



July 2012

IU researchers identify protein target that could lead to therapies for hard-to-treat cancers

Researchers at the Indiana University School of Medicine have identified a compound that targets a cancer-related protein, suggesting it could offer a future therapy for difficult-to-treat cancers.

The protein, called SHP2, emerged as a potential new “druggable target” in research published online in *Blood*, the journal of the American Society of Hematology.

Researchers **Rebecca Chan**, MD, PhD, **Reuben Kapur**, PhD, and colleagues had determined that SHP2 was hyperactive in cells with a mutation in the KIT receptor in several types of leukemia, including acute myeloid leukemia and mast cell leukemia. Patients with the mutation were considered to have a poor prognosis.

The researchers noted that patients with the mutation who were diagnosed with gastrointestinal stromal tumors responded well to treatment with the drug Gleevec. However, in patients with other diseases such as acute myeloid leukemia who had the same mutation, Gleevec was much less effective. That, the authors noted, had made it vital to identify other drug targets for diseases with the particular mutation.



Kapur

Dr. Chan and Kapur collaborated with **Zhong-Yin Zhang**, PhD, a biochemist who had identified a small molecule that inhibits that activity of SHP2, to assess the effectiveness of the small molecule inhibitor in shutting down the protein.

In the laboratory tests the compound, IIB-08, was moderately effective in blocking the activity of SHP2 in samples of patient cancer cells and in mouse models of leukemia. Growth of the laboratory cell lines was reduced and the survival time of the animals was prolonged. However, when combined with other small molecule inhibitors, the impact of the drug was much greater.

“The combination significantly enhanced the survival of the animals bearing the mutation,” Dr. Kapur, director of the program in hematologic malignancies and stem cell biology at the Herman B Wells Center for Pediatric Research, said. “It’s more than a synergistic effect. It’s pretty profound.”

The results indicate that SHP2, working with other proteins in the body, induces growth of cancerous cells and that the IIB-08 compound is a promising candidate for blocking that SHP2 activity, Dr. Kapur said.

The research was supported in part by grants from National Institutes of Health: R01 HL077177, R01 HL08111 and CA152194 (Z.Y.Z).

--Eric Schoch



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News briefs

IU Health named to national Honor Roll of best hospitals

Indiana University Health has been named to the 2012-13 *U.S. News & World Report* Honor Roll in its Best Hospitals rankings, which is reserved for the top medical centers across the country with the skill and capacity to address the most challenging medical cases.

[more](#) 

24 Hours of Booty cyclists raise \$125,000

Thanks to all of the riders from the IU Simon Cancer Center's team, Pedaling Cures, and all of the others who participated in the 24 Hours of Booty cycling event June 29-30. The 37 teams and 275 riders raised more than \$125,000 for the Lance Armstrong Foundation and the IU Simon Cancer Center.

Mandatory informational sessions for new COI regulations for all researchers

In accordance with the new regulations as determined by the Public Health Service (PHS), IU has updated its policy on research-related Conflict of Interest (COI). PHS requires compliance by all PHS funded institutions by Aug. 24, 2012.

[more](#) 

Mark your calendars: BCOG annual conference is Nov. 8-9

Mark your calendars for this year's BCOG Annual Fall Conference on "Team Science." Held Nov. 8-9 at the JW Marriott, the conference is sponsored by the Behavioral Cooperative Oncology Group (BCOG), a consortium of four universities: Indiana University, Michigan State, University of Michigan, and The Ohio State University. Co-sponsors are the Walther Cancer Foundation, IU Simon Cancer Center, Indiana Clinical and Translational Sciences Institute, and the Office of the Vice Chancellor for Research at IUPUI. Kara Hall, PhD, program director at the National Cancer Institute, will deliver the keynote address.

Student blogs about IU Simon Cancer Center Summer Research Program

The IU School of Medicine Indianapolis campus has been bustling this summer with young people who have an interest in cancer research. The IU Simon Cancer Center hosted a group of students for the 10th consecutive summer in the Summer Research Program, while another group of students from Indianapolis Public Schools were participants in the Future Scientist Program. Both programs end today (July 27). Amanuel Kibrom, a participant in the Summer Research Program, blogged about his



Kibrom

experiences. [Read his blog posts.](#)

Cancer center members in the news

Larry Cripe, MD, and colleagues identified genes dysregulated in stem and progenitor cells in -7/7q- acute myeloid leukemia (AML), and suggests that interleukin-1 receptor accessory protein (IL1RAP) may be a promising therapeutic and prognostic target in AML and high-risk myelodysplastic syndrome (MDS). Their study was published in the journal *Blood*.

G. Marie Swanson, PhD, MPH, has been elected to the American College of Epidemiology (ACE) as a board member. She is a past president of ACE.

New members

[Jill Fehrenbacher](#), PhD
Department of Pharmacology and Toxicology
 Associate member, [Breast Cancer](#)

[Emma Rossi](#), MD
Department of Obstetrics and Gynecology
 Affiliate member

[Peter Schwartz](#), MD, PhD
Internal Medicine
 Full member, [Cancer Prevention and Control](#)

[Rebecca Silbermann](#), MD
Department of Medicine
 Associate member, [Hematopoiesis, Malignant Hematology and Immunology](#)

[David Waning](#), PhD
Department of Medicine
 Associate member, [Tumor Microenvironment and Metastases](#)