

BETA CELL BIOLOGY CONSORTIUM

2011 Pilot and Feasibility Program



IMPORTANT DATES

<i>Before May 20, 2011</i>	Discuss concept with BCBC Project Scientist
<i>May 20, 2011</i>	Deadline for Letter of Intent
<i>May 26, 2011</i>	Pre-approval by NIDDK staff
<i>June 17, 2011</i>	Deadline for application submission via SPOT
<i>July 22, 2011</i>	Expected review decisions

BACKGROUND

The mission of the Beta Cell Biology Consortium (BCBC) is to bring a team-based approach to the acquisition of new knowledge and the production of novel resources necessary to develop cell-based therapies for insulin delivery. The main research strategies currently being pursued include: 1) identifying cues from pancreatic development to inform methods to directly differentiate pancreatic beta cells and islets from stem/progenitor cells for use in cell-replacement therapies for diabetes, 2) determining how to stimulate beta cell regeneration in the adult pancreas as a basis for improving beta cell mass in diabetic patients, 3) determining how to reprogram progenitor/adult cells into pancreatic beta cells both *in vitro* and *in vivo* as a means for developing cell-replacement therapies for diabetes, and 4) investigating the progression of human type-1 (T1D) diabetes using patient-derived cells and tissues transplanted in specialized mouse models. The BCBC is also working collaboratively to create and distribute critical reagents (antibodies, viral vectors, small molecules, etc.), relevant transgenic mouse lines and preclinical model systems, as well as to establish protocols to identify, purify and characterize pancreatic stem/progenitor cells to fulfill its mission. This information is being distributed using a dedicated website (www.betacell.org).

PURPOSE OF THE AWARD

The BCBC Pilot and Feasibility (P&F) Program provides research support for a limited time (one or two years) to enable non-BCBC investigators to explore concepts related to the mission of the BCBC that will generate sufficient data to pursue support through traditional funding mechanisms, and to interact and synergize with BCBC Investigators for the duration of the award. The P&F studies are intended to: 1) allow exploration of innovative new leads or directions for established investigators in stem cell biology, developmental and regenerative biology of the pancreas, beta cell replacement and/or reprogramming of adult cells into beta cells and 2) stimulate investigators from other fields of science to lend their expertise to research in these areas. Pilot and feasibility study support is not intended for large projects by established investigators which would otherwise be submitted as separate research grant applications.

Note: the NIH allows federal funding for research using human embryonic stem cells (hESCs) and an NIH registry for hESC lines has been established. The BCBC will support efforts in the characterization of these hESCs as they relate specifically to the differentiation of islet cell types, in particular, pancreatic beta cells. Pilot and feasibility studies through the Consortium are required to specifically list the hESC line (refer to <http://escr.nih.gov/>) that will be used in the study and submit an MTA without reach through restrictions. Additional information on the use of hESC lines is available at: <http://stemcells.nih.gov/index.asp>.

REQUIREMENTS

P&F projects are restricted to \$100,000 direct costs per year for up to 2 years. Investigators from domestic institutions should include the accurate institutional facilities and administrative rate in their budgets. Investigators from international institutions should include a facilities and administrative rate of 8% in their budgets. All recipients of these funds will be required to sign the BCBC Policies and Guidelines document, which outlines rules for the sharing of information and reagents, before any funds will be dispersed. The most recent version of the BCBC Policies and Guidelines is available for review at <http://www.betacell.org/about/policies/>. All P&F recipients will 1) become a “BCBC Co-Investigator” and 2) be required to attend the annual BCBC Spring Retreat.

ELIGIBILITY AND RELATED GUIDELINES

Investigators eligible for P&F funding generally fall into three categories: 1) new investigators without current or past NIH research support as a principal investigator, 2) established investigators with no previous work in beta cell biology who wish to apply their expertise to a problem in this area, and 3) established investigators in beta cell biology who propose testing highly innovative ideas that represent a clear departure from ongoing research interests. All eligible investigators must have faculty appointments and be independent investigators. Postdoctoral fellows or their equivalent are not eligible. Current BCBC investigators are not eligible. Each pilot and feasibility study proposal should state clearly the justification for eligibility of the investigator under one of the above three criteria. PI salary support is permitted. At the conclusion of the funded activity, the PI must submit to the BCBC Coordinating Center a Progress Report that includes a description of the activities, outcomes, deliverables and an assessment of the successes in meeting the stated objectives.

A proposed P&F study should present a testable hypothesis or alternatively, a strong scientific rationale for the development of an essential reagent, assay, or innovative technology. The focus should be on topics that will advance the development of therapeutic strategies for beta-cell replacement therapy, or restoration of beta cell mass in type-1 or severe type-2 diabetic patients. The proposal should clearly delineate the questions being asked, detail the procedures to be followed, and discuss how the data will be analyzed. Proposals must address topics related and complementary to the mission of the BCBC (see <http://www.betacell.org>). Areas of research particularly relevant to the current effort of the consortium include, but are not limited to:

- Molecular interrogation of human pancreatic cell populations recovered from T1D patients and correlation with disease status;
- Strategies to enhance human beta cell regeneration and/or to regulate beta cell mass *in vivo*;
- Methods to measure human beta cell mass and/or function *in vivo*;
- Small molecules or secreted factors controlling beta cell *fate* or beta cell regeneration in humans;
- Development and validation of cell-specific, *in vivo* methods capable of delivering biologics or potential therapeutics to the pancreas, including modifiers that can enhance beta cell regeneration or reprogramming to the beta cell lineage, confer protection against autoimmunity, or image human beta cell mass or function;
- Protection of transplanted beta cells or beta cell precursors from autoimmune destruction.

Projects should be highly focused since funding for these studies is limited to 2 years. Any one investigator is eligible only once for this support, unless the additional proposed pilot and feasibility study constitutes a real departure from his/her ongoing research.

APPLICATION PROCESS

1. Contact NIDDK Representative

Potential P&F applicants MUST discuss the concept behind their proposal, prior to the writing and submission of a Letter of Intent, with the BCBC Project Scientist, Olivier Blondel:

Olivier Blondel, Ph.D.
Project Scientist, Beta Cell Biology Consortium
Division of Diabetes, Endocrinology and Metabolic Diseases
National Institute of Diabetes, Digestive and Kidney Diseases
National Institutes of Health
Democracy 2, Room 796
6707 Democracy Blvd.
Bethesda, MD 20892-5460
Phone: 301-451-7334
Email: blondelol@niddk.nih

2. Letter of Intent (LOI)

Submission of a Letter of Intent is required and constitutes a pre-approval process. LOIs need to be submitted no later than **May 20, 2011**. The letter should not exceed three pages and must contain the following information:

- Project title and acronym,
- Name and affiliation of the Investigator,
- An abstract of the proposed P&F including the specific aims and/or objectives, including a lay abstract to be posted on the public site of the BCBC website,
- A short description of how the project is programmatically relevant to the BCBC,
- An estimated summary budget (e.g. overall cost projection) for the entire P&F.

NIDDK staff will consider the Letter of Intent and may request changes regarding the scope of the research or the size of the budget. At this stage, NIDDK may turn down projects that are not deemed relevant to the BCBC mission or the P&F mechanism, are redundant with existing research efforts, or do not rise to a level of significance that justifies the use of BCBC funds. Recommendation from Program Staff to move forward or not with a full P&F application will be communicated to applicants no later than **May 26, 2011**. All LOIs (preferably as a PDF document) must be sent by email to both:

Olivier Blondel, Ph.D.
NIDDK Project Scientist
Beta Cell Biology Consortium
Email: blondelol@niddk.nih.gov

and Jean-Philippe Cartailier, Ph.D.
Director of Informatics
BCBC Coordinating Center
Email: jp.cartailier@vanderbilt.edu

3. Writing of the P&F application

Upon approval of the LOI, Project Leaders will then submit a more detailed research proposal, as noted below. The full application will be submitted electronically via the BCBC Scientific Project Online Tracker (SPOT) application. SPOT will be available only for projects that have undergone the preapproval process. All applications must be submitted online starting on **June 6, 2011** and be received no later than **June 17, 2011**

(5PM CST). Instructions for electronic submission of a complete application is available at <http://www.betacell.org/research/pilot/?rfa>.

REVIEW AND FUNDING PROCEDURE

Panels of reviewers are organized by NIDDK staff and typically consist of two to four external reviewers and one NIDDK Program Reviewer per application. An assessment of programmatic relevance and funding decision will be made by the Principal Investigator of the BCBC Coordinating Center together with NIDDK staff. The review is expected to occur by **July 22, 2011**, with funding initiating on or shortly after that date.

The review criteria are:

- The novelty, uniqueness and/or transformative potential of the opportunity presented by the proposed activity,
- The appropriateness of the scope of work proposed, given the time and budget requested,
- The potential benefit for the BCBC and potential impact on the field of beta cell replacement.

All applications will receive a score using the old NIH scoring system of 1.0 to 5.0:

1.0-1.4	Outstanding
1.5-1.9	Excellent
2.0-2.4	Very good
2.5-3.4	Good
3.5-5.0	Acceptable

It is estimated that three to six P&Fs will be awarded in 2011, depending on the outcome of the review, budgets and potential impact of the top-scoring projects. Funding for these projects will be provided via a subcontract or subaward from the BCBC Coordinating Center at Vanderbilt University.