April 15, 2008

Launching a Global Alliance for Pharmacogenomics

U.S. and Japanese Scientists Partner to Study Genetic Factors that Influence the Safety and Effectiveness of Medicines

Leaders at the National Institutes of Health and the Center for Genomic Medicine in Japan have signed a letter of intent creating a Global Alliance for Pharmacogenomics. The effort aims to identify genetic factors that contribute to individual responses to medicines, including rare and dangerous side effects. The results of such work will eventually help doctors optimize the safety and effectiveness of drugs for each patient.

U.S. scientists joining the alliance are members of the NIH Pharmacogenetics Research Network, a consortium of research groups that study how genetic factors influence the way drugs work in and are handled by the body.

Japanese scientists in the alliance represent the newly created Center for Genomic Medicine, a component of the RIKEN Yokohama Institute that conducts high-throughput analyses of human genes involved in diseases and drug responses.

Signers of the agreement include the directors of three of the National Institutes of Health: Jeremy M. Berg, Ph.D., director of the National Institute of General Medical Sciences; Elizabeth G. Nabel, M.D., director of the National Heart, Lung, and Blood Institute; and John E. Niederhuber, M.D., director of the National Cancer Institute.

"By bringing together our resources, we will advance the understanding of how changes in DNA affect our responses to medicines. Thus we can begin to realize the promise of personalized medicine," said Yusuke Nakamura, M.D., Ph.D., director of the Center for Genomic Medicine at RIKEN.

"We expect this international agreement to speed scientific discovery and the translation of results into improved treatments for cancer, heart disease and other serious conditions," said NIH Director Elias A. Zerhouni, M.D. "Ultimately, physicians worldwide will be able to tailor the treatment of each patient--one of the great frontiers of health

care today."

Initial projects will focus on:

Initial projects will focus on:

- Understanding genetic factors that influence the effectiveness of breast cancer treatments (aromatase inhibitors)
- Determining the optimal length of treatment for two drugs used to treat early stage breast cancer (cyclophosphamide and either doxorubicin or paclitaxel)
- Discovering new genetic factors linked to serious side effects from certain pancreatic cancer drugs (gemcitabine and bevacizumab)
- Exploring how genes contribute to drug-induced long QT syndrome, an irregular heart rhythm that can cause sudden cardiac arrest
- Working with the International Warfarin Consortium to tailor initial doses of the anti-clotting drug warfarin based on the genetic profiles of patients

A steering committee will manage the alliance and will meet twice a year to discuss progress, future directions, intellectual property issues, the approval of additional members and communication with the public. Alliance members will share their data and their research results with the scientific community.

The letter of intent is available at http://www.nigms.nih.gov/Initiatives/PGRN/GAP/. This site also includes acknowledgements of the research centers that provided DNA samples essential to perform the work.

For more information, please contact:

RIKEN Public Relations Office
Email: koho@riken.jp