Eli Lilly and Company Announces New Drug Discovery Initiative

Goal is to foster open collaboration between Lilly and global laboratory researchers


These are the diseases for which Eli Lilly and Company will be engaging researchers from around the world in a new and unique drug discovery initiative.

The initiative, called the Lilly Phenotypic Drug Discovery Initiative, or PD², uses Lilly-developed disease-state assays and a secure web portal to evaluate the therapeutic potential of compounds synthesized in university and biotechnology laboratories. Findings from this initiative could ultimately form the basis for collaboration or licensing agreements between Lilly and external institutions.

“Each year, researchers throughout the world design and synthesize compounds in university and biotechnology laboratories that are never fully evaluated as potential drug candidates,” said Alan D. Palkowitz, Ph.D., vice president of discovery chemistry research and technologies at Lilly. “There’s an untapped source of ideas and compounds in the greater scientific community that could ultimately impact patients’ lives following further evaluation and development.”

Collaborations between Lilly and external researchers are not new; however, the PD² initiative is designed to provide a more convenient point of entry for global external researchers into Lilly’s drug discovery and development process. By doing so, PD² allows for the establishment of productive relationships with institutions and organizations that may not previously have worked with Lilly.
“Increasingly, innovation depends on a broad network of relationships outside our walls,” said Palkowitz, adding that PD² is yet another example of Lilly’s evolving transformation from a Fully Integrated Pharmaceutical Company, or FIPCO, to a Fully Integrated Pharmaceutical Network, or FIPNet.

Through the automated PD² interface, researchers confidentially submit a structure of their compound for an initial computational evaluation using a set of proprietary Lilly algorithms focused on drug-like properties and structural novelty. If the compound structure meets certain specified criteria, the researcher is then invited to submit a physical sample for biological testing. All testing by Lilly is free, and all intellectual property rights remain with the submitting researcher and/or institution at this stage. An objective of PD² is not to promote a random, high volume submission of compounds, but rather to encourage the testing of molecules that represent novel structural diversity and hypotheses that are thoughtfully considered in light of the biology associated with each assay module.

After biological testing is completed, Lilly provides the external researchers a data report with a complete biological profile of the compound across the four assay modules mentioned earlier (Alzheimer’s disease, cancer, diabetes and osteoporosis). Because these data are derived from sophisticated and systematic in vitro model systems, they provide researchers with broader assessments of a compound’s biological profile than what is generally available today in academic or government laboratories, said Palkowitz.

In return for these data, Lilly has first rights to exclusively negotiate a collaboration or licensing agreement with submitters of those compounds that demonstrate biological activity that Lilly would like to further explore. If there is no agreement within a defined time period, the researcher is granted no-strings-attached ownership of the data report and can choose to use it in publication or grant proposals, or to further refine structural hypotheses, all of which may advance scientific discovery.

One of the external experts who consulted with Lilly on the development and testing of PD² is Peter Wipf, Ph.D., a distinguished professor of chemistry and professor of pharmaceutical sciences at the University of Pittsburgh. He said that, for researchers not employed at a pharmaceutical company, the major potential benefits of PD² include the ability to test
compounds in well-validated assays, the comprehensive nature of the data reports and the opportunity to exchange ideas and hypotheses with Lilly experts on compounds of interest.

“I’m looking for drug discovery experts who can critically evaluate the data on my compounds and engage me in discussing their immediate potential for optimization and perhaps their ultimate impact on specific areas of human health with unmet medical need,” said Wipf.

The potential benefit for Lilly is increased access to top global research talent, novel therapeutic hypotheses and rich chemical diversity to amplify and leverage Lilly’s work and expertise in these areas. “We believe open collaboration with a network of scientists will create new venues to deepen our understanding of complex biological processes and eventually to discover novel therapeutics that benefit patients,” said William Chin, M.D., vice president of discovery research and clinical investigation at Lilly. “Ultimately, our hope is that the patient will be the biggest winner of all.”

For more information on PD², please log onto pd2.lilly.com.

About Lilly
Lilly, a leading innovation-driven corporation, is developing a growing portfolio of pharmaceutical products by applying the latest research from its own worldwide laboratories and from collaborations with eminent scientific organizations. Headquartered in Indianapolis, Ind., Lilly provides answers – through medicines and information – for some of the world's most urgent medical needs. Additional information about Lilly is available at www.lilly.com.