H Foundation
Pilot Project Awards
Developmental Therapeutics Core (DTC)

Release Date: June 5, 2013

Application Due Date: July 7, 2013

Funding: $5,000 per project; potential for additional $5,000 for joint project with 2nd CLP Core (HTA, ChemCore, rPPC, PCE, QBIC or CAMI)

Through the generous support of the *H Foundation,* **members of the *Basic Sciences Research Division*** of the *Robert H. Lurie Comprehensive Cancer Center of Northwestern University* can apply for a pilot project award **to advance basic and translational research projects relevant to cancer**. The pilot project awards will provide up to $5,000 directly to the **Developmental Therapeutics Core (DTC)**. It is expected that these awards will enable investigators to obtain preliminary results that can be used to support research grant applications to external funding agencies for more extensive projects.

Award Objectives and Scope
The overall purpose of this award is to fund the use of the DTC facility to carry out pilot projects that require in-vitro screening, in-vivo diseases models, pharmacokinetics or toxicology projects with basic or translational research objective relevant to cancer. The proposals **must represent new and innovative research, not extensions of currently funded projects**, for which pilot funding is needed to generate preliminary data for longer-term programs. It is envisioned that promising pilot projects will be developed into R01, R03, or R21 grants.

DTC Services
The Developmental Therapeutics Core is a joint venture between the Robert H. Lurie Comprehensive Cancer Center (RHLCCC) and the Chemistry of Life Processes Institute (CLP). Established in April 2011 as a core within the Center for Developmental Therapeutics (CDT), DTC fulfills a central role in the translation of new oncoplogy drugs at Northwestern. Operating under the direction of Dr. Andrew Mazar, the core has facilitated the rapid growth of both basic and clinical cancer research with a focus on the development on new therapeutics and diagnostics by supporting the translational aspects of this research. The Core provides translational services to clinical investigators interested in moving agents into the clinic who might lack laboratory facilities and/or expertise with mouse tumor models. DTC also provides translational services to basic science investigators who lack expertise in tumor biology, e.g. for chemists synthesizing compounds with anti-tumor activities that lack the training to evaluate these compounds in vitro and in vivo. And finally, the Core supports the research activities of CDT, which is working on developing a number of novel therapeutic targets and approaches as well as novel animal tumor models (patient-derived xenografts) to support the next generation of translation. Thus, DTC is helping to advance the goals of the Northwestern cancer research community in developing new therapeutics and diagnostics from the benchtop into the clinic. To this end, DTC has become a sought-after collaborator on translational projects and has contributed to a number of grant applications coming out of Northwestern. More information can be found at http://cdt.northwestern.edu/developmental-therapeutics-core

Examples of analyses that can be done in DTC for potential pilot projects include, but are not limited to, the following:

- **In vivo tumor models:** Core personnel provide expert guidance in identifying the most appropriate tumor and animal model to evaluate the anti-cancer activity of novel synthesized compounds. The service includes designing the testing protocol, animal procurement, growing cancer cells, inoculating mice with the cells, drug administration in animals, and generating the report. Tumor models include

subcutaneous (tumor implantation in the left or right flank), orthotopic (tumor implanted in the original organ) or Patient Derived Xenograft (PDX). DTC has blanket IACUC protocol for the project to move forward in short time.

- **In vivo toxicology studies:** The DTC provides exploratory toxicology studies which include study design, experimentation, and written report. Animal costs and any additional fees such as housing, analysis of hematology, and blood chemistry panels, are passed on directly to the investigator. A full range of histopathology services are also provided by Dr. Ugolkov who is a trained MD PhD pathologist.
- **In vivo pharmacokinetics studies:** The need to understand the distribution and clearance of the drug in the animals is very important in the process of drug development. The DTC performs exploratory pharmacokinetics (PK) studies for PIs who are interested in understanding the fate of a drug in vivo. DTC can perform the in-life phase of the study and collect blood and tissue for analysis. For small molecules, it collaborates with the Mary Beth Donnelly Clinical Pharmacology Core, which develops LC/MS assays and carries out analysis. For other types of drugs, e.g. biologics, the DTC directly performs assay development, validation and analysis of samples.
- **Proliferation assays:** For studies of the effects of various agents on tumor cell proliferation in vitro the DTC provides proliferation assays based on NCI-60 panels/Northwestern U—Tumor Selections (NUTS) cell lines. This service tests either one concentration of drug on proliferation of up to 12 cell lines or the C50 (50% inhibition concentration or concentration in which the drug inhibits 50% of cell population) for 5 different concentrations within 2 or 3 cell lines.

Application Process

Application deadline: July 7, 2013.

- To discuss projects and feasibility with DTC, contact Keith Irawati (Angki) Kandela i-kandela@northwestern.edu
- Up to 2-page application (including figures and references) with the following sections: Specific Aims, Research Plan, Expected Outcomes, and Potential Pitfalls
- The application should **clearly state the cancer relevance** of the project
- Describe the innovative aspects of the application in the context of existing data and publications
- Give a brief description of how the pilot project data will be used to achieve longer-term research funding or continuation of the project
- Include any preliminary data on probe, nanoparticle, or material design and any results about cell uptake, toxicity or distribution
- Include a current NIH-style biosketch (limit 4 pages total) for the PI and any key personnel
- Applicants should not submit a budget. Applicants whose projects are reviewed will be provided a suggested research plan and associated budget prior to final award notification.

Evaluation Process

Applications will be evaluated based on:

- Cancer relevance
- Overall scientific merit, with particular attention given to the innovative characteristics of the proposal and the unique outcomes that are expected
- Likelihood of successfully achieving the application's aims within the scope of the award
- Prospects for obtaining continued funding of the project

Responsibilities of the Awardees

As a condition of funding, awardees will be expected to submit a one-page progress report two months prior to the end of the project year. Award funding will be expended within one year. Unspent funds will be withdrawn and reallocated to other projects.

Applications should be submitted via NUCATS ASSIST at: https://grants.nubic.northwestern.edu/welcome

For questions regarding any of the H Foundation Pilot Awards, contact Jenna TerMolen at (847) 467-0965 or email jter@northwestern.edu