



dedicated to finding a cure

JDRF Announces a Directed Innovative Award for Projects in High Content Cell-based Assays to Support Target Identification in Complications of Type 1 Diabetes

Background and Purpose of the Award

Advances in cellular signal transduction pathways in disease are the foundation of target-specific drug discovery and development. The emphasis in drug discovery and development is now doable, through advanced technology, to include the systematic discovery of therapeutics incorporating high content cell-based assays to interrogate core pathways in cells; i.e. functional assays. High content assays refer to the systematic, parallel acquisition of data on different cell properties. For example, functional manifestations of signal transduction cascades, cell surface receptor upregulation/desensitization, cytoskeletal integrity, cell proliferation or other morphological changes can be assessed in parallel to derive a profile of cellular function following exposure to chemical or biological agonists and antagonists. The multiplexed testing is the main advantage of high-content assays in comparison to the faster but less detailed high throughput chemical screening methods. While high content assays are medium to low throughput, the wealth of acquired data may yield a profound understanding of drug effects.

The purpose of this award is to advance innovation in the development of high content assays in the field of Complications of Type 1 diabetes; specifically applied to proliferative retinopathy, renal fibrosis, axonal regeneration and microvascular inflammatory signaling. Innovative applications will profile metabolic and morphological changes, post-translational modification, gene expression and protein expression in culture systems relevant to Type 1 diabetes. Techniques such as sophisticated imaging, advanced fluorescence and flow cytometry techniques, simultaneous probes with simultaneous readouts over an extended time course in single or mixed cell systems are encouraged.

Specific Goals of the Request

JDRF seeks innovative and highly focused applications from qualified investigators in both academic and industry settings to develop high-content assays coupled to pathways in diabetic complications. Of specific interest are ganglia, microglial and Muller cells of the retina; podocytes, mesangial and tubular cells of the kidney and both neurons and Schwann cells of peripheral nerve. JDRF anticipates that development of precision, high content assays for cellular functional and phenotypic responses to stimuli may be suitable for automation. A comparison between the diabetic and non-diabetic state is essential and approaches must include methods to capture a comprehensive phenotype of cellular function, survival and/or regeneration using signal transduction pathways, proteomic or genomic approaches. Examples of useful perturbations include chemical, genetic or RNAi libraries.

Restrictions

Applicants from either academic institutions or industry are eligible. Coupled applications, two or more investigators from the same or different institutions, will be accepted. Coupled applications awarded separately will be considered as conjoined projects, where each investigator is awarded a separate grant and is accountable for a defined portion of the project deliverable. Cardiovascular disease, large vessel

disease, wound healing approaches and endothelial progenitor cell high content assay development are not among our priorities for this announcement.

Interested applicants are encouraged to contact the Program Staff to discuss the project plan and determine responsiveness to the scope of the announcement. Applications should be no more than 3 pages in length and include the following information:

1. Name, title and institution or industry of principal investigator, and any co-investigator or key collaborator
2. Summarize the target cell type and its role in tissue or organ disease of Type 1 diabetic complications
3. Brief rationale and screening potential of the strategy proposed
4. Brief description of proposed research plan, as well as pitfalls
5. The research plan page limit excludes figures, tables and legends that may be included as supporting the feasibility of the research.
6. Budget: \$110,000 USD for 1 year, including 10% indirect costs. At the invitation by JDRF scientific staff, the project budget and duration may be expanded.

Inquiries should be directed to **John Gebhard, Ph.D.** at jgebhard@jdrf.org; tel: +1-801-673-9929; **Helen Nickerson, Ph.D.** at hnickerson@jdrf.org; tel: +1-212-479-7522 or **Barbara Araneo, Ph.D.** at baraneo@jdrf.org; tel: +1-212-479-7662

Applicants are directed to submit via proposalCentral (<http://proposalcentral.altum.com/default.asp?GMID=16>) using the template provided no later than March 2, 2009 at 11:59 p.m. EST.

Key Dates:

Application opens	December 15, 2008
Application deadline (on proposalCENTRAL)	March 2, 2009
Final review	June 2009

The JDRF hopes to accelerate progress and address bottlenecks through interactive assessment of progress on the research plan. Under the terms of the award, the research plan is designed with quarterly milestones and, following project activation, written quarterly reports (a brief template approximately 1 page) will be reviewed by JDRF staff as a basis for continued support. Quarterly reports provide the opportunity for investigators to highlight progress towards research milestones as well as identify impediments to progress and emphasize ways in which JDRF may accelerate the research progress.

Applicants must adhere to the following guidelines:

- The budget may not exceed \$110,000 USD per year total costs, including 10% indirect costs.
- The total project period may not exceed one year.
- Under extraordinary circumstances, the staff may expand or extend the budget and project period of the research plan. Such opportunities are solely at the discretion of the staff.
- Quarterly project timelines must be provided in the application.
- Desired projected deliverables for the 1-yr project must be provided in the application; these will be reviewed and may be modified as work progresses. Changes in the research plan require prior discussion with the JDRF program staff and may take place during the course of the research program.

Applications not funded in this competition may be resubmitted as innovative grants using the standard receipt dates for applications described on the JDRF website: <http://www.jdrf.org/>

ADMINISTRATIVE CONTACT

Sara Adan
Grant Coordinator
Juvenile Diabetes Research Foundation
120 Wall Street, 16th Floor
New York, NY 10005
212-479-7674
sadan@jdrf.org

proposalCENTRAL

<http://proposalcentral.altum.com/default.asp?GMID=16>

pcsupport@altum.com

(301)-916-4557 ext. 227, or toll free in the US, (800)-875-2562 ext. 227

Assistance can be obtained Monday through Friday between 8:30am and 5pm U.S. Eastern Time.