Blocking Tumor’s Death Switch Stops Tumor Growth

Every cell contains machinery for self-destruction, used to induce death when damaged or sick. But according to a new research study, a receptor thought to mediate cell suicide in normal cells may actually be responsible for the unrestrained growth of cancerous tumors.

Blocking the activity of this “death receptor” can stop and even reverse the growth of tumors in human tissue culture and mice, scientists from Northwestern University Feinberg School of Medicine and the University of Chicago report. This unexpected inhibition suggests a promising new strategy for cancer therapy.

Cell self-destruction, known as apoptosis, helps the body eliminate unwanted cells. Under normal circumstances, when the death receptor called CD95 is activated by specific proteins, the process of apoptosis is triggered. This cell suicide is an important process for immune function and to prevent the formation of uncontrolled, cancerous cell growth.

Scientists have long speculated that the loss of “death receptors” may be an early step in the formation of tumors. However, many cancers continue to express high levels of CD95, even as the cells rapidly grow and proliferate. “These data raised the intriguing possibility that CD95 could actually promote the growth of tumors,” said lead author Marcus Peter, Professor of Hematology/Oncology at Feinberg. “The most apoptosis-sensitive cells in vitro are all cancer cells. But how are they so apoptosis-sensitive and yet don’t die?”

The team studied the role of CD95 in tumors using several human cancer cell lines, liver cancer mouse models, and models of ovarian cancer. Selectively deleting or reducing CD95 in these tumors dramatically slowed cell growth and, in some cases, actually killed the cells.

When researchers reduced the activator for CD95 in the cancer cell lines, the effect was even more dramatic. The tumors stopped growing; some of them even died.

A drug that blocks the CD95 ligand, a molecule that activates CD95, is already being tested in a phase II clinical trial. Though originally developed to stop the death of cells affected by degenerative diseases and AIDS, the drug may also be effective in killing tumor cells, this research suggests.

Clinical studies hope to test an inhibitor of the CD95 ligand in combination with chemotherapy. Chemotherapy can induce a stress response during which the concentration of CD95 ligand increases, which may further promote the growth of tumors.

For more information on the study, visit http://www.northwestern.edu/newscenter/stories/2010/05/blocking.html
Cancer Center News and Notes

Wrinkles are Scarier Than Skin Cancer for Young Tanners

What’s the most effective way to convince young women to cut back on their indoor tanning, a habit that hikes their risk of melanoma, the deadliest form of skin cancer, by 75 percent? Warn them that it will cause leathery, wrinkled skin.

“They’re not worried about skin cancer, but they are worried about getting wrinkled and being unattractive,” said June Robinson, MD, Professor of Dermatology at Northwestern University Feinberg School of Medicine and senior author of a paper in Archives of Dermatology reporting the findings. The study examined the best strategy to wean college-age women who are considered addicted or pathological tanners from tanning salons.

“The fear of looking horrible trumped everything else,” Robinson said. “It was the most persuasive intervention, regardless of why they were going to tan.” The research showed warning them about the effects on their appearance caused a 35 percent drop in their indoor tanning visits, which were measured at intervals up to six months after the intervention.

The National Cancer Institute found that melanoma rates among Caucasian women aged 15 to 39 rose 50 percent between 1980 and 2004. The World Health Organization recently reclassified indoor tanning beds to its highest cancer risk category.

For more information on the study, visit: http://www.feinberg.northwestern.edu/news/2010H-May/Wrinkles_Skin%20Cancer.html

17th Annual Cancer Survivors’ Celebration & Walk was a Day to Remember!

More than 3,600 people gathered in Chicago's Grant Park on Sunday, June 6 for the Lurie Cancer Center’s signature event – the 17th Annual Cancer Survivors’ Celebration & Walk.

The blue summer sky was a beautiful backdrop for the purple and white t-shirts worn by cancer survivors, families and friends as they strolled along the lakefront. The picnic lunch, kids' activities, entertainment and speakers combined to make it a day to remember.

The morning ended with 11-year-old cancer survivor Chase Malackowski sharing wisdom from his favorite movie, “Star Wars.” “Never tell me the odds’ is a lesson I learned from Hans Solo in Episode Four,” he told the crowd. “I knew from the beginning I would get through my cancer and recover.” Chase urged his fellow cancer survivors to make the most of “the lessons we have learned, the experiences we have witnessed, and the celebration we share today.”

To view Walk photos and video, visit: http://www.caner.northwestern.edu/walk

See you Sunday, June 5, 2011 at the 18th Annual Cancer Survivors Celebration & Walk!
Cancer Center News and Notes

Wood-Prince family gives Children’s Memorial Hospital an endowment gift of nearly $3 million

Children’s Memorial Hospital has received a nearly $3 million endowment gift from the Frederick H. Prince 1932 Trust on behalf of the Wood-Prince family.

This generous gift was directed to the hospital by Meredith and Patrick Wood-Prince to establish the Frederick Henry Prince Memorial Fund to support the highest priorities in the hospital’s Division of Hematology, Oncology and Stem Cell Transplant.

“The Wood-Prince family’s generosity ensures that our outstanding care for children with cancer and blood disorders will be strengthened and provides significant momentum for our program’s enhancement as we move toward the 2012 opening of our new facility, Ann & Robert H. Lurie Children’s Hospital of Chicago,” said Patrick M. Magoon, president and CEO of Children’s Memorial Medical Center.

“In order to improve therapies and discover cures for children with cancer and blood disorders, gifts like that of the Wood-Prince family are crucial. This support will directly translate into enhancements in care, research and advanced education for future pediatric cancer specialists, which will make a difference in many children’s lives,” said Morris Kletzel, Head of the Division of Hematology, Oncology and Stem Cell Transplant. “When we move to our new location in Lurie Children’s, strengthened collaborations with the Lurie Cancer Center will provide the platform to make this contribution go even further, which we foresee resulting in even better outcomes for our patients.”

Northwestern Races to Help Raise $250,000 for NBTI

The May 16 2010 Magellan Development Chicago Spring Half-Marathon and 10K raised nearly $250,000 for the Northwestern Brain Tumor Institute (NBTI), its official charity partner. In addition to NBTI co-directors Jeffrey Raizer, MD, and James Chandler, MD, our Northwestern runners participating in the sold-races included: Mark Agulnik, Jennifer Bowker, Marcus Bredel, Daniel Cooper, Julie Captain Fredrickson, Christopher Getch, Holly Gibout, Sean Grimm, Kristine Kim, Kris Lathan, John Liu, Mary Ellen Maher, Sharon Markman, Judith Mayzel, Maggie Montiel, Kenji Muro, Dennis M. Murphy, Katrina Van Gerpen, Renee Webb and Anna Wright.

“Magellan chose to support NBTI when my husband was diagnosed at the hospital,” said Robin Loewenberg Berger, Chief Marketing Officer of Magellan Development and co-chair of the event. “We want to raise awareness of this vital program.” NBTI patient Jose Feliciano, an avid runner who logs an average of 15-20 miles each week, ran in honor of all NBTI patients and the members of the Brain Tumor Support Group. Group members were spread out throughout the course to cheer him, and other runners, on.
Men who have just had their cancerous prostate gland removed have one pressing question for their doctors: Am I cured? But conventional tests haven’t been sensitive enough to provide a concrete answer. Current tests that measure the level of protein called PSA (prostate-specific antigen), which signals the presence of cancer, often detect no PSA, only to have cancer return in up to 40 percent of the cases.

New research from the Feinberg School of Medicine and the University International Institute for Nanotechnology shows that an ultrasensitive PSA test using nanoparticle-based technology (VeriSens™ PSA, Nanosphere, Inc., research-use-only) may be able to definitively predict after surgery if the cancer is cured long term or if it will recur.

The new test, which is based upon assays invented at Northwestern in the laboratories of co-principal investigator Chad A. Mirkin, PhD, George B. Rathmann Professor of Chemistry in the Weinberg College of Arts and Sciences, is 300 times more sensitive than currently available commercial tests and can detect a very low level of PSA that indicates the cancer has spread beyond the prostate. The test also may pick up cancer recurrence at a much earlier stage, when secondary treatment is most effective for a patient’s survival.

“This test may provide early and more accurate answers,” said co-principal investigator C. Shad Thaxton, MD, Assistant Professor of Urology at Feinberg. “It detects PSA at levels in the blood that cannot be detected by conventional tests. It may allow physicians to act at the earliest and most sensitive time, which we know will provide the patient with the best chance of long-term survival.”

Not only may the new test more accurately predict the course of the disease, it also gives an early indication of whether secondary treatments, such as radiation and hormone therapy, are working. If not, then doctors can quickly begin alternative treatment and refer patients to clinical trials.

The study results were presented June 2nd at the American Urological Association 2010 Annual Meeting. “These studies suggest that the nanotechnology PSA test might become the preferred postoperative PSA test for men who have been treated with radical prostatectomy,” said William Catalona, MD, Professor of Urology at Feinberg and Director of the Clinical Prostate Cancer Program at the Lurie Cancer Center. “It should be especially useful in the early identification of men who would benefit from adjuvant postoperative radiation therapy and those who need postoperative salvage radiation therapy for recurrence.”

Thaxton said the next step for scientists is a prospective clinical trial to compare the nanoparticle-enhanced PSA assay to traditional PSA assays and determine if earlier detection and treatment can save lives. For more information visit http://www.northwestern.edu/newscenter/stories/2010/06/prostate.html

Karen Kinahan Presents at APHON Webinar

The Association of Pediatric Hematology/Oncology Nurses (APHON) will present their first Webinar, Our Amazing Race: Navigating the Journey from Childhood to Adult Cancer Survivor, on June 18, 2010 at 1 p.m. CDT.

Karen Kinahan, RN, MS, PCNS, coordinator of the Lurie Cancer Center’s STAR (Survivors’ Taking Action & Responsibility) Program along with childhood cancer survivor, Julia O. Stepenske, RN, BSN, CPON will discuss the distinctive needs of childhood cancer survivors as they mature, the importance of survivorship programs, and the studies that support these long term programs.

The first 120 APHON members to register may participate in the Webinar at no charge. For additional information and registration, visit http://www.aphon.org/meetings/webinar.cfm
Awards and Honors

Al B. Benson III, MD, was named President of the Association of Community Cancer Centers (ACCC). “I am honored to serve as President of the Association of Community Cancer Centers,” said Benson. “During my year as ACCC President, I hope to give voice to the importance of putting comparative effectiveness research and evidence-based medicine into practice. ACCC needs to be at the table with other oncology organizations. Oncology must have a definitive voice in the comparative effectiveness debate and how it evolves.”

Since 1974, the Association of Community Cancer Centers (ACCC) has served as a leading national multidisciplinary organization that sets the standard for quality care for patients with cancer. ACCC is dedicated to promoting professional learning opportunities and to providing a forum for members to network and enhance their skills in the business, clinical and management aspects of care for the cancer community.

Vadim Backman, PhD, and Lonnie Shea, PhD, were both named fellows of the American Institute for Medical and Biological Engineering (AIMBE).

Backman is creating a suite of tools that use optical technologies to analyze cells for the presence of cancer. They have shown that nanoscale changes in cells caused by cancer can be detected using optical techniques called partial-wave spectroscopy, low-coherence enhanced backscattering spectroscopy, and four-dimensional elastic light-scattering fingerprinting. These technologies make use of a biological phenomenon known as the “field effect,” a hypothesis that suggests that cancer causes changes that can be detected throughout the organ and even in neighboring tissue.

Shea’s research group uses mathematical modeling and experimental investigations to design microenvironments that can control cellular responses and subsequent tissue formation. Shea has worked with Teresa Woodruff, the Thomas J. Watkins Professor of Obstetrics & Gynecology at the Northwestern University Feinberg School of Medicine, to create an ex vivo environment in which a young follicle — an egg and the spherical group of specialized cells that surround it — can grow and mature to a stage at which the egg can be fertilized and implanted into the uterus. This technique could allow women to cryogenically preserve ovarian tissue containing follicles prior to cancer treatment, then use the tissue to obtain mature eggs when they are ready to start a family.

Principal Investigator Serdar E. Bulun, MD, and researchers at the Uterine Leiomyoma Research Center at Feinberg received $5.7 million in funding from the Eunice Kennedy Shriver National Institute of Child Health and Development, part of the National Institutes of Health.

Charles Clevenger, MD, PhD, received a Breast Cancer Research Foundation-American Association for Cancer Research (AACR) Grant for Translational Breast Cancer Research at the AACR 101st Annual Meeting in April. The grant will support his research of Cyclophilin A as a target in breast cancer.

Linda Emanuel, MD, PhD, received a grant from the American Cancer Society to design and test an intervention for rapid-relief pain management for the more than ½ million cancer-related visits to hospital Emergency Departments each year.

Pedram Gerami, PhD, Alexander Yemelyanov, MD, PhD, Xin Tong, PhD, David Victorson, PhD, and Dale Shumaker, PhD, have received new cancer research grants from the Illinois Division of the American Cancer Society (ACS). In the past year the Illinois Division and the ACS National Granting Program together have awarded 18 grants to Northwestern scientists for a total of nearly $5 million in new cancer research funding.
Vinayak Dravid, PhD, and David Seidman, PhD, were named fellows of the Materials Research Society (MRS). MRS fellows are outstanding members of the society whose sustained and distinguished contributions to the advancement of materials research are internationally recognized.

Karen Giammicchio, MSN, APN, AOCNS, was the recipient of the 2010 Excellence in Clinical Practice Award from Illinois’ Alpha Omicron Chapter of Sigma Theta Tau International. The Honor Society of Nursing, Sigma Theta Tau International exists to improve the health of people by increasing the scientific base of nursing research.

Richard Longnecker, PhD, was elected to a fellowship in the American Academy of Microbiology. Fellows of the academy are elected annually through a highly selective, peer-reviewed process based on their records of scientific achievement and original contributions that have advanced microbiology.

Chad A. Mirkin, PhD, has been elected a member of the U.S. National Academy of Sciences (NAS). Membership in the NAS is one of the highest honors given to a scientist or engineer in the United States. He is among 72 new members and 18 foreign associates from 14 countries recognized for their distinguished and continuing achievements in original research. There are currently just over 2,000 active NAS members; more than 180 living Academy members have won Nobel prizes. Among the renowned NAS members are Albert Einstein, Robert Oppenheimer, Thomas Edison, Orville Wright and Alexander Graham Bell.

Mirkin has also been elected an Einstein Professor of the Chinese Academy of Sciences. The Einstein Professorship Program is a key initiative of the academy, with professorships awarded each year to up to 20 distinguished scientists working around the world at the frontiers of science and technology.

Teresa Woodruff, PhD, has been named the winner of the 2010 Tripartite Legacy Faculty Prize in Translational Science and Education, presented annually to the faculty member who has demonstrated excellence in research that emphasizes translational approaches, teaching and monitoring, and leadership.
Professional & Public Programs

Throughout the year, the Lurie Cancer Center offers professional education and patient programs on various cancer related topics. Below is a set of programs scheduled through December, 2010.

For more information or to register, visit cancer.northwestern.edu or call 312.695.1304.

### Professional Programs

#### 2010 ASCO Review:
**Coverage of the 2010 ASCO Annual Meeting**
June 25, 2010
Feinberg Pavilion, 3rd Floor

**4th Annual Argonne Conference: Biomedical Applications of X-ray Microprobes III**
August 13-14, 2010
Robert H. Medical Research Center
Hughes Auditorium

**Prostate Cancer Education Symposium**
September 11, 2010
Robert H. Lurie Medical Research Center
Hughes Auditorium

**First World Congress of Cutaneous Lymphomas**
September 22-25, 2010
Prentice Women’s Hospital, 3rd Floor (9/22)
Feinberg Pavilion, 3rd Floor (9/23-9/25)

**8th Joint Conference of the International Society for Interferon and Cytokine Research (ISICR) and the International Cytokine Society (ICS)**
October 3-7, 2010
Hyatt Regency Chicago

**12th Annual Lynn Sage Breast Cancer Symposium**
October 28-31, 2010
Fairmont Chicago

**Cancer Survivorship 101: Educating Primary Care Providers in Their Treatment of Cancer Survivors**
November 12, 2010
Prentice Women’s Hospital, 3rd Floor

**13th Annual Oncology Nursing Conference**
December 3, 2010
Prentice Women’s Hospital, 3rd Floor

The Science and the Art of Non-Traditional Medical Therapies from Cleveland Clinic and Northwestern Memorial Hospital
December 10-12, 2010
Feinberg Pavilion, 3rd Floor

### Public Programs

**Cancer CONNECTION Days**
An opportunity for patients and families to learn about local support groups, educational programs, wellness activities and community resources - 11 a.m. to 2 p.m.

July 8, 2010
Galter Pavilion, 21st floor

August 12, 2010
Prentice Women’s Hospital, 4th Floor

**Prostate Cancer Education Symposium**
September 11, 2010
Robert H. Lurie Medical Research Center
Hughes Auditorium

**Lynn Sage Breast Cancer Town Hall Meeting**
October 24, 2010
Arthur Rubloff Building
Thorne Auditorium

**Integrative Medicine and Oncology Patient Education Symposium**
December 11, 2010
Prentice Women’s Hospital, 3rd Floor
NCCN 2010 Congress Series: Breast Cancer Webinars

NCCN is offering several live webinars as part of the 2010 Congress Series: Breast Cancer discussing topics covering the entire spectrum of breast cancer treatment and issues in supportive care. CME/CE credit is available for physicians, nurses, and pharmacists through this educational activity. Each webinar will consist of a brief presentation by the presenter followed by an interactive question and answer period for participants. Register now at http://www.nccn.org/professionals/meetings/congress/default.asp for on-line educational opportunities to earn free CME/CE and learn the latest information in breast cancer care.

Genetics, Risk Assessment, and Screening
Presenter: Seema Khan, MD
Robert H. Lurie Comprehensive Cancer Center of Northwestern University
Dates:
Monday, June 21, 2010 • 2:30 – 3:30 PM CDT
Tuesday, July 20, 2010 • 7:30 – 8:30 AM CDT

Diagnosis, Staging, and Initial Therapy
Presenter: Benjamin O. Anderson, MD
Fred Hutchinson Cancer Research Center/Seattle Cancer Care Alliance
Dates:
Monday, June 21, 2010 • 2:30 – 3:30 PM CDT
Tuesday, July 20, 2010 • 7:30 – 8:30 AM CDT

Treatment of Locoregional Disease
Presenter: William J. Gradishar, MD
Robert H. Lurie Comprehensive Cancer Center of Northwestern University
Dates:
Monday, July 26, 2010 • 3:30 – 4:30 PM CDT
Wednesday, July 28, 2010 • 3:00 – 4:00 PM CDT

Treatment of Metastatic Disease
Presenter: John H. Ward, MD
Huntsman Cancer Institute at the University of Utah
Dates:
Monday, August 16, 2010 • 12:00 – 1:00 PM CDT
Monday, August 23, 2010 • 10:00 – 11:00 AM CDT

Supportive Care for Patients with Breast Cancer
Presenter: John H. Ward, MD
Huntsman Cancer Institute at the University of Utah
Dates:
Thursday, August 19, 2010 • 10:00 – 11:00 AM CDT
Thursday, August 26, 2010 • 10:00 – 11:00 PM CDT

Intended Audience:
These educational activities are designed to meet the educational needs of oncologists, nurses, pharmacists, and other health care professionals who manage patients with cancer.
This activity is supported by educational grants from Genentech; Genomic Health, Inc.; Pfizer; sanofi-aventis; and Veridex, LLC. This activity is supported by an educational donation provided by Amgen.
Grand Rounds

With the exception of the Grand Rounds listed below, there are no Tumor Cell Biology Seminars and Grand Rounds scheduled for the remainder of the summer. They will resume in September. Details will follow in the next issue of this newsletter and on our website at cancer.northwestern.edu.

Grand Rounds on Fridays from 8:00 a.m. to 9:00 a.m. in the Gray Seminar Room of the Robert H. Lurie Medical Research Center, 303 E. Superior, Chicago (unless otherwise noted).

Tumor Cell Biology Seminars on Thursdays from 1:15 to 2:15 p.m. in the Baldwin Auditorium of the Robert H. Lurie Medical Research Center, 303 E. Superior, Chicago.

Contact Denise Marshall at 312.695.1392 or d-marshall4@northwestern.edu.

June 18

Myelofibrosis: Science and Current Practice
Animesh Pardanani, MBBS, PhD
Assistant Professor, Department of Medicine
Division of Oncology
Rochester, MN

Accreditation Statement:
Northwestern University’s Feinberg School of Medicine is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

Credit Designation Statement:
The Northwestern University’s Feinberg School of Medicine designates this educational activity for a maximum of 1.0 AMA PRA Category 1 Credit(s)™. Physicians should only claim credit commensurate with the extent of their participation in the activity.

There will be no Tumor Cell Biology seminars until September of 2010

Online Grand Rounds:

Physicians’ Education Resource and the Lurie Cancer Center have partnered to present an online grand rounds series, “A Focus on Hematologic and Solid Tumor Malignancies” - this online series is patterned after the traditional academic live format and consists of 1 module with 4 activities that address acute leukemias, early-stage breast cancer, metastatic breast cancer, and renal cell carcinoma.

Current Online Grand Rounds Activities include:

Exploiting Targeted Therapies for Improved Outcomes in Renal Cell Carcinoma
- Gary R. MacVicar, MD

Chemotherapy Options in Metastatic Breast Cancer: Combination Strategies
- William J. Gradishar, MD, FACP

Optimizing Endocrine Therapy and Side Effect Management for Early-Stage Breast Cancer
- Mary Cianfroca, DO

For additional information visit:
http://www.cancer.northwestern.edu/research/professional_education/online_grand_rounds/index.cfm

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Lurie Cancer Center Weekly Updates
Information to be considered for inclusion in the Lurie Cancer Center’s weekly e-mail updates must be received at least one week in advance. Submit suggestions to Denise Marshall at d-marshall4@northwestern.edu.