COLLABORATIVE MULTIDISCIPLINARY DEVELOPMENT OF NEW THERAPEUTIC AGENTS

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ABSTRACT

In a joint set of ventures, the Wiest and Helquist laboratories at the University of Notre Dame, specializing in computational chemistry and drug synthesis, respectively, are supported by various funding mechanisms to reach out to investigators in other fields and at many institutions to form multi-disciplinary collaborative teams for the purpose of drug development. Most often, the external collaborators are at medical schools or other biomedical institutions and have major strengths in biological or clinical studies but do not have the chemistry expertise required for drug development. These collaborators have often identified a potential therapeutic protein target from cellular studies, or they have conducted compound screenings to identify initial hits. The next logical steps in these investigations are the design of protein binders or hit optimization, requiring the computational and synthetic chemistry input of our laboratories. The resulting compounds are provided back to the external collaborators and other appropriate parties for more extensive biological studies. Over the past few years, these collaborative ties have been established with many investigators at Cornell University Weill College of Medicine, Tufts University Medical School, Columbia University College of Physicians and Surgeons, Washington University School of Medicine, University of Texas Southwestern Medical Center, Broad Institute, Dana-Farber Cancer Institute, Purdue University, State University of New York at Albany, Royal Institute of Technology (Stockholm), and the Sahlgrenska Research Hospital of the University of Gothenburg, Sweden.

This presentation will place emphasis on the discovery and synthesis of target compounds as potential drugs for treating cancer and Niemann-Pick type C disease, one of several rare, inherited lysosomal storage disorders.

REFERENCES