Good and evil, our moral prison,
Fate in the way of logic and reason

Joy and sorrow passing like season,
Is the victim of far worse treason.

Omar Khayyam

An Amazing Trip

“... The major memory I have is just how friendly people were. I recall in Esfahan a young man asking where I was from and I said New Zealand: he responded with a smile and said ‘giday Kiwi Bro’ which is street talk amongst young New Zealanders. While in Iran, many people asked me what my impressions of the country were: I could honestly say I haven’t been in your country long enough to really understand fully but that I felt very comfortable and that people were very kind, with a great sense of hospitality. Esfahan and its architecture and Persepolis are extraordinarily impressive places-I feel privileged to have had the chance to visit.

Esfahan, Iran - Sep 2009

Please thank all your colleagues-I have wonderful memories of my visit to Iran and I hope I have a chance to visit again with my wife.”

Kenneth P. McNatty Ph.D.
University Prof. of Cell Biol. & Biotech., University of Wellington, New Zealand

Research Projects in Royan Institute

Projects on Process

- Study of expression of heat shock proteins during differentiation of murine carcinoma P19 cells into neural cells
- Evaluation of factors that induce differentiation of mouse embryonic stem cells to cholinergic neurons

Finished Projects

- Autologous bone-marrow stem cell transplantation for infarcted myocardium
- Evaluation of the spermogram quality in the Men with an-ovulatory spouse

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Men with bilateral or unilateral absence of the vas deferens in the morphologic genital phenotype of 119 infertile men evaluated the role of different CFTR gene mutations in the genetic phenotype of men lacking at least 1 vas deferens, we investigated the correlation between genital phenotype and cystic fibrosis of men with azoospermia. To study the correlation of men with CFTR gene mutations, we investigated for infertility and approximately 10% of these phenotypes are found in 1%-2% of men (CBAVD) and congenital unilateral absence of the vas deferens (CUAVD). Congenital bilateral absence of the vas deferens and congenital unilateral absence of the vas deferens (CBAVD and 7 CUAVD patients). Renal, scrotal, and transrectal ultrasonography were systematically performed. CFTR mutations and (TG)m(T)n polymorphism were analyzed, and epididymal and seminal vesicular abnormalities and testicular volume were compared among men with 2, 1, or no CFTR gene mutation, with or without the 5T allele. Our results showed that patients with CBAVD and renal agenesis have the same reproductive tract abnormalities as those with CUAVD, and reproductive tract abnormalities were independent of the subtypes of CFTR genotype in patients with absence of the vas deferens and CFTR gene mutations. Seminal vesicles did not differ between patients with or without CFTR gene mutation, but epididymal abnormalities were more frequent in CBAVD men without the mutation. Low testicular volume was observed in CBAVD men without the CFTR and IVS8-5T mutations, so we can hypothesize that a testicular factor (genetic or environmental) rather than CFTR gene mutations plays a role in determining the phenotype. Further studies using common diagnostic criteria are required to confirm our observations.

Thus, it can be concluded that these parameters may affect DNA fragmentation, independently of each other. The results reveal that in ICSI DNA methylation and DNA fragmentation. In addition, no negative correlation was observed between DNA fragmentation and fertilization rate. Furthermore, unlike in IVF patients, DNA fragmentation showed a significant negative correlation with fertilization rate in ICSI. A significant positive 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.

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.

Correlation between CFTR gene mutations in Iranian men with congenital absence of the vas deferens and anatomical genital phenotype.

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Conclusions: Cell cycle stage and synchronization of donor cells are important factors influencing the success of somatic cell nuclear transfer. This study examined whether serum starvation has any effect on specific cell death. We also studied the effects of serum starvation, culture to confluence, and full confluence (confluent + 72 h) on cell cycle characteristics and apoptosis of goat dermal fibroblast cells. The cells were obtained from the ear of a 1.5-year-old female goat. The following experimental groups were analysed for fibroblast cells: (i) normally growing, (ii) confluent, (iii) full confluence, (iv) cells starved for 48 h and (v) cells starved for 72 h. Analysis of cell cycle distribution by flow cytometry showed that 45.6% and 51.88% of normal cycling cells were at the G0 and G1 phases respectively. In the confluent group, 80% of the cells were arrested in the G0/G1 phase. Serum starvation for 48 and 72 h arrested 84.78% and 90.1% cells at the G0/G1 phase respectively which showed a significant difference when compared with the control group (p < 0.05). Double staining by PI and FITC distinguishes G0 phase from G1 phase. In the confluent group, 91.53% of cells were at G0/G1 stage, but in contrast to the serum starved group, this high percentage of G0/G1 cells was mainly associated with G1 cells. Under normal culture conditions, 6.39% of cells underwent early apoptosis. In the confluent group 8.93% of cells showed early apoptosis. Serum starvation for 48 and 72 h caused early apoptosis in 8.91 and 39.83% of the cells respectively. Full confluence treatment did not increase the number of apoptotic cells significantly (8.67%). After 72 h, serum starvation significantly increased early apoptosis (p < 0.05). In conclusion, the use of full confluency is suitable for cell cycle synchronization because it arrests cells at the G0/G1 phase and also induces less apoptosis in comparison with the serum starvation group.
Shiraz is the sixth most populous city in Iran and is the capital of Fars Province. Shiraz is located in the southwest of Iran on the Rudkhaneye Khosh seasonal river. Shiraz has a moderate climate and has been a regional trade center for more than one thousand years.

The earliest reference to the city, as Tiraziš, is on Elamite clay tablets dated to 2000 BC. In the 13th century, Shiraz became a leading center of the arts and letters, thanks to the encouragement of its ruler and the presence of many Persian scholars and artists. Shiraz was the capital of Persia during the Zand dynasty from 1750 until 1781, as well as briefly during the Safavid period.

Shiraz is known as the city of poets, wine and flowers. It is also considered by many Iranians to be the city of gardens, due to the many gardens and fruit trees that can be seen in the city. Shiraz has had major Jewish and Christian communities. The crafts of Shiraz consist of inlaid mosaic work of triangular design; silver-ware; pile carpet-weaving and weaving of kilim, called gilim and jajim in the villages and among the tribes. In Shiraz industries such as cement production, sugar, fertilizers, textile products, wood products, metalwork and rugs dominate. Shiraz also has a major oil refinery and is also a major center for Iran’s electronic industries: 53% of Iran’s electronic investment has been centered in Shiraz. Shiraz is home to Iran’s first Solar Power Plant.

Pre-Islamic

Shiraz is most likely more than 4,000 years old. The name Shiraz is mentioned in cuneiform inscriptions from around 2000 BC found in south western corner of the Shiraz city. According to some Iranian mythological traditions, it was originally erected by Tahmuras Diveband, and afterward fell to ruin. The oldest sample of wine in the world, dating to approximately 7,000 years ago, was discovered on clay jars recovered outside of Shiraz.

In Achaemenian era, Shiraz was on the way from Susa to Persepolis and Pasargad. In Ferdowsi’s Shahnāma it has been said that Artabanus V, the Parthian Emperor of Iran, expanded his control over Shiraz. Ghasre Abu-Nasr (meaning “the palace of AbuNasr”) which is originally from Parthian era is situated in this area. During the Sassanid era, Shiraz was in between the way which was connecting Bishapur and Gur to Istakhr. Shiraz was an important regional center under the Sassanians.

Islamic period

The city became a provincial capital in 693, after the Arab invaders conquered Istakhr, the nearby Sassanian capital. As Istakhr fell into decline, Shiraz grew in importance under the Arabs and several local dynasties. The Buwayhid empire (945 — 1055) made it their capital, building mosques, palaces, a library and an extended city wall. It was also ruled by Seljuk and Khwarezmid before the Mongol conquest. The city was spared destruction by the invading Mongols, when its local ruler offered tributes and submission to Genghis Khan. Shiraz was again spared by Tamerlane, when in 1382 the local monarch, Shah Shoja agreed to submit to the invader. In the 13th century, Shiraz became a leading center of the arts and letters, thanks to the encouragement of its ruler and the presence of many Persian scholars and artists. For this reason the city was named by classical geographers Dar al’Elm, the House of Knowledge. Among the important Iranian poets, mystics and philosophers born in Shiraz were the poets Sa’idi and Hafez, the mystic Roozbeh, and the philosopher Mulla Sadra.
Researchers Launch Phase II Trial of Stem Cells and Acute Heart Attack

Science Daily (Dec. 8, 2009) The second phase of a clinical trial testing a new stem-cell-based therapy on injured heart muscle has been launched by researchers at The University of Texas Medical School at Houston. It is the only study site in the Texas Medical Center.

Results from Phase I of the trial are published in the Journal of the American College of Cardiology. Researchers reported that patients were treated safely with intravenous adult human mesenchymal stem cells (Prochymal) after a heart attack. In addition, they had fewer arrhythmias, improved heart and lung function, and improvement in overall condition.

“We are able to use a stem cell product that is on the shelf without prior preparation of anything from the patient, and this product appears to be able to help the heart muscle recover after a heart attack,” said Ali E. Denktas, M.D., the trial’s Houston site principal investigator and assistant professor of cardiology at the UT Medical School at Houston. “This means patients have the potential to recover quicker with less risk of an immediate secondary attack.”

In many cell-based therapies, doctors harvest the patient’s own cells, process them and then return them to the patient. Prochymal, developed by Osiris Therapeutics, Inc., contains adult mesenchymal stem cells from healthy donors. The cells can be stored at an emergency center until needed. For purposes of the Phase II study, Prochymal must be administered within seven days of a heart attack.

Researchers have just enrolled the first patient for the Phase II study at the Houston site. Heart attack patient Melvin Dyess, 49, received an intravenous infusion of either the stem cells or placebo as part of the protocol of the double-blind study. The procedure took place at the Memorial Hermann Heart & Vascular Institute-Texas Medical Center. Denktas said UT Medical School researchers will continue to enroll willing patients into the Phase II study who are admitted to Memorial Hermann-Texas Medical Center. Neither patients nor their physicians know whether they received the stem cell drug.

Affecting 1.1 million Americans every year, heart attacks are caused by disruptions to the heart’s blood supply. Muscle cells can die within minutes of the blood being reduced or cut off. The body has a limited capacity to regenerate new heart muscles and repair wounds to the heart.

Denktas said while cell-based therapies including Prochymal appear to work, researchers are not sure why. Previous studies have shown that adult stem cells have a “homing device” that sends them to the point of injury in the human body.

“Studies with acute myocardial infarction (heart attack) show that if you give cells of some sort to the heart relatively quickly, five to 10 days after the heart attack, they nest themselves in the heart and the heart improves. But, why it improves is debatable,” Denktas said. Adult mesenchymal stem cells appear to have anti-inflammatory, anti-fibrotic, and tissue regenerative capacities, as shown in both animal studies and human clinical trials, according to Osiris Therapeutics, Inc.

Lead author of the study is Joshua M. Hare, M.D., of the Cardiovascular Division and the Interdisciplinary Stem Cell Institute of the Miller School of Medicine at the University of Miami. In addition to UT Medical School, institutions involved in the Phase I study, which was funded by Osiris Therapeutics, Inc., included Minneapolis Heart Institute, Arizona Heart Institute, The Johns Hopkins Hospital, University of California San Diego, Heart Hospital of Austin, The Care Group in Indianapolis, Swedish Medical Center in Seattle, Rush University Medical Center and New York Presbyterian Hospital.


66th Annual Meeting of the ASRM

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11th Congress of the European Society of Contraception and Reproductive Health

ROYAN International Twin Congress
11th Congress on Reproductive Biomedicine & 6th Congress on Stem Cells Biology & Technology

- Sep 15 – 17, 2010 - Tehran – Iran
- Deadline 10 May 2010
- Email: royancongress@gmail.com

11th ROYAN International Research Award
Reproductive Biomedicine & Stem Cells Biology & Technology

- Sep 15 -17, 2010
- Deadline 10 April 2008
- E-mail: Info@RoyanInstitute.org

- May 19-22, 2010
- The Hague, NETHERLANDS