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Eliminating the Suffering and Death Due to Cancer

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Search for Colon Cancer Markers Yields Unlikely Target

Researchers have identified a novel biological marker for colon cancer that can be detected in DNA from the stool of some patients with the disease. They used the marker to detect colon cancer in nearly half the DNA samples they analyzed, a result that compares favorably with two noninvasive colon cancer screening tests.

Dr. Sanford Markowitz and his colleagues at Case Western Reserve University and University Hospitals in Cleveland identified the marker, part of a gene called vimentin. They tested it in collaboration with Exact Sciences of Marlborough, Mass., which sells a stool-based DNA test that analyzes about 20 mutations associated with colon cancer.

Unlike those mutations, vimentin has no known role in colon cancer. In fact, the gene is not even active in the normal colon. But it makes a good marker because, in some patients, the gene undergoes a chemical change known as methylation, and this can be detected in DNA from stool.

The researchers tested vimentin in DNA from 94 colon cancer patients. They detected the cancer in 46 percent of the cases, including in 43 percent of cases with stage I or stage II disease, according to findings in

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Director's Update

Creating Networks to Foster Progress

I recently wrote a column for a European news syndicate about our 2015 goal and NCI's global outreach. As I stated in the column, eliminating cancer as a cause of suffering and death is something that will involve a global effort from all disciplines and backgrounds working toward this common goal. Cancer is a global problem, and although its solution will involve a global effort, NCI has an opportunity to spearhead this effort.

For that to happen, though, it requires the appropriate infrastructure and networks to facilitate collaboration, and the sharing of information and resources. At NCI, we are strategically focused on building such an infrastructure that can be viewed, to borrow a phrase from HHS Secretary Mike Leavitt, as a "network of networks." In other words, multiple channels through which researchers—in the United States and beyond our borders into Europe, Asia, and elsewhere—can acquire new tools and resources, and communicate and collaborate with others.

The cancer Biomedical Informatics Grid (caBIG) offers an excellent example. Focusing initially on our own National Cancer Program, it is intended to connect cancer centers, Specialized Programs of Research Excellence (SPOREs), NCI's Clinical

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the August 3 *Journal of the National Cancer Institute*.

"This is a first step," says Dr. Markowitz, who is a Howard Hughes Medical Institute investigator. "We are excited that we hit nearly half of the cases with a single marker, and we hope that by combining the gene with other markers, we can reach the sensitivity required for a clinical test."

The additional markers might be mutations or methylated genes, or perhaps some combination. Vimentin will now be evaluated in a larger population, and Exact Sciences has acquired the rights to commercialize the technology.

Dr. Markowitz began searching for methylated markers several years ago. It had become clear that developing a screening test using genetic mutations would be difficult due to the diversity of mutations in colon cancer.

Meanwhile, interest was growing in "epigenetic" changes, such as DNA methylation, that are common in cancer and can alter the activity of genes. "We have now shown that you can go after these markers in stool and that they do pretty well if you select them carefully," Dr. Markowitz says.

A detection rate of 46 percent leaves room for improvement, but the result should be put in perspective, notes Dr. Dean Brenner of the University of Michigan Cancer Center in Ann Arbor, who co-authored a commentary accompanying the study.

The most widely used noninvasive colon cancer test, fecal occult blood testing (FOBT), detects between 15 and 30 percent of cases. The DNA mutation test by Exact Sciences detects the cancer in 56 percent of cases, according to published results.

"What's really interesting here is that a single methylated target is clearly better than the test for blood in the stool, and it approaches the level of sensitivity you get from testing many genetic mutations," says Dr. Brenner.

"The fact that a gene with no known role in colon cancer becomes methylated in some patients is also interesting," he continues. "And it's not clear why this happens."

Colonoscopy is considered the gold standard of screening tests, but the procedure requires a preparatory cleansing of the large intestine, is invasive, and typically costs more than $1,000. By contrast, FOBT costs a dollar or less, while the Exact Sciences DNA-based test runs between $300 and $400.

The big challenge now will be to increase the sensitivity of screening tests while lowering the costs, notes Dr. Brenner. ◆

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Trials Cooperative Groups, community clinicians, and others by providing tools for conducting research more effectively and efficiently. But caBIG will by no means be limited to participants in the United States. The National Cancer Act of 1971 called for NCI to pursue its mission both domestically and globally, and I expect that eventually there will be strong international participation in caBIG.

Many international participants in caBIG can join us via the International Cancer Research (ICR) Partnership, which includes NCI, the UK National Cancer Research Institute, and the U.S. Department of Defense's Congressionally Directed Medical Research Programs (CDMRP), among others. The ICR Partnership was founded in 2000 to develop common ways to communicate about member organizations' research portfolios.

In 2003, the ICR Partnership launched the International Cancer Research Portfolio Web site (www.cancerportfolio.org), via which researchers could identify possible collaborators or plan future research based on studies already being conducted. All Partnership members have agreed to use the Common Scientific Outline—a classification system organized around seven broad areas of cancer research developed by NCI and CDMRP—and have now coded their portfolios accordingly.

This May, the ICR Partnership members decided to broaden the group's mission by taking steps to increase and enhance "collaboration and strategic coordination of research globally." To do so, the Partnership is looking into expanding the group's membership to augment its ability to gather and share information on current research, and to use the data available on its Web site to conduct portfolio analyses that will help inform strategic planning and funding decisions within and among partner organizations.

The ICR Partnership is just one example of NCI exercising leadership globally to fight cancer. Our international effort is also being pursued in areas such as technology development; the establishment and leadership of large international cohort studies; and the partnerships NCI has established with foreign cancer research organizations, such as those in Ireland, Italy, and the Middle East.

Cancer is a crisis we must overcome and that we now *can* overcome. But it will only be done by ensuring that networks which foster discovery, development, and delivery are available to all who want to be part of our mission. ◆

Dr. Andrew C. von Eschenbach
Director, National Cancer Institute

Spotlight

Studies Shed More Light on Value of "PSA Kinetics" in Prostate Cancer

Two new retrospective studies reinforce earlier findings that rate of change in prostate-specific antigen (PSA) values both before and after treatment for localized prostate cancer can provide important information about patients' prognoses.

The studies, published in the July 27 *Journal of the American Medical Association*, indicate that such changes—often dubbed "PSA kinetics"—either alone or in combination with other clinical markers, can identify some patients at high risk for disease recurrence and death who otherwise would have been considered at low risk.

Although both studies were retrospective, they add to the mounting evidence that suggests PSA kinetics can be a valuable tool in predicting the course of localized disease, along with absolute PSA level, Gleason score, and clinical stage, says Dr. Alison Martin of the NCI Cancer Therapy Evaluation Program. "PSA screening has shifted the profile of prostate cancer in the United States to lower risk disease, so it's important to develop prognostic models that can accurately distinguish between aggressive cancers that should be treated versus those that could be managed conservatively," she says. (See *NCI Cancer Bulletin*, June 14).

In the first study, lead author Dr. Stephen J. Freedland of Johns Hopkins Medical Institutions and colleagues described a new, three-factor model that identifies which patients are at risk of dying from recurrent prostate cancer after radical prostatectomy. The model uses PSA doubling time—the time it takes for PSA values to double after PSA returns to measurable levels following surgery (also known as biological recurrence)—Gleason score, and the time from surgery to biological recurrence.

The study included 379 men who had undergone radical prostatectomy, with 16 years of follow-up. Differences in disease-specific survival were independently associated with each risk factor. But assessing patients based on the combination of all three risk factors offered a more potent prognostic tool: patients who had the lowest scores on all three indicators had a median survival of only 3 years, compared with those who scored highest, all of whom were alive after 16 years of follow-up. The research team combined the three variables into tables that estimate disease-specific survival at 5, 10, and 15 years.

The second study considered the change in PSA levels among men with localized prostate cancer in the year prior to treatment with radiation therapy, also known as "PSA velocity." Lead researcher Dr. Anthony V. D'Amico of the Dana-Farber Cancer Institute and his colleagues looked at a group of 358 patients whose cancer had recurred. They found that men whose PSA velocity was greater than 2.0 ng/mL in that year were more likely to have recurrence than were those whose PSA level rose more slowly.

Patients with higher PSA velocities also were more likely to die sooner. Among men whose prostate cancers were initially classified as low risk, 19 percent with high PSA velocity were likely to die in 7 years, compared with none of the patients with a PSA velocity at or below 2.0 ng/mL per year. In men initially classified as high risk, 24 percent with high PSA veloc-

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Searching for Prostate Cancer Biomarkers/Surrogate Endpoints

NCI is involved in numerous efforts to identify prostate cancer biomarkers/surrogate endpoints. Some examples include:

- *The PCPT Long-Term Follow-Up Study*: Will follow patients from the already completed Prostate Cancer Prevention Trial to, among other things, examine the prognostic value of PSA kinetics.
- *START*: A phase III international clinical trial that will randomize low-risk patients to standard therapy (radiation therapy or surgery) or active surveillance. Decisions about treatment following recurrence will involve, but will not be limited to, PSA kinetics.
- *NCI Prostate Cancer SPOREs, Division of Cancer Prevention, and the Cancer Diagnosis Program*: These programs are involved in various efforts to discover, develop, and validate novel prostate cancer biomarkers.

Cancer Research Highlights

Neuroblastoma Screening Evaluation Hailed as Model of Health Assessment

A Canadian study, which demonstrated the ineffectiveness of neuroblastoma screening of newborns, was cited as a "well-designed evaluation" of a proposed health care intervention strategy in an analysis published in the August 3 *Journal of the National Cancer Institute (JNCI)*.

The Quebec Neuroblastoma Screening Project (QNSP) was designed to test the benefits and costs of such screening before it was widely adopted in North America. About 92 percent of babies born in Quebec between 1989 and 1994 were screened during the study. In 2002, QNSP researchers reported that the testing did not reduce mortality from the disease, and that the unnecessary testing and treatment also caused adverse health effects. Those findings led to the abandonment of plans for widespread neuroblastoma screening in the United States and Canada, and also caused Japan to end its already established screening program.

In the new analysis, researchers—led by Dr. Lee Soderstrom of McGill University in Montreal—compared the $8.8 million cost of the QNSP against the estimated costs if neuroblastoma screening had been implemented in North America. In addition to the projected $574 million savings in health care costs, the investigators estimated there would have been unnecessary treatment of 9,223 children and false-positive findings for 5,003 children screened.

New-Onset Diabetes Is Possible Marker for Early Pancreatic Cancer

A population-based study showed that a diagnosis of new-onset diabetes in older patients could serve as a marker for identifying individuals with early stage pancreatic cancer, according to the August 1 *Gastroenterology*.

Researchers at the Mayo Clinic College of Medicine reviewed data from a cohort of 2,122 Rochester, Minn., patients diagnosed with diabetes at age 50 and older between 1950 and 1994. Of that study group, 18 patients (0.85 percent) were diagnosed with pancreatic cancer within 3 years of meeting criteria for diabetes. "This translates to a 3-year risk of pancreatic cancer of nearly 8 times higher than that for a person of similar age and sex in the general population," reported the scientists, led by Dr. Suresh T. Chari.

Pancreatic cancer is usually diagnosed at later stages when clinical symptoms first appear and prognosis is very poor. "In this study, we highlight the potential for utilizing hyperglycemia and diabetes to define a population at high risk for having pancreatic cancer," the researchers noted. This may enable screening and detection of the disease in earlier stages when it can be more effectively treated.

Further studies are needed to prove the usefulness of new-onset diabetes as a marker, the researchers caution, given the rarity of pancreatic cancer and the common prevalence of diabetes among older individuals.

Revised TNM Classification System Predicts Breast Cancer Survival

A revised staging system for breast cancer, which relies only on pathology reports to classify residual disease in both the breast and axillary lymph nodes after neoadjuvant chemotherapy, provides a superior way to predict distant relapse and overall survival, according to a study in the August 3 *JNCI*.

Investigators from the University of North Carolina at Chapel Hill applied the American Joint Committee on Cancer tumor-node-metastasis (TNM) staging system to 132 nonmetastatic breast cancer patients who received chemotherapy before surgery in 2 different trials that occurred between 1992 and 2000.

The trials differed in the regimen of neoadjuvant drugs: 64 percent of patients received anthracycline-based chemotherapy, while 36 percent received the same regimen with the addition of taxane. All patients underwent surgery and then received a wide array of follow-up treatments. They were followed for a median of 5 years. Despite the many treatment variables, the researchers found that the TNM classifications were highly predictive of patients' 5-year morbidity and mortality rates.

The researchers compared the TNM system favorably against several other breast cancer staging methods in terms of accuracy and ease of use. TNM also was found to be "simple and reproducible," and much more useful as an intermediate endpoint than pathological complete response, which occurs infrequently.

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Myeloid Leukemia Linked to Body Size

The risk of myeloid leukemia is associated with body size and composition, according to a study in the August 3 *JNCI*.

The Melbourne Collaborative Cohort Study involved 40,909 people in Australia, and explored the correlation between nutritional and lifestyle choices and cancer. Beginning in 1990, participants between the ages of 27 and 75 were followed for an average of 8.4 years. Height, weight, and waist and hip circumferences were measured and used to compute body mass index (BMI), waist-to-hip ratios, fat mass, and percent fat. The researchers also collected information on country of birth, alcohol consumption, smoking, physical activity, and education level.

The report found that myeloid leukemia is linked to several components of body size. Overweight and obese persons (those with a BMI of at least 25 and 30, respectively) were 5 times more likely to have myeloid leukemia than those with BMIs lower than 25. Waist circumference was related to increased risk as well. Stature was not linked to myeloid leukemia incidence; however, people with a higher non-fat component of weight or central adiposity were at an increased risk.

Conversely, other lymphohematopoietic malignancies—including non-Hodgkin's lymphoma, multiple myeloma, and lymphocytic leukemia—showed little relation to body size. However, lead author Dr. Graham G. Giles noted that past research on these relationships has been minimal, and some reports have found obese people at increased risk for these diseases, so whether an association exists remains unclear. ◆

Legislative Update

NIH Director Testifies at NIH Reauthorization Hearing

The House Committee on Energy and Commerce held a hearing titled "Legislation to Reauthorize the National Institutes of Health" on July 19. Twenty-six members participated in all or part of the hearing. NIH Director Dr. Elias Zerhouni was the only witness testifying before the committee. The purpose of the hearing was to discuss draft legislation that would reauthorize the NIH.

The draft legislation, distributed shortly before the hearing, contains provisions that would categorize existing Institutes and Centers (ICs) into two categories: mission-specific Institutes and science-enabling ICs. Additionally, the draft legislation delineates new authorities for the NIH director; establishes an electronic coding system and four specific authorizations of appropriations for the NIH Director; requires a biennial report to Congress; authorizes grants for demonstration projects for research at the interface between biological and physical sciences; and will eliminate not only more than 50 existing authorizations of appropriations, including 4 for NCI, but also many mandated reports across NIH.

The committee noted that it has been 13 years since the last reauthorization of NIH and, during that time, the committee had ceded their jurisdiction to the appropriators. Members expressed hope that the legislation would increase transparency and accountability at NIH. Several members cautioned that adequate time had not been provided to study the bill, suggested that the committee should not move too quickly, and stated that they would need time to hear concerns from other interested parties.

Dr. Zerhouni pointed out in his opening statement that the draft bill was closely aligned with the recommendations in the 2003 Institute of Medicine (IOM) Report titled "Enhancing the Vitality of the National Institutes of Health: Organizational Change to Meet New Challenges" and outlined several areas of the draft with which he agreed. In discussing medical advances, Dr. Zerhouni stated that people "can survive cancer today… you can live with cancer as a chronic disease." Rep. Gene Green (D-Texas) asked Dr. Zerhouni whether he envisioned NCI retaining the ability to submit a professional judgment budget directly to the President and to Congress. Dr. Zerhouni responded that this authority "should be preserved, provided that [NCI] also participates in the common fund and the common good."

Congress adjourned for the August recess without introducing a bill. It is anticipated that the committee will have a new draft of the bill when Congress returns in September.

The IOM Report can be found at http://www.nap.edu/books/0309089670/html. Dr. Zerhouni's testimony can be found at http://olpa.od.nih.gov/hearings/109/session1/testimonies/reauthorization.asp. ◆

Funding Opportunities

The NIH Roadmap for Medical Research Funding *provides a framework of the priorities NIH must address to optimize its research portfolio. It identifies the most compelling opportunities in three main areas: new pathways to discovery, research teams of the future, and re-engineering the clinical research enterprise. A newly released Roadmap funding opportunity is listed below. For information on additional Roadmap funding opportunities, go to http://nihroadmap.nih.gov.*

Solicitation of Assays for High-Throughput Screening (HTS) in the Molecular Libraries Screening Centers Network (MLSCN)

PAR-05-147

Letter of Intent Receipt Dates: Aug. 16 and Dec. 21, 2005; Apr. 20, 2006

Application Receipt Dates: Sep. 14, 2005; Jan. 18 and May 18, 2006

This is a renewal of PAR-05-060. This funding opportunity will use the X01 award mechanism. The purpose of this announcement is to invite investigators to seek access for their HTS assays to the MLSCN, which intends to screen 100-200 HTS assays per year to fully utilize the capacity of the screening centers.

For more information, see http://cri.cancer.gov/4abst.cfm?initiativeparfa_id=3105.

Inquiries: Dr. Ingrid Li — ili1@mail.nih.gov

For comprehensive information about NCI funding priorities and opportunities, go to http://www.cancer.gov/researchandfunding. ◆

Featured Clinical Trial

Chemoprevention Study of Selenium for Non-Small-Cell Lung Cancer

Name of the Trial

Phase III Randomized Chemoprevention Study of Selenium in Participants with Previously Resected Stage I Non-Small-Cell Lung Cancer (ECOG-5597). See the protocol summary at http://cancer.gov/clinicaltrials/ECOG-5597.

Principal Investigators

Dr. Daniel David Karp, Eastern Cooperative Oncology Group; Dr. Omer Kucuk, Southwest Oncology Group; Dr. Randolph Marks, North Central Cancer Treatment Group; Dr. Michael R. Johnston, National Cancer Institute of Canada; Dr. Gerald H. Clamon, Cancer and Leukemia Group B; Dr. Steven Belinsky, Lovelace Respiratory Research Institute.

Dr. Daniel Karp
Principal Investigator

Why Is This Trial Important?

Lung cancer is responsible for more cancer deaths in America than breast cancer, colon cancer, and prostate cancer combined. In its earliest stages, non-small-cell lung cancer (NSCLC) may be removed surgically with potentially curative results. However, the incidence of a second tumor developing in patients who have been treated surgically for early-stage NSCLC is about 20 to 30 percent.

In this study, researchers are investigating the ability of selenium to prevent the development of secondary lung tumors in patients with surgically removed, early-stage NSCLC. Selenium is an essential dietary mineral that has been shown in animal studies to inhibit the growth of tumors. It is also associated with reduced cancer incidence in some animal populations.

"Selenium may help prevent cancer through a number of different mechanisms," said Dr. Karp. "It is an essential component of the antioxidant enzyme glutathione peroxidase, which protects tissue from oxidative damage and may help stimulate apoptosis (cell death). Selenium may also play an anti-inflammatory role by blocking the 5-lipoxygenase pathway."

Who Can Join This Trial?

Researchers seek to enroll 1,960 patients 18 years of age and older who have had stage I NSCLC completely removed by surgery. See the list of eligibility criteria at http://www.cancer.gov/clinicaltrials/ECOG-5597.

Where Is This Trial Taking Place?

Study sites in the United States and Canada are enrolling patients in this trial. See the list of study sites at http://www.cancer.gov/clinicaltrials/ECOG-5597.

Contact Information

See the list of study contacts at http://www.cancer.gov/clinicaltrials/ECOG-5597, or call the NCI's Cancer Information Service at 1-800-4-CANCER (1-800-422-6237). The call is toll free and completely confidential. ◆

An archive of "Featured Clinical Trial" columns is available at http://cancer.gov/clinicaltrials/ft-all-featured-trials.

Notes

Dr. Syed Kashmiri Dies at 68

Dr. Syed V.S. Kashmiri, of the Laboratory of Tumor Immunology and Biology in NCI's Center for Cancer Research, died on July 19 after a long battle with cancer. He was 68.

Dr. Kashmiri received his B.Sc. and M.Sc. from the Lucknow University in India, and his Ph.D. from Duke University. Before coming to NCI in 1987, Dr. Kashmiri worked at Rockefeller University, Johns Hopkins University, and the University of Pennsylvania. He was internationally known for his work in modifying immunoglobulin genes to render them more applicable and effective in targeting human tumors. He held numerous patents, received many awards, and published more than 60 peer-reviewed manuscripts. Dr. Kashmiri also was very generous in offering his laboratory's training facilities to students and young investigators. He is survived by his wife, Rafia Kashmiri, and a son, Tabish Kazmi.

Dietary Assessment Tools Review Completed

Investigators from NCI's Applied Research Program, the NIH Office of Dietary Supplements, and Johns Hopkins University recently completed a state-of-the-science review on dietary assessment methods used in large epidemiologic studies of pregnant and lactating women, infants, children, and adolescents. Little has been done to develop and validate dietary assessment tools for these populations, although such tools exist for the general adult population. Development of dietary evaluation methods is essential for improving studies of maternal and child health, childhood cancers, and early-life exposures related to adult cancers.

The scientific review, funded by the National Children's Study (NCS), included a literature review and workshop to assess the status of knowledge about these dietary methodologies, identify research needs, and make recommendations for the NCS and other current studies. This information is available at http://riskfactor.cancer.gov/tools/.

Colorectal Cancer Grand Rounds Available as Webcast

The University of North Carolina at Chapel Hill School of Public Health and the Centers for Disease Control and Prevention have turned their June 2005 Grand Rounds satellite broadcast, "Collaborating to Conquer Colorectal Cancer: Fulfilling the Promise of Prevention," into a webcast. This forum, aimed to increase awareness of community strategies and programs for colorectal screening and prevention, can be viewed at http://publichealthgrandrounds.unc.edu/crcancer/webcast.htm. For a brief overview, go to http://publichealthgrandrounds.unc.edu/crcancer/index.htm. ◆

Third-Party Payer Coverage for Colorectal Cancer Screening

As of June 30, 2005, 21 states have enacted laws requiring insurers to offer or provide coverage for colorectal cancer screening. To see the related fact sheet—which lists these states, tests covered, and age and frequency requirements—go to http://www.scld-nci.net/scld_products_fact_2005.cfml. ◆

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ity were likely to die in 7 years versus 4 percent of high-risk men with lower PSA velocity.

It's still too early to make treatment decisions based on these studies, cautions Dr. Mitchell S. Anscher of the Department of Radiation Oncology at Duke University Medical Center, who wrote an editorial accompanying the studies.

Although the potential of PSA kinetics as a prognostic marker is important, he argues, the greater value of PSA kinetics may be as a surrogate marker for survival "as the ultimate endpoint" in prostate cancer studies.

"So if you can find that correlations in PSA kinetics can be translated into relationships to deaths from prostate cancer, we may be able to complete studies in a much shorter period of time," he says. "Then we can move the field forward more rapidly than we've been able to in the past."

A number of prostate cancer treatment trials involving the NCI Cooperative Groups that have already opened or are set to open in the coming year will begin to address these issues, Dr. Martin explains.

"Our NCI programs and the cooperative groups are working together to nest promising surrogate or biomarker questions into our therapeutic trials," she says. "The trials also will involve standardized collection of essential data, including serum and tissue where possible, which will allow us to create a comprehensive database or platform for subsequent analyses of promising biomarker questions across trials and agents. Hopefully, this will both aid clinical management and speed drug development." ◆

Community Update

NCI Newsletters Disseminate Research News to Cancer Community

The complexity and specificity of biomedical research does not always lend itself to explanations that can be understood by a wide variety of audiences. One of the challenges of informing the public about progress in cancer research is to translate the technical scientific information into easy-to-understand language in an accessible format.

To meet the need for relevant information for a variety of audiences, NCI's divisions, branches, and offices produce a number of newsletters to keep their constituents up to date on the developments of interest to them. One newsletter was recently recognized for its efforts.


CCR frontiers IN SCIENCE

Contents

MOLECULAR BIOLOGY

Non-Native Hydrophobic Interactions in a Hidden Folding Intermediate

Earlier this summer, *Frontiers in Science*, the bimonthly newsletter of the Center for Cancer Research (CCR), was awarded the 2005 APEX Award for Publication Excellence by the Society of Technical Communication (STC). *Frontiers* was 1 of 661 newsletter entries nominated for the award, and 1 of 21 winners in the Web and Electronic Newsletters Category.

This is not the first time *Frontiers in Science* has been recognized. Its editors received an NIH Merit Award in 2004 for "outstanding development and management" of the newsletter. It also received an STC Excellence Award in 2003 for its content, organization, editing, and visual design.

"We saw *Frontiers* as a way to inform the CCR scientific staff of the very best work being conducted in CCR. It is also a good tool to provide knowledge of collaborations, as well as techniques and model systems that are available," said Dr. Stuart Yuspa, chief of the Laboratory of Cellular Carcinogenesis and Tumor Promotion, who heads the Scientific Advisory Committee that oversees the content. "By widely disseminating the newsletter, we are able to inform the broader scientific community about the work that's going on in CCR."

Frontiers in Science (http://ccr.cancer.gov/news/newsletter.asp) is one of several newsletters published by NCI divisions and offices, in print, on the Web, and often in both formats. Some other NCI newsletters include:

Basic and Biobehavioral Research Newsletter. Basic and Biobehavioral Research Branch, Division of Cancer Control and Population Sciences
http://dccps.nci.nih.gov/bbrb/newsletter/04_winter/index.html

Cancer Immunology and Hematology Newsletter. Division of Cancer Biology
http://dcb.nci.nih.gov/newsletters/cihb/cibnewsl.html

CMBB Quarterly Newsletter. Comprehensive Minority Biomedical Branch
http://minorityopportunities.nci.nih.gov/resources/jan2005.pdf

Equal Access. Center to Reduce Cancer Health Disparities
http://crchd.nci.nih.gov/news/newsletter.html

Linkage. Division of Cancer Epidemiology and Genetics
http://dceg.cancer.gov/newsletter/Linkage.html

Benchmarks. Office of Communications
http://www.cancer.gov/newscenter/benchmarks-vol5-issue3

NEALON Report. Office of Liaison Activities
http://la.cancer.gov/nealon.html

The Poster. NCI at Frederick
http://web.ncifcrf.gov/ThePoster/

Update. Office of Policy Analysis and Response
http://www.scld-nci.net/updates/pdf/Update_YIR2005.pdf. ◆

The *NCI Cancer Bulletin* is produced by the National Cancer Institute (NCI). NCI, which was established in 1937, leads the national effort to eliminate the suffering and death due to cancer. Through basic, clinical, and population-based biomedical research and training, NCI conducts and supports research that will lead to a future in which we can identify the environmental and genetic causes of cancer, prevent cancer before it starts, identify cancers that do develop at the earliest stage, eliminate cancers through innovative treatment interventions, and biologically control those cancers that we cannot eliminate so they become manageable, chronic diseases.

For more information on cancer, call 1-800-4-CANCER or visit http://www.cancer.gov.

NCI Cancer Bulletin staff can be reached at ncicancerbulletin@mail.nih.gov.