit*

The same is mentioned by Massoudi in his book Moruj-oz-Zahab. Shahaboddin Sohrevardi, in the preface to his philosophical book, quotes old Iranian terms and expressions derived from Zoroastrians, Manians, and Zarvanians.

The Abbasids paid attention to science. Scientific interest in the courts of caliphs of Baghdad and the Emirs of Persia such as Khwarazmshahis, Samanids, Ziaiads, and the Bowayyids and Dialameh of Isfahan reached its peak at the end of the 11th and beginning of 12th centuries, but declined under the Turkmen and Mongol invasions. Some of the Iranian translators who knew Syriac, Greek and Pahlavi languages and translated many scientific books into Arabic were Al Bakhtyasu, Al-Nowbakht, Al-Masouyeh, Abdollah Ibn Moqaffa, Omar Ibn Farakhwan Tabari, Ali Ibn Ziad Tammini, Ibn Sahi, Yusof Al Naelq, Isa Ibn Chaharbakht, and Yatir Ibn Rostam Al Kouhi. The latest was Abu Reyhan Birooni, the mathematician and famous translator of Indian books.