

MAHENDRA ARTS & SCIENCE COLLEGE

(AUTONOMOUS)

MAHENDRA CENTRE FOR RESEARCH & INNOVATIONS (MCRI)

Research and development (R&D) in Mahendra Arts and Science College is one among Higher Education Research Institution (HERI) and functioning in the name of "***Mahendra Centre for Research and Innovations (MCRI)***" is a process intended to create new or improved technologies that may provide a competitive advantages in research and innovations.

The Mahendra Centre for Research and Innovations (MCRI) was established to strengthen basic and applied research also to improve MOUs & research collaborations with the following institutions

- Department of Environmental Resources, Chonbuk National University, South Korea.
- Department of Environmental Engineering, Muroran Institute of Technology, Japan.
- National Pusan University, South Korea
- University of Trieste, Italy
- Technical University of Poland
- Alga marine Research Center, Chennai.
- Vertis Biolab and Microlab, Salem

The MCRI is very keen in research activities and published around 425 research articles in reputed national and international journal with the citations index around 3250.

In addition with the above, research projects of national importance in the field of basic and applied sciences received research grants from the Tamil Nadu State Council for Science & Technology (TNSCST) and has attracted fund under DST and recognized as DST-FIST sponsored research center, University Grants Commission as financial support for strengthening of laboratory equipment to be utilized for post graduate and research scholars under Mahendra Centre for Research and Innovations (MCRI).

The following centre's are actively functioning under MCRI

- Centre for Micro algal culture and Pigment Extractions
- Centre for Ex-situ Conservation of germplasm through medicinal plant garden
- Centre for Bio-fertilizer production
- Centre for Mushroom cultivation

- Mitigation of CO₂ Emissions by Bamboo Garden
- Eco- Restoration and Preservation of Environment
- Centre for Tissue Culture Banana Propagation
- Centre for Biological Data Analysis and Resource Center
 - ✓ T2DMDB – Type 2 Diabetes Mellitus Database
 - ✓ BCGDB – Breast Cancer Gene Database
 - ✓ BacKDB – Bacterial Kinase Database
- Centre for Nanotechnology
- Centre for Cell culture and Tissue Engineering

Moreover, MCRI established Research and Training Center for Spirulina cultivation, Bio-pigment extraction, Medicinal plant germ-plasm maintenance, Nanotechnology, Sensors, Solar Cells, Mushroom production and Vermi-composting technology to promote basic and applied research for the betterment of the society. The center is well connected with advanced Soft-wares like Flex X and SeeSAR and tools are used for the study of Molecular Docking, Pharmacokinetics of drugs interactive and evolution.

Centre for Microalgal and Pigment Extraction



Center for *Ex situ* Conservation of Medicinal Plants

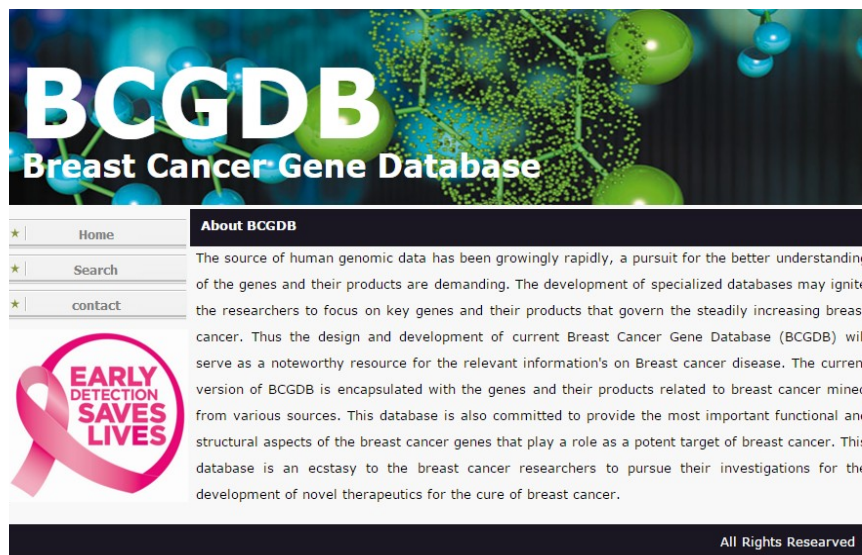


Centre for Biological Data Analysis and Resource Centre



The screenshot shows the EVirDB website. At the top, there is a banner with the text "EVirDB- Enterobacteriaceae Virulence Factor Database" and a molecular structure image. Below the banner is a navigation menu with buttons for "HOME", "SEARCH", "ANALYSIS", and "CONTACT". A search bar is present with a dropdown menu set to "Organism" and a "Sea" button. The main content area features a large image of a yellow and red bacterial structure. To the right of the image is a paragraph of text: "The EVirDB is a comprehensive user-friendly database that provides rapid access to virulence factors based on the gene ontology terms. This database can serve as a specialized repository to facilitate the researchers to quickly mine the virulence factors of six important human pathogens that belongs to Enterobacteriaceae viz., Escherchia spp., Enterobacter spp., Klebsiella spp., Salmonella spp., Proteus spp., and Shigella spp. The virulence factors like Capsule, Cellwall, Flagella, Pili and Toxins data from Enterobacteriaceae were pooled and annotated from different sources." Below the image and text is a search bar for Gene Ontology terms, with the text "4-hydroxy-tetrahydrodipicolinate reductase" entered and "Search" and "Reset" buttons.

EVirDB- Enterobacterial Virulence Factor Database



The screenshot shows the BCGDB website. At the top, there is a banner with the text "BCGDB Breast Cancer Gene Database" and a molecular structure image. Below the banner is a navigation menu with buttons for "Home", "Search", and "contact". A sidebar on the left contains a search bar and a "contact" button. The main content area features a large image of a pink ribbon with the text "EARLY DETECTION SAVES LIVES". To the right of the image is a paragraph of text: "The source of human genomic data has been growingly rapidly, a pursuit for the better understanding of the genes and their products are demanding. The development of specialized databases may ignite the researchers to focus on key genes and their products that govern the steadily increasing breast cancer. Thus the design and development of current Breast Cancer Gene Database (BCGDB) will serve as a noteworthy resource for the relevant information's on Breast cancer disease. The current version of BCGDB is encapsulated with the genes and their products related to breast cancer mined from various sources. This database is also committed to provide the most important functional and structural aspects of the breast cancer genes that play a role as a potent target of breast cancer. This database is an ecstasy to the breast cancer researchers to pursue their investigations for the development of novel therapeutics for the cure of breast cancer." At the bottom right, there is a footer with the text "All Rights Reserved".

BCGDB – Breast Cancer Gene Database