

BIOLOG MICROSTATION™

Make: BioTek Instruments, Inc.

Model: ELx808BLG

About instrument: The Biolog Microbial ID System is a versatile system, with the ability to identify and characterize a wide range of environmental and pathogenic organisms across diverse fields of microbiology. The Biolog Microbial ID System can rapidly identify over 2,500 species of aerobic and anaerobic bacteria, yeasts and fungi. Biolog has an extensive application for microbial community analysis in soil, water, biofilms and other environments.



Working principle: Microbial identification is based on the metabolic fingerprint principle. Biolog system is designed for microorganism identification based on species-specific metabolic fingerprints using the differential metabolism observed on the 96-well microplates with 94 different carbon sources and chemical sensitivity assays. Different microorganisms utilise different sets of carbon sources by producing a unique phenotypic fingerprint. Just prepare a cell suspension and inoculate the appropriate MicroPlate™. After inoculation and incubation, the MicroPlate™ is placed into the MicroStation™ Reader for analysis. The unique metabolic pattern generated by the organism is recorded and compared to hundreds of identification profiles in a corresponding Biolog Database. The versatile plate reader uses dual wavelength readings to quantify color reactions in the MicroPlate™ wells, adding consistency and accuracy when reading the reaction patterns. Biolog's patented redox chemistry makes use of different carbon compounds including sugars, carboxylic acids, amino acids and peptides to provide an unparalleled wealth of discriminating biochemical characterizations. There is increased respiration in the microplate wells, where cells can utilise a carbon source. Increased microbial respiration causes reduction of the tetrazolium redox dye, forming a purple colour of the microplate well. The final result is the combination of purple and colourless wells, which is characteristic to a specific microorganism. Then the combination is read with the microplate reading software and the microorganism is identified at a species level in a few seconds.

Detailed specifications:

GEN III Microplate



The Microbial Identification Test Panel (GEN III Microplate) uses 94 unique biochemical tests to profile and identify a broad range of gram-negative and gram-positive bacteria. The test panel provides a “Phenotypic Fingerprint” of the microorganism that is used to identify it at the species or strain level.

FF Microplate



The FF Microplate test panel provides a standardized micromethod using 95 biochemical tests to identify/ characterize a broad range of fungi including both filamentous and yeast forms. Biolog’s Microlog 3 software is used to identify the fungus from its metabolic pattern in the FF Microplate.

EcoPlate



The EcoPlate contains 31 carbon sources that are useful for community analysis. These 31 carbon sources are repeated 3 times to provide more data replicates. Communities of microorganisms will give a characteristic reaction pattern called a metabolic fingerprint. From a single EcoPlate, these fingerprint reaction patterns rapidly and easily characterize the community.

RetroSpect™ Software

RetroSpect™ 2.0 is a specialized software tool that supports data management and reporting and provides sophisticated trending and tracking of microbial data. Each Biolog MicroPlate provides an extensive dataset of strain specific test information from each isolate. The new RetroSpect Software utilizes these data elements in a powerful analysis package. Data Management filters enable users to define the content of the databases and generate highly customized and informative reports.

Applications: • Characterization and identification of microbial communities.

- Functional diversity of microorganisms.
- Community level physiological profiling.
- Microbial community substrate utilization profile.

Contact	Dr Madhu Choudhary
Designation	Senior Scientist (Agriculture Microbiology)
Phone Number	9991649072
Email	madhucssri@gmail.com , Madhu.choudhary@icar.gov.in