**Evaluation of sperm selection procedure based on hyaluronic acid binding ability on ICSI outcome.**

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**PURPOSE:** To compare the efficiency of routine sperm selection method with HA-selection procedure for fertilization rate, embryo development, implantation and pregnancy rates as well as evaluating the relationship between HA-binding ability with sperm protamine deficiency and DNA fragmentation.

**METHODS:** Semen samples were obtained from the 50 couples undergoing ICSI. The percentage of fertilization rate, cleavage and quality of embryos compared between two procedures (routine sperm selection and HA-binding selection). The semen samples were assessed for DNA fragmentation and protamine deficiency by sperm chromatin dispersion (SCD) test and Chromomycin A3 (CMA3) staining, respectively.

**RESULTS:** A significant inverse correlation was observed between percentage of HA binding with protamine deficiency, DNA fragmentation and abnormal sperm morphology (P < 0.05). Furthermore, in current study, oocytes inseminated by HA sperm selection procedure had significantly higher fertilization rate (P < 0.05). While the pregnancy and implantation rates were insignificantly increased.

**CONCLUSION:** The results suggest that normal sperm have higher chance to bind HA and therefore, HA sperm selection procedure may select sperm with normal protamine content and low DNA fragmentation, but to confirm the effect of HA sperm selection on the ICSI outcome requires further studies.

**Differentiation of human embryonic stem cells into functional hepatocyte-like cells in a serum-free adherent culture condition.**

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Embryonic stem cells (ESCs) are considered one promising new approach to generate a transplantable cell source for the treatment of liver diseases. Because traditional methods, such as the initial formation of embryoid body in the presence of serum result in all three germ layer derivatives, strategies have been utilized that favor cell-specific differentiation to generate more uniformity. Here, we have presented the use of a multistep protocol with growth factors in a serum-free adherent culture configuration to mediate the hepatocyte differentiation of human ESCs (hESCs). The differentiated cells exhibited characteristic hepatocyte morphology, ultrastructure, and expressed hepatic-related genes as shown by reverse transcription-polymerase chain reaction and displayed antibody detectable expression of markers specific for hepatic maturation. These hepatocyte-like cells also demonstrated evidence of albumin and alpha-fetoprotein secretion, glycogen storage, urea production, uptake of low-density lipoprotein, and indocyanine green. Therefore, we propose that the hepatocyte-like cells derived from hESCs by the present method may provide a useful model for the studies of key events during early liver development and a potential source of drug screening and transplantable cells for cell-replacement therapies.
Science News

Cancer Stem Cells Isolated: Could Lead To New Drugs To Stop Cancer From Returning

Science Daily (Sep. 12, 2008)
After years of working toward this goal, scientists at the OU Cancer Institute have found a way to isolate cancer stem cells in tumors so they can target the cells and kill them, keeping cancer from returning. A research team led by Courtney Houchen, M.D., and Shrikant Anant, Ph.D., discovered that a particular protein only appears in stem cells. Until now, researchers knew of proteins that appeared in both regular cancer cells and stem cells, but none that just identified a stem cell.

The group has already begun work to use the protein as a target for a new compound that once developed would kill the stem cells and kill the cancer. By targeting the stem cells, scientists and physicians also would be able to stop the cancer from returning. Houchen and Anant are focusing on adult cancer stem cells because of the major role they play in the start of cancer, the growth of cancer, the spread of cancer and the return of cancer.

Current therapies generally do not target stem cells in tumors. This allows stem cells to wait until after chemotherapy or radiation treatments to begin dividing. Researchers believe these stem cells are often responsible for the return of cancer after treatment. The identification of the stem cell marker enables researchers to develop new therapeutics that can target these cells.

Adult stem cells work as essential building blocks in organs by replenishing dying cells and regenerating damaged tissues. Unlike embryonic stem cells, the use of adult stem cells in research and therapy is not controversial because the production of adult stem cells does not require the destruction of an embryo. Researchers expect to have initial testing completed to begin the first phase of clinical trials within 5 years led by Russell Postier, M.D. The compound, if successful in human trials, is expected to be available to the public within 10 years.

A quarter of the funding for the cancer research comes from an $800,000 grant from the National Institutes of Health with remaining funds from the University of Oklahoma College of Medicine.


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9th Royan International Research Award

Last Award’s Result & Ceremony
Aug 27-29, 2008 - Tehran – Iran

Introduction:
The underlying objective of this Award is first to support the researchers financially and scientifically regard less 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.

http://community.webshots.com/user/allizadeh60
Yazd (pronounced /jæzd/) (In Persian: ﻲﺯﺩ), is the capital of Yazd province, “the second most ancient and historic city in the world”[citation needed] and a centre of Zoroastrian culture. The city is located some 175 miles southeast of Isfahan. In 2005 it had an estimated population of 433,836 people.[1] In 2006 it had an estimated population of 505,037. [2]. Because of generations of adaptations to its desert surroundings, Yazd is an architecturally unique city. It is also known in Iran for the high quality handicrafts, especially silk weaving, and its sweets shops.

Geography
Yazd with the area of 131,551 km² is situated at an oasis where the Dasht-e Kavir desert and the Dasht-e Lut desert meet, the city is sometimes called “the bride of the Kavir” because of its location, in a valley between Shir Kuh, the tallest mountain in the region at 4075 m. above sea level, and Kharaneq. The city itself is located at 1203 m. above sea-level, and covers 16,000 km². According to the administrative division rules, the Yazd province is divided into 10 districts, each includes at least one town and a number of villages. These districts are: Abarkuh, Ardakan, Bafq, Khatam, Maybod, Mehriz, Tabas, Sadough, Taft and Yazd.

Climate
Yazd is the driest major city in Iran, with an average annual rainfall of only 60 millimetres (2.4 in), and also the hottest north of the Persian Gulf coast, with summer temperatures very frequently above 40 °C (104 °F) in blazing sunshine with no humidity. Even at night the temperatures in summer are rather uncomfortable. In the winter, the days remain mild and sunny, but in the morning the thin air and low cloudiness cause very cold temperatures that can sometimes fall well below 0 °C (32 °F).

History
The city has a 3000 year long history, dating back to the time of the Median empire, when it was known as Ysatis (or Issatis). The present city name, however,
may have been derived from Yazdegerd I, a Sassanid ruler. The city was definitely a Zoroastrian centre during Sassanid times. After the Islamic conquest of Persia, many Zoroastrians fled to Yazd from neighbouring provinces. The city remained Zoroastrian even after the conquest by paying a levy, and only gradually did Islam come to be the dominant religion in the city. Because of its remote desert location and the difficulty of approach, Yazd had remained largely immune to large battles and the destruction and ravages of war. For instance, it was a haven for those fleeing from destruction in other parts of Persia during the invasion of Genghis Khan. It was visited by Marco Polo in 1272 who remarked on the city’s fine silk-weaving industry. It briefly served as the capital of the Muzaffarid Dynasty in the 14th century, and was sieged unsuccessfully in 1350–1351 by the Injuids under Shaikh Abu Ishaq. The Friday (or Congregation) Mosque, arguably the city’s greatest architectural landmark, as well as other important buildings, date to this period. During the Qajar dynasty (18th Century AD) it was ruled by the Bakhtiar Khans. There is a very amazing thing about Yazd and its people who moved to the east of Yazd. In the rule of the Savafis (16. century) people from Yazd migrated to a place and called it Yazdi: This place is currently on the Iranian-Afghan border in the province of Farah, in Farah city in Afghanistan. The people of Yazdi in Farah city, in the province of Farah, are all Persians and Shi’ite (Shi’a) Muslims. They speak with an accent that is very similar to the Iranian people of Yazd. These Shi’ite-Persians in Yazdi of Farah city are forgotten.

Architecture and Heritage

Yazd is of foremost importance as a centre of Persian architecture. Because of its climate, it has one of the largest networks of qanats in the world, and Yazdi qanat makers are considered the most skilled in Iran. To deal with the extremely hot summers, many old buildings in Yazd have magnificent windcatchers, and large underground areas. The city is also home to prime examples of yakhchals, the latter of which were used to store ice retrieved from glaciers the nearby mountains. Yazd is also one of the largest cities built almost entirely out of adobe. Yazd's heritage as a centre of Zoroastrianism is also important. There is a Tower of Silence on the outskirts, and the city itself has a Fire Temple, which holds a fire that has been kept alight continuously since 470 AD. Presently, Zoroastrians make up a significant minority of the population, around 20 - 40,000 or 5 to 10%.

13th World Congress on Human Reproduction
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Sperm DNA damage: from research to clinic
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