DEPARTMENT OF BIOTECHNOLOGY  
MINISTRY OF SCIENCE & TECHNOLOGY  
CALL FOR PROPOSALS IN THE AREA OF GENOMICS AND  
METABOLOMICS OF MEDICINAL AND AROMATIC PLANTS  

Molecular biology offers promising tools for the creation of novel crop varieties with improved nutritional value, resistance to herbicides, pests, diseases and adverse climatic conditions. The post-genomic era presents new opportunities for manipulating plant chemistry for improvement of plant traits. Using recombinant DNA technology, it is now possible to manipulate the levels and composition of therapeutically active compounds and essential oils in medicinal and aromatic plants. However, in order to accomplish this task, it is crucial to understand the whole metabolome along with the biochemical pathways and identification, characterization and expression of the gene(s) involved in the synthesis of specific natural products. Organ specificity or temporal restrictions for the production of natural products can also be overcome using genetic engineering. In addition, opportunities are emerging for the application of genetic engineering into existing breeding programmes for realizing the biosynthetic potential of medicinal and aromatic plants.

The Department of Biotechnology as a nodal funding agency invites proposals under the following three categories:

**Category—I**

- Projects with specific objectives based on specific metabolite products in *Artemisia annua* for increasing the yield of artemisinin and rose for developing high value essential oil rich clones.

**Category—II**

- Exploratory projects on comparative metabolomics of *Papaver somniferum* for increasing the morphine alkaloids content in Indian cultivars; *Picrophiza kurroa* for increasing iridoid glycosides content, *Phyllanthus amarus* for enhancing lignans and flavanoid contents and *Plantago ovata* for developing improved varieties with high mucilage content.

**Category—III**

- Genome initiative and comparative alkaloidomics in *Ocimum* (tulsi) and *Santalum album* (sandal).

Financial support could be considered for a period of three to five years or longer in the programmes demonstrating significant progress. The proposals should be result-oriented within a stipulated time frame. The focus should be on rate limiting factors in metabolic pathways and should be in a gap-filling mode towards targeting the desired high value products from medicinal and aromatic plants. Preference will be given to the project proposals where collaboration with industry is proposed.

Twenty copies of the proposal in the prescribed format should be sent to Dr Mohd. Aslam, Scientist-E, Department of Biotechnology, Block-2, CGO complex, Lodhi Road, New Delhi 110 003. The last date for the receipt of application is 45 days from the date of advertisement. The format and terms and conditions can be downloaded from the DBT website www.dbtindia.nic.in (or) www.dbtindia.org