

Biotechnology

National Institute of Biomedical Genomics to become operational from April 2010

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The National Institute of Biomedical Genomics (NIBMG), being established under the National Biotechnology Development Strategy to provide basic research evidence using biomedical genomic approaches for betterment of public health programmes and services will be operational from April this year.

The institute, being established to conduct and promote cutting-edge research in biomedical genomics, will be an autonomous body under the administrative control of the Department of Biotechnology (DBT). It is being established at Kalyani near Kolkata in West Bengal.

NIBMG director Dr Partha Majumder said that the main objective of the institute is to promote better public health in India by conducting large genetic epidemiological studies on Indian populations on diseases of importance in India, including susceptibilities to infectious diseases and responses to vaccines against infections.

The institute will also conduct focused studies to identify genes underlying common diseases and understanding how these genes interact with environmental factors. It will have public outreach programmes, in collaboration with clinicians, on inherited diseases, such as thalassaemia, sickle cell anaemia, etc. It will also be conducting training programmes on genetic epidemiology for clinicians and basic scientists.

The Institute, for which the government has already invested Rs 8 crore, is being constructed on a 30-acre plot of land, with academic blocks, student and faculty housing, guest houses and a conference centre. An interim facility of about 120,000 sq. ft. of floor space, constructed on the upper storey of an adjacent infectious diseases hospital, has become functional.

The institute has been engaging in a number of activities. "We have just completed a major project on immune response to typhoid vaccine. We have identified some variants important genes that contribute to variability in immune response to a marketed vaccine (typherix) for typhoid. Identification of these variants will be helpful to improve the vaccine so that it reduces variability in response across individuals, i.e., a greater fraction of individuals show greater response. This is of obvious public health importance," Dr Majumder said.

At present NIBMG is focusing on executing genomic activities related to the India component of the international cancer genome consortium. The India component of this project is being funded by the DBT and the scientific work is being carried out by NIBMG and ACTREC, Tata Memorial Hospital. "We shall use next-generation sequencing technologies to identify the full spectrum of genomic variations observed in oral cancer, using biospecimens from 500 oral cancer patients (to be collected in ACTREC). In addition, we have undertaken a project on identifying the role of innate immunity genes in susceptibility to tuberculosis. We also plan to establish large cohorts for genetic epidemiological studies of common diseases."