NIH and Lilly to generate public resource of approved and investigational medicines

March 13 2012

The National Institutes of Health and Eli Lilly and Company will generate a publicly available resource to profile the effects of thousands of approved and investigational medicines in a variety of sophisticated disease-relevant testing systems, NIH announced today.

Comprehensive knowledge of the biological profiles of these medicines and molecules may enable biomedical researchers to better predict treatment outcomes, improve drug development, and lead to more specific and effective approaches.

Through the collaboration, the NIH's newly established National Center for Advancing Translational Sciences (NCATS) and Lilly Research Laboratories have agreed that NCATS' Pharmaceutical Collection of 3,800 approved and investigational medicines will be screened using Lilly's state-of-the-art Phenotypic Drug Discovery (PD2) panel. This panel features assays (i.e. tests) that are designed to reveal novel mechanisms or pathways of potential medicines and, as part of this collaboration, approved medicines as well. As such, the panel may provide new insights for drug discovery.

"This innovative collaboration with Lilly is exactly the type of partnership that NCATS is eager to foster with many other groups from industry, government and academia," said NCATS Acting Director Thomas R. Insel, M.D. "Working together, we can make drug development pipelines more productive. The key is precompetitive collaboration to benefit all partners, ensuring broad access to the results."

The NCATS Pharmaceutical Collection (NPC) is a comprehensive publicly available database and is a physical sample collection. The PD2 assay panel, part of Lilly's Open Innovation Drug Discovery platform, consists of sophisticated human disease pathway-related assays relevant to cardiovascular diseases, cancer and endocrine disorders, among others. These testing systems are designed to reveal novel mechanisms or pathway activities of drugs.

"This profiling, broad in terms of the therapeutics tested and the range and complexity of the biological readouts, will leverage the NPC in just the way I envisioned when we assembled the pharmaceutical collection," said Christopher P. Austin, M.D., director of the NCATS Division of Preclinical Innovation. "The combination of the power of the PD2 component of Lilly's Open Innovation Drug Discovery platform and the NPC will benefit of the entire scientific community."

The screening will take place over the next 12 to 18 months, and results will be made freely available at tripod.nih.gov/npc/. For example, if an approved medicine is found to be a possible treatment candidate for a new disease indication, a partnership with the organization that owns the chemical compound could be formed to pursue additional studies. These might include clinical trials required for marketing approval by the U.S. Food and Drug Administration. Alternatively, medicines with activity in the PD2 assays might serve as starting points for additional chemistry research efforts to produce new medicines.

"This initiative is a great example of how we can collectively leverage unique capabilities from the public and private sectors toward our shared goal of advancing science and improving patients' lives," said Alan D. Palkowitz, Ph.D., vice president of discovery chemistry research and technologies at Lilly. "It also attests to the importance of collaborative research because, despite major advances in biomedical science, much work remains to be done."

Provided by National Institutes of Health