THE CANCER LETTER INTERACTIVE

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Congress Investigates "Lecture Awards" To Former NCI Director Richard Klausner

The House Committee on Energy and Commerce is investigating whether former NCI Director Richard Klausner violated government ethics rules by accepting lecture awards from cancer centers receiving grants from the Institute.

In a letter last week, the committee said it is "initiating a broad examination of 'lecture awards' from NIH grantees received by NIH officials."

The June 26 letter listed three reasons for starting the investigation:

(Continued to page 2)

In Brief:

Spiegelman Selected For BMS Award; Einstein Cancer Center Wins Grant

BRUCE SPIEGELMAN will receive the Fourth Annual Bristol-Myers Squibb Award for Distinguished Achievement in Metabolic Research. Spiegelman is being recognized for his work in the molecular mechanisms governing the development of fat cells, insulin resistance and mitochondrial function. He is professor of cell biology of the Dana-Farber Cancer Institute and Harvard Medical School. The award, a $50,000 cash prize and a silver commemorative medallion, will be presented at the annual Bristol-Myers Squibb Distinguished Achievement Award Dinner in New York City on October 16, 2003. . . . **ALBERT EINSTEIN COLLEGE of Medicine Cancer Center** has received a five-year, $9.8 million program project grant from NCI for studies on the role of tumor cell motility in breast cancer invasion and metastasis. **John Condeelis**, co-chairman of the Department of Anatomy and Structural Biology, is principal investigator. The project brings together researchers to study how carcinoma and macrophage cell populations in breast tumors differ in their signaling and motility responses to growth factors and how these cell types interact to cause invasion and metastasis. . . . **ARNOLD PALMER PAVILION,** a state-of-the-art community-based cancer treatment facility, has opened in Latrobe, Pa., the hometown of golfer **Arnold Palmer**, said Pittsburgh Medical Center and Latrobe Area Hospital. The Pavilion will be a member of UPMC Cancer Centers and work in collaboration with the University of Pittsburgh Cancer Institute. Along with a diagnostic testing and imaging center, the facility will provide comprehensive cancer care including detection, diagnosis, prevention and

(Continued to page 8)

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House Committee Requests Information From NIH On Awards

(Continued from page 1)

•"The Committee has obtained documents that raise serious questions about possible violations of federal criminal and ethics laws, regulations, and executive orders;

•"The ethics system at the time these possible violations may have occurred appears to remain in place; and

•"Dr. Klausner may not have been the only NIH official who received 'lecture awards' from grantees, and thus such a practice, if found violative, could be a continuing practice."

NIH officials said they are unaware of violations of ethics rules. "Dr. Klausner had approval to receive the awards," an NIH spokesman said. "However, we will review the questions raised by the committee and respond in a timely manner."

The committee gave NIH until July 11 to respond to the letter.

Klausner: HHS, NIH Approved The Awards

In an interview, Klausner said NIH and HHS officials allowed him to receive the awards. "To me, it feels very straightforward," said Klausner, executive director of the global health program at the Bill & Melinda Gates Foundation. "I did win those awards. Those were not honoraria. These were competitive awards. And I accepted them, in each case, only after they were approved by the ethics and legal offices at both NIH and the [HHS]. And that's really, from my perspective, all there is to it."

It is unusual for Congressional investigators to scrutinize an official who has left the government. With Klausner out of NCI for nearly two years, the inquiry may strike some observers as an archeological dig. However, in matters involving oversight of government agencies, the committee rarely shows its hand early in an investigation, and initial letters are written primarily in order to demand additional documents.

Also, the committee, with its Senate counterpart, Committee on Health, Education, Labor and Pensions, is investigating the outcome of the funding increases NIH received in recent years. With questions of accountability as a backdrop, almost any controversy can become politically explosive.

In an interview, Klausner said the questions raised are for NIH to answer.

"This isn't a letter to me," Klausner said. "This is a letter to [NIH Director Elias] Zerhouni. I have not been contacted.

"I actually think it's perfectly appropriate for Congress to always ask questions about whether they agree with the policies that are in place," Klausner said. "But to imply, frankly, that I didn't follow these policies is just not true, and it feels unfair."

According to the letter, Klausner received $3,000 as part of winning the Donald Ware Waddell Award in 2000, and delivered a lecture at the Arizona Cancer Center. The letter also mentions a $4,000 lecture award from Van Andel Research Institute. A year earlier, Klausner received a $15,000 Block Lectureship Award from Ohio State University, documents show.

The allegations made by the committee involve the nuances of ethics rules, government travel policies, and financial disclosures.

The letter focuses on the Arizona award. The letter states that the NCI director, as a Presidential appointee, was subject to more stringent rules than other government employees.

The letter, signed by Committee Chairman Billy Tauzin (R-La.) and James Greenwood (R-Penn.), chairman of the Subcommittee on Oversight & Investigations, is posted on the Web at http://energycommerce.house.gov/108/Letters/06262003_991.htm.

"The standards were pretty clear, that

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competitive awards were able to be accepted, if they were established awards that were established independent of your getting this, that there was an independent jury process, that it was open, and we were recused from pending decisions [involving the institution]," Klausner said. "Recusal covers any pending decisions."

Legal Opinion Finds Awards Prohibited

The committee asked the American Law Division of the Congressional Research Service to review the legal issues involved in Klausner's acceptance of the awards.

CRS concluded that as a Presidential appointee, Klausner would have been "prohibited by executive order from receiving any outside earned income during the course of his appointment." Clear exceptions to the gifts rule include the Nobel Prize, since the Nobel organization has no business before the federal government.

The Arizona Cancer Center received $42 million in NIH funds last year.

"We are aware that there is an investigation into management and ethics concerns at NIH," said Laurie Young, director of development and communications at the center. "We did extend an invitation through the Waddell Award lectureship to Dr. Klausner in recognition of his expertise in the field of cancer, and to our knowledge, all the appropriate documents were submitted and approved."

In an interview, Klausner said the award was not made by the Arizona Cancer Center.

"It was from the Waddell Foundation," Klausner said. "The lecture was given at the Arizona Cancer Center." Potentially, this could be an important distinction, since a foundation would not be as closely connected to NIH as a cancer center.

According to Young, the foundation no longer exists. "Shortly after we received the gift from the Waddell Foundation in 1987 to endow this award lectureship, the foundation was dissolved," Young said to **The Cancer Letter**. "It was my understanding that our donation from this foundation was one of many gifts given as the foundation began to spend out the available funds."

The first Donald Ware Waddell Award lectureship was given at the cancer center in 1988, Young said. According to the cancer center's materials, every year "campus-wide nominations are accepted by a Waddell Award Selection Committee." The committee alternates the selection between basic scientists and clinical researchers. Five of the 15 people who have received the award were NIH employees.

Documents released by the Congressional committee show that in December 1999, Klausner signed a recusal "from matters involving the Arizona Cancer Center" stemming from "receiving a monetary award" from that institution.

In another document filed that year, Klausner checked off a box stating that "this award is not being offered by an entity that has interests… that may be substantially affected by the performance or nonperformance of the employee's official duties."

According to CRS, the recusal was insufficient, the Congressional committee letter states. The recusal document "does not prevent the Director of NCI from making decisions in the future, immediately after accepting the large cash award, which may affect new grant applications, the renewal of existing grants, and the regular oversight, audit and regulation of activities relating to the continuing grants and the continuing relationship of the center with the Institute," the letter states.

To get to Arizona, Klausner flew first class and sought permission to travel by filing a "Form 348," which is used when officials travel on government business and the government is reimbursed for their travel by a third party.

The flight was paid for by the Arizona Cancer Center. Even in cases when third parties pay for travel, government officials can't fly first class unless they have documented health problems, sources said.

Under normal circumstances, 348 vouchers are issued before officials go on government-sanctioned trips. In Klausner's case, the voucher was issued retroactively, five months after the Waddell lecture.

Officials who file this form travel on government time, without having to take annual leave. At the time he delivered the Waddell lecture, Klausner was a Public Health Service commissioned officer.

A copy of a travel voucher issued to Klausner and released by the committee includes Klausner's signature over the following statement: "I certify, to the best of my knowledge, this voucher is correct and complete. I received no honoraria and/or cash, for my retention, from the sponsor(s)."

In his "Schedule A" financial disclosure form, also released by the committee, Klausner reported the Arizona Cancer Center and Van Andel awards as honoraria. According to the committee, Klausner's financial disclosure form for 1999 didn't disclose the

$15,000 lectureship award from Ohio State.

Klausner said he deferred to ethics officers at NIH and HHS.

"Things would come in, and would immediately go to the ethics officer," Klausner said. "It was out of my hands, and then I would be told, yes you may accept this, no you may not accept this. Hundreds and hundreds of things were not accepted. Never an honorarium, and on and on. But these were approved.

"And I never questioned any approval and disapproval," Klausner said.

The committee is requesting the following materials:

—"A list of all 'lecture awards' or 'prizes' received by NIH employees since Jan.1, 1998, including the date of the award, the name and position of the NIH employee, the amount of the cash award, the amount of expenses paid by the sponsoring organization, whether those expenses were reimbursed by the sponsoring organization to the NIH, the name of the sponsoring organization giving the award.

—"For each sponsoring organization giving awards…, please provide a list of all NIH grants to those institutions, the institute and the specific office approving the grant, and the dates that these grant funds were made available.

—"All records since Jan. 1, 1998, relating to communications to and from any ethics advisors at NIH, including Deputy Ethics Counselors about 'lecture awards,' prizes, or any kind of cash award or any discussion of the roles of Deputy Ethics Counselors in reviewing ethics issues for NIH Institute Directors.

—"All records since Jan. 1, 1998, relating to the awards…, including all background information on the awards and the award program, executed recusals, travel orders, and all travel records.

—"All records since Jan. 1, 1998, relating to financial disclosure reports submitted by the NIH employees [who received lecture awards or prizes]."

In Congress:

US Oncology Inc. Asked For Drug Purchase Information

A House committee has asked US Oncology Inc. to provide information on its purchases of oncology drugs in connection with the committee's inquiry into pharmaceutical reimbursement under Medicaid.

The House Committee on Energy and Commerce, in a letter dated June 26, said it is requesting information from the Houston-based company "not only as one of the largest purchasers of oncology drugs nationwide, but also as an entity identified in the earlier Medicaid investigation whose physician members reaped large gains from reimbursements."

The letter is posted at http://energycommerce.house.gov/108/Letters/06262003_995.htm.

The letter seeks information beginning Jan. 1, 1998, on purchases and pricing of 18 oncology drugs, and the volume of drug used for Medicaid beneficiaries, as well as the total amount received by US Oncology or its members from Medicaid reimbursement.

Company officials acknowledged receiving the letter. "As US Oncology's network treats 15 percent of the nation's cancer care cases and has significant data to assist in the inquiry, US Oncology will cooperate with the Committee as it has done in the past," R. Dale Ross, US Oncology chairman and CEO, said in a June 27 conference call with investors.

"As part of the Committee's broad, ongoing inquiry into pharmaceutical reimbursements and rebates under the Medicaid program, this letter requests information from US Oncology regarding the US Oncology network's purchases of pharmaceutical and reimbursement for those pharmaceuticals under Medicaid," Ross said.

"Medicaid represents less than 3% of US Oncology's net patient revenue," Ross said.

US Oncology provides services to 875 affiliated physicians at more than 450 sites in 29 states, the company said.

"We understand that as part of this inquiry, 26 pharmaceutical companies and a number of drug wholesale companies also received similar letters of inquiry from the Committee," Ross said.

On June 26, the same day that US Oncology received the letter, the House and Senate passed prescription drug legislation.

"Each of the bills contains significant reduction in reimbursement for cancer care which could have the unintended effect of curtailing access to quality cancer care in this country," Ross said.

"US Oncology together with other members of the cancer care community and patient advocacy groups will continue to work with members to achieve balanced reform," he said.

Drug Bills Cut $500 Million From Cancer Care, ASCO Says

The House and Senate bills establishing prescription drug coverage for Medicare beneficiaries would remove $500 million from the cancer care system, a 30 percent cut, according to the American Society of Clinical Oncology.

The bills, H.R. 1 and S. 1, include different provisions to reform the average wholesale price system, but both will result in "devastating cuts to cancer care," the society said.

The bills will be reconciled in conference committee in the coming weeks.

While the bills would increase payments for practice expenses, the formulas that Medicare uses to determine the amounts is flawed, according to studies by the General Accounting Office and a Medicare contractor.

Patient services for chemotherapy are paid only one fourth of their actual cost, ASCO said. "A cut of this magnitude will mean that many practices will no longer be able to afford providing chemotherapy services," the society said. "This will be particularly true for satellite or rural clinics many doctors have been able to subsidize over the years."

Under the House bill, oncologists would be reimbursed for chemotherapy drugs by choosing either to write a prescription to a third party contractor who would then ship the drug to the doctor, or to submit a claim as they do now and be reimbursed by Medicare at a reduced amount (112 percent of Average Selling Price), ASCO said.

"The effect of this action will be to remove approximately $700 million from the cancer care system," ASCO said.

The bill would increase payments for practice expenses by $190 million.

The Senate bill provides for oncologists to be reimbursed at Average Wholesale Price minus 15 percent for chemotherapy drugs. The amount will be reduced gradually to actual acquisition cost. For practice expense payments, the Senate language essentially mirrors that in the House bill.

ASCO urged its members to contact their members of Congress over the July 4 weekend "to explain to them how this type of cut will affect cancer care in their communities."

Also, the society is planning to assemble its members and other cancer organizations on July 16 to visit Capitol Hill to discuss the bills.

"Congress is about to dismantle the country's system of cancer care," said a letter to President Bush signed by 56 cancer centers.

If enacted, the legislation "will have a devastating impact, not only on community-based cancer care, but also on scores of cancer centers that conduct clinical trials vital to the progress toward successful treatment of this deadly disease," the letter said.

The letter is posted at http://capwiz.com/asco/home/.

Reports:

Health Professional Training Needs Improvement, IOM Says

Health professionals are not being adequately prepared to provide the highest quality and safest medical care possible, and there is insufficient assessment of their ongoing proficiency, according to a report from the Institute of Medicine.

Programs that train health professionals should adopt five core competencies: the abilities to deliver patient-centered care, work as a member of an interdisciplinary team, engage in evidence-based practice, apply quality improvement approaches, and use information technology.

The report calls on accreditation, licensing, and certification organizations to ensure that students and working professionals develop and maintain proficiency in these core areas. Copies of "Health Professions Education: A Bridge to Quality" are available at www.nap.edu.

* * *

The government has often underestimated the radiation doses for veterans who participated in above-ground nuclear-weapons tests, a report from the National Academies' National Research Council concluded. However, the committee that wrote the report said it is not likely that many more veterans would qualify for compensation, even if the estimates of radiation exposure are updated.

The Defense Department agency that reconstructs the doses of radiation to which veterans were exposed should re-evaluate the methods it uses to estimate these doses, the committee said. If the dose reconstruction program continues, it needs an independent system of review and oversight.

The report, "A Review of the Dose Reconstruction Program of the Defense Threat Reduction Agency," is available at www.nap.edu.

Funding Opportunities:

RFAs Available

RFA DE-04-005: State Models for Oral Cancer Prevention and Early Detection-Phase II

Letter of Intend Receipt Date: Nov. 14

Application Receipt Date: Dec. 17

NCI and the National Institute of Dental and Craniofacial Research invite applications for research grants to design, implement and evaluate interventions for oral cancer prevention and early detection. Goals of the interventions are to raise awareness about oral cancer risk factors and prevention and to promote the early detection of oral malignancies. The RFA is available at http://grants.nih.gov/grants/guide/rfa-files/RFA-DE-04-005.html.

Inquiries: Maria Teresa Canto, director, Population Sciences Research Program, Clinical, Epidemiology & Behavioral Research Branch, Division of Population and Health Promotion Sciences, National Institute Dental & Craniofacial Research , NIH, 45 Center Dr., Rm 4AS43B, Bethesda, MD 20892-6401, phone 301-594-5497; fax 301-480-8319; e-mail maria.canto@nih.gov

RFA CA-04-009: Mechanisms of Physical Activity Behavior Change

Letter of Intent Receipt Date: Oct. 15

Application Receipt Date: Nov. 14

The RFA seeks to elucidate the psychosocial, environmental, and physiological factors involved in the mechanisms of physical activity behavior change to better understand the factors involved in the causal pathways that lead to physical activity behavior change. The physiological and psychosocial influences that are affected by disease status are of particular interest to this RFA (e.g., weight change, obesity, shift in muscle and fat mass, physical activity capacity, resting metabolic rate, hormonal change, immune functions, depression, anxiety, and quality of life). This multidisciplinary focus is the focus of the RFA. The RFA will use NIH R01 and R21 award mechanisms. The RFA is available at http://grants.nih.gov/grants/guide/rfa-files/RFA-CA-04-009.html.

Inquiries: For NCI—Louise Mâsse, Division of Cancer Control and Population Sciences, Behavioral Research Program, NCI, Bldg. EPN, Rm 4076, Bethesda, MD 20892-7335, fax 301-480-2087; e-mail massel@mail.nih.gov.

RFA: Global Health Informatics Training Program

Application Due Date: Oct. 23

Fogarty International Center announces a program that funds international collaborations between the U.S. and low- and middle-income countries to create informatics training programs in support of global health research. FIC has three NIH partners, the National Library of Medicine, the National Human Genome Research Institute, and the National Institute of Biomedical Imaging and Bioengineering. The current combined financial commitment from FIC and its partners is approximately $1.5 million in the first year to support up to six five-year training programs, subject to the availability of funds.

Inquiries: Applications are available at http://grants1.nih.gov/grants/guide/rfa-files/RFA-TW-03-008.html.

Program Announcement

PA-03-145: Ubiquitin and Ubiquitin-Like Modifications Regulating Disease Processes

National Institute of Diabetes and Digestive and Kidney Diseases, the National Institute of Aging, and NCI invite investigator-initiated research projects R01 and R21 focused on the roles of ubiquitin and ubiquitin-like modifications in the development, normal physiology and/or disease progression in cells, organs, and tissues of interest to NIDDK, NCI, and NIA. The Division of Cancer Biology of the NCI supports basic research projects covering a broad spectrum of topics directed at understanding the biological basis of cancer. The PA will use the NIH investigator-initiated research project grant R01 and the Exploratory/Development Research grant R21 award mechanisms. The PA is available at http://grants.nih.gov/grants/guide/pa-files/PA-03-145.html.

Inquiries: Mary Perry, program director, Division of Cancer Biology, NCI, EPN 5018, Bethesda, MD 20892-7396, phone 301)-496-7028; fax 301-402-1037; e-mail mp372j@nih.gov

NCI Funding Notice

NOT-CA-03-033: Preclinical Toxicology and Pharmacology of Drugs Developed for Cancer, AIDS and AIDS-Related Illnesses

NCI Developmental Therapeutics Program of

the Division of Cancer Treatment and Diagnosis seeks organizations to carry out pharmacology and toxicology studies, the data from which must be suitable for filing with FDA as part of investigational new drug applications. The organizations should have the facilities and staff to carry out such studies and the management expertise to analyze and evaluate the data. Proposals must meet the Mandatory Qualification Criterion at the time of submission of initial proposals.

Inquiries: Diane Stalder, contract specialist, Treatment, Biology, and Sciences Section, RCB, 6120 Executive Blvd., Rockville, MD 20892-7193, phone 301-435-3822; fax 301-402-6699; e-mail ds88b@nih.gov.

Foundation Offers Funding

Specialized Center of Research 2004 in Leukemia, Lymphoma and Myeloma

Preliminary Application (submitted via Web site): Nov. 1. Full application from selected investigators will be due on March 15.

Leukemia & Lymphoma Society has begun a program to bring together research teams focused on the cure or prevention of leukemia, Hodgkin's and non-Hodgkin's lymphoma, and myeloma..

The center should be interdisciplinary, cohesive and sharply focused and must be composed of at least three relevant scientific projects capable of interacting. The research may be fundamental or applied or an integrated combination of the two approaches. Basic research tied to a related translational research project is encouraged but not mandatory. The center grant will also support scientific core laboratories required by the component research programs.

An application may be submitted by an individual holding a M.D., Ph.D., or equivalent degree, working in a domestic or foreign non-profit organizations, such as a university, college, hospital, institute or laboratory. Applications may be multi-institutional. Applicants need not be U.S. citizens, and there are no restrictions on applicant age, race, gender, or creed.

The maximal annual total cost of the center, direct and indirect, cannot exceed $1million. The aggregate costs over five years cannot exceed $5 million. The direct costs, if justified by the aggregate budget may be up to $825 thousand per year. The indirect or institutional costs cannot exceed 21.2 percent of the direct costs per year.

Career Development Program 2004 in Leukemia – Lymphoma – Myeloma

Preliminary Application (submitted via Web site): Sept. 15.

Full Application: October 1.

The society supports for individuals pursuing careers in basic, or clinical research in leukemia, lymphoma and myeloma. Three levels of support are provided as described below.

Scholars Award—$100,000 (stipend $95,000 + $5,000 institutional overhead) per year for five years. Annual renewals are based on a non-competitive progress report review.

Scholar in Clinical Research—$100,000 (stipend $95,000 + $5,000 institutional overhead) per year for five years. Annual renewals are based on a non-competitive progress report review.

Special Fellow—$55,000 (stipend $ 51,700 + $ 3,300 institutional overhead) per year for three years.

Fellow—$45,000 (stipend $42,200 + $2,800 institutional overhead) per year for three years.

Scholar in Clinical Research

Preliminary Application (submitted via Web site): Sept. 15.

Complete Application: Oct. 1

The Scholar in Clinical Research award will be awarded to individuals who have demonstrated, over a period f not less than three years, their ability to design and conduct original clinical research on leukemia, lymphoma, and myeloma. Applicants should hold the position of assistant or very early associate professor or its equivalent.

Applicants should have primary involvement in the development and implementation of innovative clinical research concerning prevention, diagnosis or treatment of the lymphohematopoietic malignancies. The studies should translate new concepts and basic science discoveries into clinical practice. The investigative approaches can be based on molecular, cellular, epidemiologic or integrated systems findings.

The award will provide $100,000 annually ($95,000 for salary and benefits and $5,000 for institutional costs), renewable for five years (total award $500,000).

Inquiries: Guidelines for all programs above are available from www.leukemia-lymphoma.org or contact: director of research administration, Leukemia & Lymphoma Society, 1311 Mamaroneck Ave., White Plains, NY 10605, phone 914-821-8859.

In Brief:

UPCI Opens New Facility; Gomella Wins NCI Award

(Continued from page 1)

treatment. "By collaborating with Latrobe Area Hospital, cancer patients in this community will have improved access to therapeutic agents that target cancer and offer promising new treatment options," said **Ronald Herberman**, director of UPMC Cancer Centers and UPCI, and associate vice chancellor for cancer research, University of Pittsburgh. . . . **LEONARD GOMELLA** received the 2003 National Cancer Institute Outstanding Achievement Award at the NCI Reception Awards in Chicago. Gomella is the Bernard Godwin Jr. Professor of Prostate Cancer, Department of Urology, Jefferson Medical College, and director of Urologic Oncology for the Jefferson Kimmel Cancer Center. He was a fellow at NCI from 1986 to 1998. The award recognizes achievements made by an alumnus of the NCI Intramural Program. . . . **LARRY NORTON**, of Memorial Sloan-Kettering Cancer Center, was the inaugural Paul P. Carbone Visiting Professor at the University of Wisconsin Comprehensive Cancer Center. The visiting professorship and lecture was sponsored by the Frontier Science and Technology Research Foundation and the Paul P. Carbone Memorial Foundation. UW Comprehensive Cancer Center also announced new program leaders for the following programs: **Teresa Compton,** human cancer virology; **F. Michael Hoffmann,** experimental therapeutics; **Paul Bertics,** cell signaling and growth control. . . . **AMERICAN SOCIETY** for Therapeutic Radiology and Oncology said it plans to open an office in Washington, D.C. The ASTRO Board of Directors approved plans for the new office at a recent meeting. "Opening a Washington, D.C., office will make it much easier for our professional staff and dedicated volunteers to work with legislators and regulators to ensure that cutting-edge treatments remain available and affordable for patients with cancer and other diseases," said **Nora Janjan**, board chairman. ASTRO, based in Reston, Va., has more than 7,000 members. . . . **WILLIAM BLAUL** was appointed vice president of institutional relations for the Barbara Ann Karmanos Cancer Institute. Blaul served as senior vice president of communication and marketing at American Red Cross.

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Business & Regulatory Report

Product Approvals & Applications:

FDA Approves Bexxar For Treatment Of Non-Hodgkin's Lymphoma

FDA has approved Bexxar (Tositumomab and Iodine I 131 Tositumomab) for the treatment of patients with CD20 positive, follicular, non-Hodgkin's lymphoma, with and without transformation, whose disease is refractory to Rituximab and has relapsed following chemotherapy.

The treatment will be co-marketed in the U.S. by Corixa and GlaxoSmithKline.

"The approval of Bexxar is the culmination of a decade of collaboration between our scientists and many outside investigators and

(Continued to page 2)

Clinical Trials:

ECOG Phase III Trial To Test Hormones Vs. Chemotherapy For Prostate Cancer

Eastern Cooperative Oncology Group said it has begun a phase III study to evaluate treatment strategies in selected men with prostate cancer.

The primary goal of the trial is to determine whether hormonal therapy (involving a combination of ketoconazole and hydrocortisone) or chemotherapy (involving a combination of docetaxel (Taxotere) and estramustine phosphate (Emcyt) is more effective at delaying disease progression, the group said. The trial is designed for prostate cancer initially treated with hormonal therapy and presently having no symptoms or clinical evidence of the cancer except for a prostate-specific antigen that is increasing after initial hormonal therapy.

Researchers will evaluate if the amount of PSA measured throughout the study period is a reliable method to determine the presence or absence of prostate cancer, the group said. They will also look at the length of time it takes for PSA levels to increase and determine how that relates to an actual worsening of symptoms or the onset of new symptoms. The quality of life associated with each therapeutic approach will also be assessed.

"No standard treatment can be recommended in this population of men who have had prostate cancer, " said Michael Carducci, associate professor of oncology and urology, Kimmel Cancer Center at Johns Hopkins University School of Medicine and lead investigator of the study. "The trial is assessing whether early intervention with effective

(Continued to page 4)

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FDA Approves Bexxar For Non-Hodgkin's Lymphoma

(Continued from page 1)

is a victory for patients with NHL who have been waiting for new options," said Steven Gillis, chairman and chief executive officer of Corixa. "With the support of our partner GlaxoSmithKline, we will be ready to start filling orders for Bexxar from cancer treatment centers in approximately 30 days."

"We have dedicated significant resources to training and supporting the treatment teams who will be administering the Bexxar therapeutic regimen to ensure this important new therapy is available as soon as possible for the patients who will benefit from it," said Kevin Lokay, vice president of oncology at GlaxoSmithKline.

Bexxar pairs the tumor-targeting ability of a cytotoxic monoclonal antibody (Tositumomab) and the therapeutic potential of radiation (Iodine-131) with patient-specific dosing. Combined, these agents form a radiolabeled monoclonal antibody (Iodine I 131 Tositumomab) that is able to bind to the target antigen CD20 found on NHL cells, thereby initiating an immune response against the cancer and delivering a dose of radiation directly to tumor cells, the companies said.

The efficacy of the Bexxar therapeutic regimen was examined in a multi-center, single-arm study of 40 patients with follicular NHL whose disease had relapsed following or had not responded to Rituximab. The median age of patients in the study was 57 (range: 35-78) and the median number of prior chemotherapies was 4 (range: 1-11). Eighty-eight percent of patients met the definition of Rituximab refractory (defined as no response or a response of less than 6 months in duration). In patients with Rituximab refractory disease, 63 percent of patients had a response to Bexxar, with a median duration of response of 25 months. Twenty-nine percent of patients had a complete response to Bexxar.

The median duration of complete responses has not been reached after a median follow up of 26 months.

The results of this study were supported by demonstration of durable objective responses in four other single-arm studies enrolling 190 patients with Rituximab-naive, follicular NHL, with or without transformation, who had relapsed following or were refractory to chemotherapy. In these studies, the overall response rates ranged from 47 percent to 64 percent and the median durations of response ranged from 12 to 18 months.

"Bexxar produced an impressive rate of complete and durable remissions in patients who had relapsed following or failed to respond to both chemotherapy and Rituximab therapy," said Mark Kaminski, professor of internal medicine and co-director of the Leukemia/Lymphoma/Bone Marrow Transplant Program at the University of Michigan Cancer Center. "Bexxar gives us the opportunity to offer real hope to the follicular NHL patients including those who have exhausted other treatment options."

The most common adverse reactions occurring in the clinical trials included neutropenia, thrombocytopenia and anemia that can be both prolonged and severe. Of 230 patients included in the safety data from five clinical trials, 63 percent had documented Grade 3 or 4 neutropenia, 53 percent had Grade 3 or 4 thrombocytopenia, and 29 percent had Grade 3 or 4 anemia. Twenty-seven percent of patients received one or more blood transfusions or blood cell growth factors, eight percent of patients experienced a serious infection and 12 percent experienced bleeding events; the majority were mild to moderate. The most common non-hematologic side effects included asthenia, fever, nausea, infection and cough.

The Bexxar regimen was associated with a risk of hypothyroidism and human anti-murine antibody formation. Certain chemotherapy agents and ionizing

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radiation have been associated with the development of myelodysplasia, secondary leukemia and solid tumors. MDS, secondary leukemia and solid tumors have also been observed in patients receiving the Bexxar therapeutic regimen.

Bexxar carries a warning about infusion-related reactions that may be induced by the administration of foreign proteins. Hypersensitivity reactions occurred in 6 percent of patients. Adjustments of the rate of infusion to control adverse reactions occurred in seven percent of patients.

The Bexxar therapeutic regimen consists of four components administered in two steps over seven to 14 days, usually on an outpatient basis. The first set of infusions includes the non-radioactive antibody, Tositumomab, used to improve the distribution in the body of the subsequent radioactive antibody and increase its uptake in the tumor, followed by a dosimetric infusion, containing the antibody and a trace amount of radioactive Iodine-131. The dosimetric step allows the rate of clearance of radioactivity from the body to be determined by the use of gamma camera counts obtained at three time points. Clearance is dependent on factors such as tumor size and bone marrow involvement.

From these determinations, the patient-specific amount of radioactivity necessary to deliver the targeted therapeutic total body dose of radiation can be calculated. Seven to 14 days after the dosimetric step, the patient returns for the therapeutic step, which includes two infusions, again beginning with the non-radioactive antibody, followed by the calculated patient-specific radioactivity needed to deliver the targeted total body dose of radiation.

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Bioenvision Inc. (OTCBB:BIOV) of New York and London said it launched the approved therapy, Modrenal, in the U.K. for advanced post-menopausal breast cancer.

The data reported clinical response rates between 30 percent and 55 percent in post-menopausal patients with advanced, progressing disease, the company said. Patients had received other therapies prior to Modrenal, and many had failed tamoxifen and/or aromatase inhibitors. Bioenvision said Modrenal has two unique mechanisms of action, which may explain the high clinical response rates reported in patients that had received both hormonal therapies and chemotherapy regimen.

In hormone sensitive breast cancer, estrogen is the principal agent that drives cancer cell growth. It is now known that estrogen acts via two receptors in the cell, ER alpha and the recently discovered ER beta. Estrogen, when bound to ER alpha, increases cancer cell growth whereas when estrogen binds to ER beta it can have the opposite effect and slow cancer cell growth, the company said. ER beta is known now to play a role in the development of hormone sensitive cancers, such as breast and prostate cancer.

As a ER beta modulator, increasing estrogen binding to ER beta and also decreasing binding to ER alpha, bringing about a newly discovered interaction at the binding site of a protein, AP, said Gavin Vinson of Queen Mary, University of London. Because AP1 is known to be an important component in cell proliferation pathways, blocking the action of estrogen through the AP1 mechanism provides an additional means to reduce the rate of cancer cell proliferation.

Modrenal has been approved by U.K. regulatory authorities for advanced post-menopausal breast cancer, the company said.

* * *

Dendreon Corp. (Nasdaq:DNDN) of Seattle said it has received a special protocol assessment from FDA that the phase III trial, D9902B, will serve as the basis for approval of its androgen independent prostate cancer drug, Provenge.

"A treatment like Provenge offers hope to the hundreds of thousands of men fighting prostate cancer," said John Page, president and CEO of Us Too! International, the largest prostate cancer advocacy organization. "There are few, if any, treatment options available for men with androgen independent prostate cancer."

The double-blind, placebo-controlled phase III trial of Provenge will enroll 275 patients at more than 60 medical centers throughout the U.S. The protocol for the trial was amended following analysis of the first completed phase III trial of Provenge, trial D9901, the company said. In that trial, patients with a Gleason score of 7 or below were shown to benefit most from the treatment.

To be eligible for the study, patients must have metastatic prostate cancer that has progressed following hormone therapy and have a Gleason Score of 7 or lower and be free from cancer-related pain, the company said. Patients must also be free of cancer-related pain. A total of three immunotherapy treatments over 30 days will be administered, each consisting of an apheresis procedure to collect blood cells, followed two days later by an infusion of

dendritic cells containing vaccine. Patients who receive placebo will have the option of receiving the immunotherapy if their disease progresses during the study, the company said.

Provenge, an investigational therapeutic cancer vaccine, is designed to stimulate the immune system against prostate cancer, the company said. It is developed through the Dendreon proprietary Antigen Delivery Cassette technology, which utilizes a recombinant form of an antigen found in 95 percent of prostate cancers, prostatic acid phosphatase.

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OXiGENE Inc. (NASDAQ:OXGN, XSSE: OXGN) of Watertown, Mass., said FDA has granted Fast-Track designation to Combretastatin A4 Prodrug for advanced anaplastic thyroid cancer.

CA4P is being evaluated in a phase II study, the company said.

OXiGENE said it chose to pursue advanced-stage clinical development of CA4P for ATC after evaluating the results of phase I safety studies of the compound. In one trial, an ATC patient was deemed a complete responder to treatment with CA4P. The patient completed treatment in October 1999 and has been cancer free since. Four additional phase I patients with other forms of thyroid cancer experienced periods of prolonged disease stabilization following CA4P treatments.

Clinicians at the Ireland Cancer Center at University Hospitals of Cleveland, Case Western Reserve University, are studying the effects of CA4P in patients with ATC. An objective of the phase II trial is to determine whether CA4P can extend to 12 months the median survival for regionally advanced or metastatic ATC, the company said. Life expectancy is four to six months.

In addition, the company said it has asked FDA to award CA4P Orphan Drug Status for ATC.

CA4P, the water-soluble prodrug of Combretastatin A4, a compound isolated from the African bush willow Combretum Caffrum, is designed to damage and destroy solid tumors, the company said. Research in animal models has shown that CA4P works by rapidly and selectively disrupting the function of the immature endothelial cells that line the vascular network of tumors.

Clinical Trials:

ECOG Study To Recruit 600 Prostate Cancer Patients

(Continued from page 1)

chemotherapy at the time of rising PSA as the only evidence of possible presence of disease can provide meaningful benefits to patients in this clinical situation. We can only make such a recommendation once data become available on agents that improve survival, delay time to progression, and improve quality of life."

The study will recruit 600 patients 18 years of age or older with confirmed prostate cancer who have been treated with hormonal therapy and present with an increasing PSA but no other evidence or symptoms related to prostate cancer are eligible for inclusion, the group said. The study is an intergroup trial and the Southwest Oncology Group and the Cancer and Leukemia Group B will also participate in this trial.

Participants will receive either a hormonal therapy regimen of ketoconazole/hydrocortisone or docetaxel/estramustine combination chemotherapy, the group said. Patients assigned to the hormonaltherapy regimen will continue treatment until there is clinical evidence that the prostate cancer has returned. Those receiving chemotherapy will continue treatment for a maximum of 18 weeks or will stop treatment earlier if there is clinical evidence that the prostate cancer has returned. Diagnostic studies and patient reports of new physical symptoms will be used to compare the ability of the two therapies to delay progress of the cancer.

Deals & Collaborations:

BioSeek Awarded NIH SBIR For Compound Validation

BioSeek Inc. of Burlingame, Calif., said it has been awarded a two-year small business innovation research phase II grant from NIH for the expansion of the BioSeek Biological Multiplexed Activity Profiling technology for compound validation and prioritization in human primary cell-based inflammatory disease models.

"This quantitative approach will provide enormous benefit throughout the drug discovery process, from target validation and compound selection to clinical indication selection and trial design," said Eugene Butcher, professor, Department of Pathology, Stanford University, project consultant

and chairman, BioSeek Scientific Advisory Board.

The BioSeek BioMAP systems incorporate primary human cells in complex activated states, relevant to human disease biology, the company said. The technology harnesses the informational content and processing power of primary human cell systems, in high throughput formats, and enables the company to test the effects of compounds and genes on human cell function, disease mechanisms and potential toxicity at early stages in the discovery process.

With the NIH grant, BioSeek will expand its database of drug activity profiles in BioMAP systems for inflammation to improve the selection of drug candidates, and the ability to predict drug behavior in humans, the company said. BioMAP technology will be applied in the granted study to develop a database of biological function profiles of a large number of approved and experimental compounds.

The BioMAP platform comprises primary human cell-based disease models for inflammatory and autoimmune disease, cardiovascular disease and cancer, the company said. Combinations of primary human cells are assayed in proprietary formats with multiple disease-associated regulatory pathways activated in concert. BioMAP model systems are designed to reflect human disease pathology and are validated for their ability to detect and distinguish the effects of approved and investigational human therapeutics. Applications for BioMAP technology have been demonstrated for: selection and prioritization of drug leads; compound mechanism of action; side effect profiling; and surrogate marker identification.

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Curis Inc. (NASDAQ:CRIS) of Cambridge, Mass., said it has licensed its small molecule and antibody inhibitors of the Hedgehog signaling pathway to **Genentech Inc**. (NYSE:DNA) for applications in cancer therapy.

Abnormal activation of the Hedgehog signaling pathway has been implicated in the progression of several cancers, including basal cell carcinoma, small cell lung cancer, medulloblastoma, and others, the company said. The small molecule drug candidates and Hedgehog antibodies are specific inhibitors of the pathway that target particular points in Hedgehog signaling and do not appear to harm nearby normal cells. This selectivity contrasts with more traditional cancer treatments that often kill both cancer cells and normal cells, the company said.

Under the agreement, Genentech has agreed to pay Curis a license fee of $8.5 million ($5 million in cash and $3.5 million in equity) and additional fees over the next two years, the company said. The agreement also provides for Genentech to make cash payments to Curis for clinical development and drug approval milestones. Genentech will also pay a royalty on net product sales which increases with increasing sales volume.

Included among the small molecules covered by the agreement is CUR-61414, a compound that has been under development for basal cell carcinoma, the company said. Data have shown that CUR-61414 can selectively kill tumor cells in models of basal cell carcinoma, the company said.

In a related development, Curis said it has received a patent covering antibodies that bind to and block the function of Hedgehog signaling proteins.

"This patent is another in a series of composition and method patents that further provide broad intellectual property coverage to Curis' Hedgehog pathway inhibition technologies," said Daniel Passeri, president and CEO of Curis. "We believe that methods of inhibiting the Hedgehog signaling pathway will constitute a significant new therapeutic approach for the treatment of cancer."

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Cell Pathways Inc. (Nasdaq:CLPA) of Horsham, Pa., said it stockholders have voted to approve the merger agreement with **OSI Pharmaceuticals** (Nasdaq:OSIP).

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Cytyc Corp. (Nasdaq:CYTC) of Boxborough, Mass., said it has entered into a collaborative sponsored research agreement with **Northeastern University** to identify breast cancer markers in ductal lavage fluid collected with the FirstCyte Breast Test.

The agreement calls for Cytyc to sponsor targeted research programs with the Barnett Institute at Northeastern University with two principal investigators, Barry Karger, James Waters professor of analytical chemistry, and William Hancock, Bradstreet Chair in Bioanalytical Chemistry.

"This collaboration will include an investigation of unique markers that may be present in the samples collected for the FirstCyte Breast Test," said James Linder, vice president and chief medical officer at Cytyc. "We believe that coupling molecular markers with microscopic examination enhances the information available to physicians and their patients."

In another development, Cytic said it has

received FDA approval for its ThinPrep Imaging System for commercial use.

FDA approval was based on the results of a multi-site trial evaluating the routine screening of ThinPrep Pap Test slides using the ThinPrep Imaging System compared to a manual review of ThinPrep Pap Test slides for all categories used for cytologic diagnosis as defined by the Bethesda System criteria, the company said.

* * *

Enodar Biologic of Seattle said it has been awarded a grant from NIH to validate proprietary statistical methods and develop software tools for a genetic marker called single nucleotide polymorphism.

Used in clinical and pharmaceutical research, SNP markers are easier to collect than traditional genetic material and allow improved disease detection and targeted treatments, the company said.

The grant, awarded by the National Human Genome Research Institute, will investigate the performance of the technology for analyzing thousands of SNPs and fund the development of a prototype software tool, the company said.

"Advancements in statistical methods for using SNP data will fundamentally advance genomic research and accelerate the development of personalized medicine," said Lue Ping Zhao, CEO of Enodar.

The initiative will include both a validation of statistical approaches and the development of a user-friendly prototype application called SniPlus, the company said. SNiPlus will enable researchers to discover disease-causing SNPs quickly. Enodar will market analytic services with SNiPlus, along with other proprietary technologies developed by Enodar researchers.

* * *

Fred Hutchinson Cancer Research Center has begun a program, the Early Detection Initiative, to alert doctors to the earliest signs of cancer.

The $4.4 million effort is funded by **The Paul G. Allen Foundation for Medical Research** of Seattle, the **W.M. Keck Foundation** of Los Angeles and businessman **Donald Listwin** of Woodside, Calif.

The Paul G. Allen Foundation is contributing $2 million, W.M. Keck is contributing $1.4 million, and Donald Listwin is contributing $1 million. Additionally, the center said it would invest another $3.3 million.

The goal of the initiative, headed by its president and director, Nobel laureate Lee Hartwell, is the early identification of the onset and risk of a wide range of cancers and other diseases so they can be prevented or treated as soon as possible, the center said.

"The importance of this work is underscored by the fact that survival rates improve dramatically when cancers are diagnosed early, when the disease is still confined to the organ of origin," Hartwell said.

For example, if all colorectal-cancer cases were detected when localized, the overall five-year survival rates could improve from 64 percent to 90 percent, the center said. Early detection also is key to managing breast, ovarian, prostate and other cancers. The five-year survival rate for breast- and prostate-cancer with localized, early stage disease is 85 percent to 95 percent and remains high at 10 years.

The $4.4 million in gifts will enable Fred Hutchinson to develop, test and implement methods for detecting proteins that signify the presence or risk of cancer in human blood samples. Researchers will use techniques made possible by proteomics, which catalogs and describes the function of all of the proteins made by a cell or organism.

The five-year project will bring together the simultaneous application of biological, epidemiological and bioinformatics tools for early cancer detection, the center said. Fred Hutchinson is working with several partners with specialized technical and bioinformatics expertise, including Microsoft and the Institute for Systems Biology.

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ImClone Systems Inc. (Nasdaq: IMCLE) said it has received a $6 million payment from **Merck KGaA** of Darmstadt, Germany, for achieving a manufacturing-related milestone under the companies' license agreement for Erbitux.

Upon payment, ImClone Systems issued 334,471 shares of its common stock to Merck KGaA, representing the sale of the shares at a ten percent premium to market value as provided in the license agreement, the company said.

In December 1998, Merck KGaA licensed from ImClone Systems the right to develop Erbitux outside of the U.S. and Canada and the co-exclusive right to develop Erbitux in Japan, the company said.

The milestone relates to the Merck KGaA receipt on April 16, 2003 of an import license from the German state regulatory authority (the Regierungspraesidium Darmstadt) in Darmstadt, where Merck KGaA is headquartered, the company said. The import license allows Merck KGaA to import Erbitux supply manufactured at ImClone Systems manufacturing facilities in Somerville, N.J.,

directly into Germany. In order to secure the import license and the subsequent milestone payment, ImClone Systems manufacturing facilities went through an inspection by a team of European regulators that included members of the Regierungspraesidium Darmstadt and the Paul Ehrlich Institute.

"The achievement of this milestone is significant because it certifies that our manufacturing facilities operate and manufacture Erbitux according to current Good Manufacturing Practices as defined under German drug law, a requirement for importing Erbitux supply directly to Merck KGaA in Germany," said S. Joseph Tarnowski, senior vice president of manufacturing operations and product development at Imclone. "We are also pleased that Merck KGaA received an import license as a result of our successful inspection because it represents the most rigorous and detailed inspection that ImClone Systems manufacturing facilities have undergone by a regulatory authority to date."

Erbitux is an investigational IgG1 monoclonal antibody designed to target and block the epidermal growth factor receptor (EGFR), which is expressed on the surface of certain cancer cells in multiple tumor types, the company said. The agent is designed to bind to EGFR and prevent natural ligands called growth factors from binding to the receptor and inducing phosphorylation. The most common drug-related adverse events reported in clinical trials of cetuximab have been an acne-like rash and asthenia. Severe allergic reactions may occur in a small percentage of patients.

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Orphan Medical (Nasdaq: ORPH) of Minneapolis, Minn., said it has sold Busulfex (busulfan) Injection to **ESP Pharma Inc.** for $29.5 million in cash, which includes inventory.

Busulfex is a conditioning regimen prior to hematopoietic progenitor cell transplantation, the company said.

Proceeds of the sale will fund the further development and marketing of Xyrem (sodium oxybate) oral solution and a stronger presence in the sleep and central nervous system markets, the company said.

Two clinical trials are assessing the efficacy of Xyrem for daytime sleepiness associated with narcolepsy, the company said. Orphan Medical said it is also developing a release version of Xyrem and is assessing two pre-clinical compounds that may have activity in the sleep area. Butamben, a long-lasting, non-opioid compound for the treatment of intractable cancer pain, is in development as well.

The full year revenue forecast for 2003 is now in the range of $15.0 - $18.0 million compared to the previous estimate of $20.0 - $23.0 million, which included Busulfex, the company said.

* * *

OSI Pharmaceuticals Inc. (NASDAQ: OSIP) of Melville, N.Y., said it has entered into an agreement with **Celgene Corp**. by which OSI will recover full rights to market and promote Gelclair in the U.S.

Gelclair is a bioadherent oral gel that provides relief for pain associated with oral mucositis, a side effect of radiation treatment or chemotherapy.

Gelclair had been marketed under a co-promotion agreement between Celgene and Cell Pathways Inc, the company said. Gelclair was added to the OSI oncology portfolio as part of its acquisition of Cell Pathways.

Financial terms of the agreement have not been disclosed, the company said.

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SCYNEXIS Europe Ltd. of Cambridge, England and RTP, N.C., said it has entered into a research collaboration in anti-cancer therapeutics with **Molecular Engines Laboratories** of Paris, France.

MEL biology teams will access compounds produced by the Scynexis automated Medchem-Factory and utilize HEOSHit Explorer Operating System software, the company said.

MEL said it would retain IP and exclusive worldwide rights to products developed through the collaboration in exchange for technology access fees and other compensation for Scynexis technologies and services.

Financial terms have not been disclosed, the company said.

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Seattle Genetics Inc. (Nasdaq: SGEN) of Bothell said it has achieved two preclinical production milestones under its antibody-drug conjugate collaboration agreement with **Celltech Group** (LSE:CCH) (NYSE:CLL), which trigger payments to Seattle Genetics.

The companies formed the collaboration in March 2002 to provide Celltech with a license to the Seattle Genetics ADC technology for use with the Celltech antibodies and antibody fragments, the company said.

"By addressing issues such as stability, potency, toxicity and ease of manufacturing, we believe the Seattle Genetics ADC technology provides a next-generation approach to targeted therapy," said Clay Siegall, president and CEO of Seattle Genetics.

The ADC technology utilizes cell-killing drugs and stable, enzyme-cleavable linkers, the company said. The synthetic drug-linkers are attached to monoclonal antibodies or antibody fragments in such a way that the ADCs are stable in blood but release their payload of drug under conditions present inside target cells. Research has demonstrated that ADCs exhibit greater specificity and lower toxicity in preclinical models than corresponding conventional conjugates, the company said. The Seattle Genetics ADCs have induced regressions and cures of established tumors at doses as low as 1/60th the maximum tolerated dose in preclinical models.

Under the multi-year collaboration agreement, Celltech paid Seattle Genetics an upfront technology access fee and is paying research and reagent fees, the company said. Celltech has also agreed to make progress-dependent milestone payments and pay royalties on net sales of any resulting products. Celltech is responsible for product development, manufacturing and marketing of any products generated through the collaboration, the company said.

Patents:

Adherex Issued U.S. Patent For Catenin Molecule Inhibition

Adherex Technologies Inc. (TSX: AHX) of Ottawa, Ontario, said it has been issued a US patent for catenin molecule inhibition.

In therapeutic approaches that target and destroy the blood supply of a tumor, the Adherex patent protects structure of drugs that inhibit intracellular catenin molecules, the company said.

Catenins are the cell-to-cell binding process and maintain the structural integrity of a tumor's blood vessels, the company said.

A selection of these pre-clinical compounds and drug candidates from the catenin inhibitor family will be evaluated for their anti-cancer effects and vascular targeting capabilities as part of the recently announced agreement with the US National Cancer Institute, the company said.

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ChemGenex Therapeutics Inc. of Menlo Park, Calif., said it received a notice of allowance for its patent application covering compositions and methods of use for its investigational agent, Quinamed (amonafide), to improve the anti-cancer effects of cisplatin.

Quinamed is undergoing phase I/II testing for solid tumor cancers at the Sarah Cannon Cancer Center in Nashville, Tenn, the company said.

"ChemGenex has filed seven patent applications covering Quinamed formulations, synthesis and uses," said Dennis Brown, chairman and CEO of ChemGenex. "The initial patent will provide protection for the longer term use of Quinamed in conjunction with other agents. Our strategy is to initially seek approval for Quinamed as a single agent therapy. Future clinical trials will explore uses in combination with other chemotherapy, including cisplatin-based regimens, in a variety of indications."

* * *

Meyer Pharmaceuticals LLC of Irvine, Calif., said it has been issued a patent for its TNF receptor releasing enzyme.

The technology is licensed exclusively to Meyer from the University of California at Irvine, and is being developed as a new biological agent for treating arthritis, the company said.

TRRE represents a family of human enzymes and regulatory proteins that cause TNF Receptors to be shed from the surface of cells. Receptor shedding is part of a natural process that limits cytokine signaling, the company said. TNF is the signaling molecule that plays a key role in the inflammation and tissue destruction that occurs in arthritis. Administering TRRE as a pharmaceutical composition gets to the center of the inflammatory reaction, thereby resolving the pathology of the disease and returning the patient to good health.

"We used to isolate TRRE from a human cell line," said Tetsuya Gatanaga, executive vice president and chief operating officer of Meyer Pharmaceuticals. "but then we cloned the gene, and now produce it by recombinant expression. The clone we have done the most testing with is designated MP8. The enzyme has proven to be extremely effective for treating inflammation in animal models for septic shock, edema, established arthritis, multiple sclerosis, and asthma."

"These two new patents represent a significant milestone in the evolution of our intellectual property portfolio," says Michael O'Neill, president and CEO of Meyer Pharmaceuticals.

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