findings
The Newsletter of the Nebraska Coalition for Lifesaving Cures Volume 8, Issue 4
Nebraska Coalition for Lifesaving Cures

Truhlsens Honored

Nebraska Coalition for Lifesaving Cures celebrates seven years of recognizing individuals in their support of research

Dorothy and Stanley Truhlsen, MD were this year's honorees at the annual luncheon sponsored by the Nebraska Coalition for Lifesaving Cures, recognizing individuals in the community who have been long-time supporters of research.

In his remarks at a luncheon on April 27 at Happy Hollow Club, Dr. Truhlsen said research is vital to improving society. The longtime ophthalmologist at the University of Nebraska Medical Center told the audience that research impacts all of us.

Dorothy and Stanley M. Truhlsen, MD

"It has changed the way we communicate and how we travel," he said. "Research is behind all of this and many other disciplines. In medicine, it has contributed to astonishing changes."

Truhlsen noted that life expectancy has gone from approximately 47 years to 80 years as a result of the research that led to the discovery of insulin, penicillin and many antibiotics.

In ophthalmology, research has led to the use of robotic and laser surgery and the development of contact lenses.

"I'm fascinated by the possibilities of stem (cell) research," Dr. Truhlsen said.

The Truhlsen Family (Left to Right): Peter Mitchell, Jenny Mitchell, Barbara Mitchell (daughter), Stanley Truhlsen, Bill Truhlsen (son), Dottie Truhlsen and Joan Truhlsen

Dr. Truhlsen pointed out that UNMC is already using stem cells in some of its ophthalmologic research for new treatments of eye diseases that can cause blindness.

Left to Right: Beverly Maurer, Stanley Truhlsen, MD, Dorothy Truhlsen, Richard Holland, Harold Maurer, MD

Peter Whitted, MD, clinical instructor of ophthalmology at UNMC praised the Truhlsens for their generosity to the community.

"No couple is held in higher esteem," he said. "They are committed to leaving this community a far better place than when they arrived."

A national figure in ophthalmology, Dr. Truhlsen was president of the American Academy of Ophthalmology in 1983 and the American Ophthalmological Society in 1996. In 2001, he received the Lucien Howe Medal from the AOS, one of the most prestigious awards in ophthalmology, and in 2003, he received the Chancellor's Distinguished Service Award at UNMC's spring commencement.

Past Honorees:

Richard D. Holland	2008
James O. Armitage, MD	2007
Harold and Marian Andersen	2006
Rik and Dr. Shannon Bonness	2005
Michael F. Sorrell, MD	2004
Charles Durham	2003

Tumor Growth Neutralized in Embryonic Stem Cell Therapy

May 7, 2009 | Medical News Today

Researchers at the Hebrew University of Jerusalem have discovered a method to potentially eliminate the tumor-risk factor in utilizing human embryonic stem cells. Their work paves the way for further progress in the promising field of stem cell therapy.

Human embryonic stem cells are theoretically capable of differentiation to all cells of the mature human body (and are hence defined as "pluripotent"). This ability, along with the ability to remain undifferentiated indefinitely in culture, makes regenerative medicine using human embryonic stem cells a potentially unprecedented tool for the treatment of various diseases, including diabetes, Parkinson's disease and heart failure.

A major drawback to the use of stem cells, however, remains the demonstrated tendency of such cells to grow into a specific kind of tumor, called teratoma, when they are implanted in laboratory experiments into mice. It is assumed that this tumorigenic feature will be manifested upon transplantation to human patients as well. The development of tumors from embryonic stem cells is especially puzzling given that these cells start out as completely normal cells.

A team of researchers at the Stem Cell Unit in the Department of Genetics at the Silberman Institute of Life Sciences at the Hebrew University has been working on various approaches to deal with this problem.

In their latest project, the researchers analyzed the genetic basis of tumor formation from human embryonic stem cells and in their derived tumors. By neutralizing the activity of survivin in the undifferentiated cells as well as in the tumors, the researchers were able to initiate programmed cell death (apoptosis) in those cells.

The inhibition of this gene just before or after transplantation of the cells could minimize the chances of tumor formation, but the researchers caution that a combination of strategies may be needed to address the major safety concerns regarding tumor formation by human embryonic stem cells.

A report on this latest project of the Hebrew University stem cell researchers appeared in the online edition of Nature Biotechnology. The researchers are headed by Nissim Benvenisty, who is the Herbert Cohn Professor of Cancer Research, and Ph.D student Barak Blum. Others working on the project are Ph.D student Ori BarNur and laboratory technician Tamar Golan-Lev.

Source: Jerry Barach, The Hebrew University of Jerusalem

Patent Obtained for Drug Screening Human Embryonic Cell Derived-Endoderm Cells

June 5, 2009 | Source: Novocell Press Release

Novocell, Inc., a stem cell engineering company, announced that it has received a patent with method claims covering the use of endoderm cells derived from human embryonic stem cells (hESCs) for drug discovery. This is the second U.S. patent issued to Novocell related to human endoderm. The first patent, issued on March 31, 2009, is directed to an in vitro human endoderm composition.

The patented discovery comes from Novocell's recognized research and development programs to commercialize pluripotent stem cells for broad research and therapeutic uses, in particular, for an innovative cell therapy for the treatment of diabetes. This new patent protects technology that was developed as a research method for drug discovery.

The use of endoderm for drug screening is a cornerstone of our drug discovery platform," said John West, President & CEO of Novocell. "Embryonic stem cells can be grown almost indefinitely in culture, and therefore a limitless supply of endoderm and endoderm-derived cells can be generated. This meets a long-standing need of major pharmaceutical companies of human cells. Our technology enables the identification of potential endoderm differentiation factors, leading to potential discovery of new drugs & agents for research, and ultimately, therapeutic use."

hESCs Found to be Safe Source of Cells to Treat Eye Diseases

June 11, 2009

Source: Stem Cell Research News/Stem Cell Business News

Human embryonic stem cells (hESCs) – derived retinal pigment epithelium (RPE) cells produced under manufacturing conditions suitable for human clinical trials – have been found to be safe and effective over the long term, according to a new study by scientists at Worcester, Massachusetts-based Advanced Cell Technology, Inc., and collaborators at the Casey Eye Institute at Oregon Health and Science University.

Two important early potential hESC applications are the use of RPE for the treatment of age-related macular degeneration and Stargardt disease, an untreatable form of eye disease that leads to early-onset blindness.

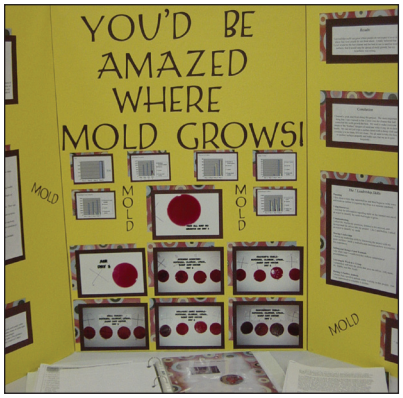
"We're delighted with these results," said ACT CSO Robert Lanza, co-senior author of the study. "Everything looks great so far. Based on these and other studies, we're on schedule to file an IND with the FDA to begin human clinical trials sometime in the next 3 to 4 months. Barring any surprises, Stargardt disease and macular degeneration are likely to be the next two clinical applications of ES technology."

Young Scientists Benefit From Coalition Support

April, 2009

In 1993, the University of Nebraska Medical Center sponsored the first State Science Meet. The goal was to attract Nebraska eighth graders to purse careers in science by providing them a fun, educational experience.

Two students show their "Got Science?" t-shirts at the North Platte Science Meet



A Fremont student's display on Mold

This year the Nebraska Coalition for Lifesaving Cures was pleased to sponsor five of the nine regional science meets involving 32 schools and 555 students.

Students are selected to attend the state meet by entering a science project in a regional meet. During the school year, students work on science experiments. The students create displays to feature their work and explain their research to judges at one of the regional meets held in February, March, or April.

In June, the top 100 projects from the regional meets are displayed at the State Science Meet at UNMC.

The Ainsworth Science Meet

Coalition Supports 2009 Science Teacher Retreat

Science teachers are a key to tomorrow's researchers and health professionals. Through keeping the excitement of science in the classroom, teachers are able to engage more student interest in the sciences.

This year the Nebraska Coalition for Lifesaving Cures provided funding for 30 teachers from across the state to attend the 2009 Science Teacher Retreat at UNMC.

Since 1997, based on available funding, UNMC has provided one-to-five day workshops for rural science teachers. Each year the teachers are surveyed prior to the workshop and a theme is selected for the week. Topics included in this year's retreat: imaging technology, high tech brain surgery, protein folding, and disease mapping processes.

Left to right: Renee Ekhoff (Grand Island), Chelle Gillan (Central City), Cassie Behnke (Scottsbluff), and Kelee Vornhagen (Kearney) observe the results of their experiment. Here, they learn to use simple household products to simulate electrophoresis in order to separate a simple molecular mixture.

ABOVE: Susan Bopp-Esch, a science teacher at Columbus Middle School, learns about different types of amino acids. Here, she is classifying foam amino acid sidechain models on the magnetic "chemical properties circle" according to its chemical properties.

BELOW: Deb Koehlmoss (science teacher at Pierce Senior High School) and Dale Hochstein (science teacher at Wayne High School) fold their 15-amino acid protein according to the chemical properties of its sidechains, in search of their protein's tertiary structure.

findings

Nebraska Coalition for Lifesaving Cures
8401 West Dodge Road, Suite 111
Omaha, NE 68114

402-390-2461
www.nebraskacures.com

Cures Save Lives

PRSRT STD
U.S. POSTAGE
PAID
OMAHA, NE
PERMIT NO. 798