

**Request For Applications
Center for Drug Discovery
(1/20/2018)**

Title: Collaborative Drug Screening for Human Diseases

Eligibility: All Primary Faculties in the Department of Pediatrics, Emory University, and Children's Healthcare of Atlanta

Application deadline: February 20, 2018

Objectives: Pediatric Center for Drug Discovery (CDD) encourages basic and clinical researchers to submit applications that focus on using cell culture disease models for chemical library screening and drug discovery. CDD will provide \$15,000 to selected applications proposing cellular phenotypic assays that are proper for the medium-throughput screening of the chemical libraries provided from CDD. Fluorescence-based cell imaging (i.e. GFP), enzyme based assays (i.e., luciferase), and cell counts (i.e. live and dead cells) are recommended as phenotypic readouts for the robotized drug screening instrument available in CDD (BioTek Cytation 3). Applicants should demonstrate the reliability, simplicity and reproducibility of the phenotypic readouts as well as disease relevance and significance. The long-term goal of this RFA is to enable the researchers to explore the drug discovery pathways for future translational and clinical applications.

Background: Emory University has been a key leader in academic drug discovery as demonstrated by the world-renowned chemistry group of the Laboratory of Biochemical Pharmacology (LOBP) led by Dr. Raymond F. Schinazi who is also a CDD member. CDD, which was established in 2013, has been recruiting and establishing intense collaborative investigations with LOBP for drug discovery against a number of infectious pathogens including RSV, Influenza virus, Dengue virus, Ebola virus, Chikungunya, as well as HIV-1. Also, CDD is running several extramural programs to validate and develop chemical compounds provided from both academic and industry collaborators. Finally, CDD is also operating biologic programs such as Zika virus live attenuate vaccine candidates developed by CDD/Emory/CHOA.

Through this RFA, CDD plans to launch extensive collaborative drug screening efforts for targeting human diseases that many department and CHOA faculties are currently studying. In 2013, together with LOBP, CDD purchased a BioTek Cytation 3, a robotized award winning drug screening instrument with capability for high - and medium – throughput drug screening. The capabilities of this instrument include automated imaging (3 color plus bright field for cell counting), fluorescence, absorbance, and luminescence. Also, CDD maintains several chemical libraries for supporting the pilot awards, including US FDA approved compounds and other biological active chemicals with minimal toxicity.

Selection criteria: This RFA will support **2 applications** that successfully fulfill several key criteria: **1)** disease relevance and significance, **2)** cell culture based phenotypes that can be read by Cytation 3 (http://www.biotek.com/products/imaging/cytation3_cell_imaging_multi_mode_reader.html) and **3)** feasibility, reproducibility and simplicity of the phenotypic readouts/systems.

Budget and screening procedures: Selected applicants will each be awarded **\$15,000** to be used for conducting the drug screening process with one medium-throughput library (typically **~2,000 compounds**). The compounds will be provided to the laboratories of the awarded PIs, and the laboratories will perform the exposure of the biological systems to the compounds and complete the assay. Then, the compound-treated assay systems will be delivered to CDD where the PI's laboratory personnel will analyze the delivered systems with the Cytation 3 instrument (CDD personnel will assist the screening). The CDD personnel will collect and deliver the screening results to the PIs. Discussions for further research beyond the initial screening will be arranged upon the completion of the screening. While it is preferred that the entire process should be covered by the awarded support, any additional costs beyond the awarded budget will be the responsibility of PIs.

Decision announcement: 3/1/2018 (The fund for the selected projects will be available immediately after the funding decision)

Date for the completion of the drug screening/data delivery and the end of the funding period: 12/31/2018

Progress and final reports: Progress reports (maximum 4 pages) should be submitted by 8/1/2018, and the final report (maximum 5 pages) is due by 12/31/2018.

Application format (one single PDF file):

- 1) PI's NIH Biosketch
- 2) Science narrative (3 pages):
Page 1: Title, background, and significance
Pages 2 and 3: Description of the tissue-culture phenotype/assay with data, which demonstrates the feasibility, reproducibility and simplicity of the proposed assay.
Page 4: Budget details: \$15,000 including salary and reagents.
- 3) Single space, Arial 11, and references should be in separate pages.

* **All applications should be submitted to Jennifer Villasenor by email (jkenny2@emory.edu) by 2/20/2018.**

* **Please email Dr. Baek Kim (baek.kim@emory.edu) if you have any questions about this RFA.**