



**Department of Biotechnology
Ministry of Science & Technology
Government of India**

[Call for R&D project proposals on 'Human Genetic Diseases'](#)

Background:

Genetics and genomics play key roles in human health and disease outcome. Fast, large-scale, low-cost genome sequencing has propelled genomic medicine into mainstream driving a revolutionary shift toward precision medicine. Individual genetic makeup and variation inform the risk of disease, and can be used as a screening tool to more precisely characterize health outcomes, and to advise medicine selection, including treatment and therapies that may be designed to target specific disease conditions. Human Genetics and Genomics program of the Department of Biotechnology (DBT) supports research and development activities to uncover the role that the genetics and genomics plays in human health.

The program supports research across a spectrum: basic research, translational research and clinical research to establish how to use genomic information to advance medical care. Overall aim of the program is to support R&D activities for i) understanding the role of genetic component in health and disease, and the cross-talk of these components with environmental and lifestyle factors, ii) translating the understanding thus acquired for the improvement of human health, iii) development of genomics-based strategies for prediction, diagnosis, treatment and prevention of disease, iv) development of early- warning minimally invasive diagnostic biomarkers for diseases with a genetic basis, v) building capacity in human genetics and genomics by promoting training on technology platforms and methodologies for genome analysis in relation to human health and disease, etc.

Thrust Areas:

Considering the health burden of the Human Genetic Diseases, the Department is desirous of supporting cutting-edge Research and Development (R&D) project proposals on Human Genetic Diseases focusing on the following thrust areas:

- ❖ ***Rare Genetic Disorders:*** To study disease associated genetic variation and development of new diagnostic tests, and targeted treatments for rare genetic disorders.
- ❖ ***Discovery of causative genes for various Mendelian disorders*** such as cerebral ataxias, cortical malformations, intellectual disability, dystonia, etc.
- ❖ ***Genetics of multi-factorial disorders with monogenic component*** such as Anencephaly, Parkinson's, Alzheimer's, Cardiovascular disorders, Diabetes etc.
- ❖ ***Program on diagnostics development of human genetic diseases using genetic model organisms.***
- ❖ ***Creation, Integration, and development of capacity & resources for functional interpretation & validation of disease-associated genetic variations of Indian Genetic Diseases Database for genetic diseases relevant to India***

- ❖ *Transdisciplinary collaborative research exploring the potential of precision medicine with focus on development of new tools and analytic methods for integrating patient data with information about contextual factors acting at the community or population level to influence health outcomes.*
- ❖ *Development of pharmacogenomic and other precision medicine tools to identify critical biomarkers for disease progression and drug responses in diverse populations.*
- ❖ *Translation of pharmacogenomic discoveries into clinical practice including effective treatments.*

Eligibility:

Scientists / Clinicians / Researchers working in a regular capacity in Government R&D Institutions / Medical Colleges / Academic Institutions / National Laboratories or SIRO recognized Non-Profit R&D Organizations, with sound relevant scientific & technical backgrounds and relevant publications in the proposed research area in the proposal can submit project proposals.

Mode of Submission:

Interested researchers should submit project proposals online through DBT electronic project management system 'eProMis' (<http://dbtepromis.nic.in/Login.aspx>) under the Programme 'Human Genetics and Genome Analysis'. Soft copy of the final version of the proposal submitted in epromis alongwith all annexures / declarations etc. should also be send to the program officer by email in the email ID: onkar.dbt@nic.in. The proposals which are not submitted through DBT eProMIS portal may not be considered.

Evaluation Criteria:

Proposals will be evaluated based on the following criteria:

- The scientific merit and technical strength of the project
- National importance of the proposed research activities
- Novelty, level of Innovation and clarity of proposed technical strategy
- Need assessment and demand for proposed work in alignment to national priorities
- Proposal formulation (Precision in the objective, completeness of literature review, preliminary work done, methodology and work plan, resources requested for this purpose, effectiveness of planning and resource management, etc.)
- Proposals can be assessed for establishment of proof-of-concept; development and validation of technology.
- Investigator's credentials and expertise; available facilities; track record and ability of the Investigators to achieve the research goals etc.

Cross-disciplinary proposals having near-term translational potential may be given priority. Department also reserves the right to select or reject the proposals based on the priority and availability of funds.

Contact for further information:

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Last Date for Project Submission: 31st January, 2023.