

**INSTRUCTIONS FOR PREPARATION OF CRITIQUES (R33)**  
National Institutes of Diabetes and Digestive and Kidney Diseases

The goals of NIH-supported research are to advance our understanding of biological systems, improve the control of disease, and enhance health. In the written comments, please discuss the following aspects of the application in order to judge the likelihood that the proposed research will have a substantial impact on the pursuit of these goals. Each of these criteria will be addressed and considered in assigning the overall score, weighting them as appropriate for each application. Note that the application does not need to be strong in all categories to be judged likely to have major scientific impact and thus deserve a high priority score. For example, an investigator may propose to carry out important work that by its nature is not innovative but is essential to move a field forward.

**EVALUATION OF APPLICATIONS**

PRIMARY REVIEWERS should provide an overall evaluation, briefly summarize the most important points of your critique, weighting the review criteria as you feel appropriate, and evaluating the overall impact of the research on the field. (Note: an application does not need to be strong in all categories to be judged likely to have a major scientific impact and thus deserve a high merit rating.) A description, which should be taken from the abstract of the application, is optional. In the critique, the five review criteria should be addressed as separate sections.

SECONDARY REVIEWERS need only prepare written critiques addressing the five criteria and recommendations, although comments on any other sections are welcome.

DISCUSSANT should have read the assignment carefully and be conversant with it but are not required to supply a written critique, although it is appreciated.

**REVIEW CRITERIA**

Please note that the applicant must provide preliminary data and evidence of feasibility

1. **Significance:** Does this study address an important problem in type 1 diabetes research? If the aims of the application are achieved, how will scientific knowledge be advanced? What will be the effect of these studies on the concepts or methods that drive this field?
2. **Approach:** Are the conceptual framework, design, methods, and analyses adequately developed, well-integrated, and appropriate to the aims of the project? Does the applicant acknowledge potential problem areas and consider alternative tactics?
3. **Innovation:** Does the project employ novel concepts, approaches or methods? Are the aims original and innovative? Does the project challenge existing paradigms or develop new methodologies or technologies?
4. **Investigators:** Are the investigators appropriately trained and well suited to carry out this work? Is the work proposed appropriate to the experience level of the principal investigator and other researchers? Is the research partnership innovative? Is the research partnership interdisciplinary and does it merge scientific expertise based upon strong experimental rationale and sound project goals?
5. **Environment:** Does the scientific environment in which the work will be done contribute to the probability of success? Do the proposed experiments take advantage of unique features of the scientific environment or employ useful collaborative arrangements? Is there evidence of institutional support? Do not describe available facilities and equipment.

Budget: Evaluate direct costs only. For all years, determine whether all items of the budget are appropriate and justified. Provide a rationale for each suggested modification in amount or duration of support.

Recommendation: If not recommended for no further consideration, assign a merit descriptor term/priority score. With regard to personnel, do not be concerned with the salary requested but with the percent effort proposed.

**INSTRUCTIONS FOR PREPARATION OF CRITIQUES (R33)**  
National Institutes of Diabetes and Digestive and Kidney Diseases

**OTHER CONSIDERATIONS**

**WOMEN, CHILDREN AND MINORITIES IN STUDY POPULATIONS:** Examine whether the minority and gender characteristics of the sample are scientifically acceptable and consistent with the aims of the project, using the categories of 1 to 4 as follows. Determine whether children have been included or appropriately excluded from the study population. (Also determine whether the research is a Phase III clinical trial.)

<u>CODE</u>	<u>Minority (M)</u>	<u>Gender (G)</u>	<u>Children (C)</u>
1	minority and non-minority	both females and males	both children and adults
2	only minority	females only	children only
3	only non-minority	males only	no children included
4	representation unknown	unknown	unknown

Evaluate acceptability as "A" (acceptable) or "U" (unacceptable). If you rate the sample as "U", consider this feature a weakness or a deficiency in the design of the project reflected in the overall scoring of the project. NOTE: To the degree that acceptability or unacceptability impacts on the investigator's approach to the proposed research, such comments should appear under Approach in the five major review criteria above and should be factored into the score as appropriate.

**FOREIGN INSTITUTIONS:** If the applicant organization is foreign, comment on any special talents, resources, populations, or environmental conditions that are not readily available in the United States or that provide augmentation of existing U.S. resources. In addition, indicate whether similar research is being performed in the U.S. and whether there is a need for such additional research. These aspects do not apply to applications from U.S. organizations for projects containing a significant foreign component.

**HUMAN SUBJECTS:** If Exemptions are Claimed, express any comments or concerns about the appropriateness of the exemption(s) claimed (e.g., for Exemption 4, is it clear that the information will be recorded by the investigator so that subjects cannot be identified directly or indirectly?). If No Exemptions are Claimed, express any comments or concerns about the appropriateness of the responses to the six required points, especially whether the risks to subjects are reasonable in relation to the anticipated benefits to the subjects and in relation to the importance of the knowledge that may reasonably be expected to result from the research.

**ANIMAL WELFARE:** Express any comments or concerns about the appropriateness of the responses to the five required points, especially whether the procedures will be limited to those that are unavoidable in the conduct of scientifically sound research.

**BIOHAZARDS:** Note any materials or procedures that are potentially hazardous to research personnel and indicate whether the protection proposed will be adequate.

**SCIENTIFIC/BUDGETARY OVERLAP:** If it is identified in an application, it should be noted in a statement separate from the critique and should not be considered in the evaluation of the application. Identify if there is an overlap of aims or excessive effort between this application and other active or pending support. Reviewers are asked to focus on the scientific and technical merit of the application. The Scientific Review Administrator will ensure that such issues are documented in the summary statement as an administrative note. Purported overlap must be resolved by NIH staff before an award is made.

**HUMAN SUBJECTS, ANIMAL WELFARE, AND BIOHAZARDS CONCERNS**

Human subjects concerns are important to the NIH. As you evaluate the treatment of human subjects as proposed in the application, please weigh the risks and benefits to the subjects of entering a protocol and indicate whether: (a) they will be at risk as the result of a procedure; (b) an informed consent form has been reviewed by an Institutional Review Board; (c) procedures have been included to deal with potential untoward effects of a treatment; and (d) measures have been taken to protect the anonymity of the subjects. For those applications that deal with human subjects, an indication of concern or no concern should be given as regards treatment of patients. (For more information, see <http://grants.nih.gov/grants/oprr/humansubjects/45cfr46.htm>.)

In conformance with NIH policy, the use of women, children, and minority individuals in patient populations is an issue that should be addressed in any application which involves clinical research (for more information, see <http://grants.nih.gov/grants/guide/notice-files/not98-024.html> and <http://grants.nih.gov/grants/oprr/humansubjects/guidance/59fr14508.htm>). Clinical research includes "...human

**INSTRUCTIONS FOR PREPARATION OF CRITIQUES (R33)**  
National Institutes of Diabetes and Digestive and Kidney Diseases

biomedical and behavioral studies of etiology, epidemiology, prevention (and preventive strategies), diagnosis, or treatment of diseases, disorders or conditions, including but not limited to clinical trials" (OER 90-5). If there is no compelling rationale provided for the exclusion or under-representation of women, children, and minorities from the patient study population, this constitutes a flaw in experimental design and should be reflected in the priority score. Reviewers are asked to inform the Scientific Review Administrator before the review if such concerns exist and to comment specifically on these issues in their critiques. In addition, you will be asked to recommend a code for the application.

Careful scrutiny also should be given to treatment of animals in experimental protocols (for more information, see <http://www.nap.edu/readingroom/books/labrats/>.) The following issues shall be addressed in the application: (a) the identification of the species and approximate number of animals required; (b) the rationale for using animals and the appropriateness of the species and numbers indicated for the work proposed; (c) a complete description of the anticipated use of the animals; (d) an assurance that discomfort and injury to animals will be limited to unavoidable situations and that analgesic, anesthetic, and tranquilizing drugs will be employed where possible to minimize discomfort and pain; and (e) a description of any euthanasia method to be applied. Please indicate in your written critique if you have reason to be concerned over any of these issues.

If biohazardous materials are to be used in the proposed research, the principal investigator should address the proper handling of such items.