Diagnostic Microbiology Laboratory Monitoring of LARC

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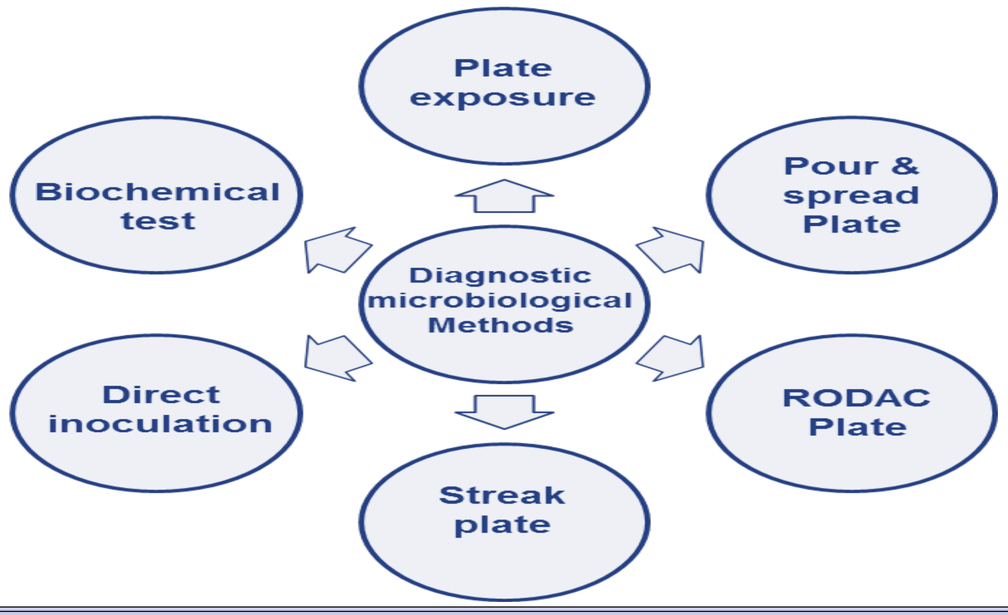
INTRODUCTION

- ✓ Microbial free environment of a research facility is critical to maintain animal health. Establishing Microbiological Monitoring Program is mandatory to assure the quality of the system.
- ✓ Microbiological monitoring involves a set of microbial testing methods to detect, isolate and eliminate the harmful microorganisms to provide Specific Pathogen Free (SPF) environment within the facility.
- ✓ Microbial diagnostic practices should continuously monitor all the potential transmission routes to improve the methods and limiting the bioburden of clean areas of vivarium.
- ✓ . Use of selective media and biochemical testing procedures can further identify the organisms to their genes & species level .



METHODS

Plate Exposure

Petri plates with appropriate growth medium are exposed for an hour to assess the microbiological load in the ambient air of animal holding rooms .

Streak Plate

A loopful of inoculum or swab from animal room surface is spread on the surface of specialized agar medium and streak for pure culture.

Pour Plate method

Water samples from different sources of vivarium are screened routinely for presence of coliforms. Sample is dispensed into petri plate & molten agar is poured to get the qualitative bacterial colonies

Biochemical analysis

A combination of different biochemical tests are used to perform and verify the microbe to species level to obtain pure culture.

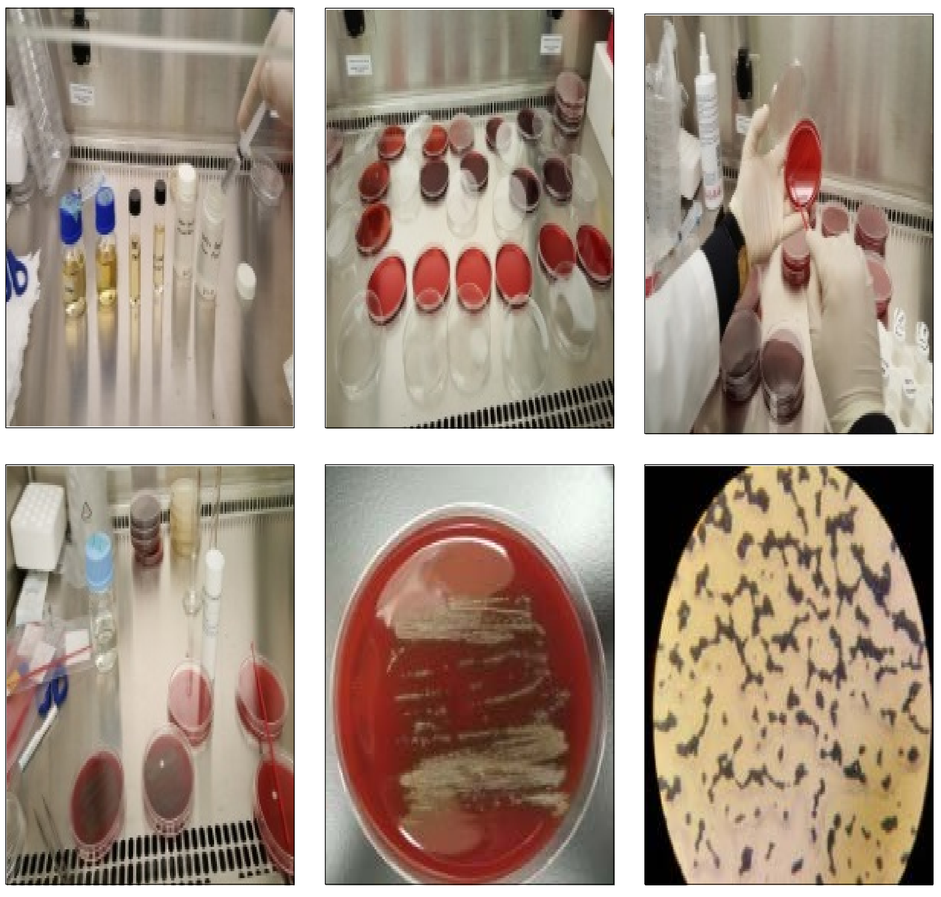
Contact plate and ATP detection in Animal room's surfaces and cages

Microbial bioburden of room surfaces, floor, walls and animal cages are monitored routinely by using RODAC contact plates with TSA growth medium and swabs to control the contamination level.

Expose the experimental sample to the luciferase containing swab & reinsert the swab in the swab tube. Measure the florescence efficacy in ATP illuminometer

MICROORGANISM TESTED

- ✓ ***Streptococcus pneumoniae & Beta hemolytic Bacteria.*** The pathogen colonies of the nasopharynx cause upper respiratory tract infection like pneumonia. Swab samples from the nasopharyngeal cavity of animals (rats and mice) are streaked on selective Strep agar medium.
- ✓ ***Pasteurella pneumotropica:*** Blood agar is the media used to identify the organism.
- ✓ ***Citrobacter Rodentium:*** Swab sample from the caecum is streaked onto MacConkey agar for the observation of lactose fermenting colonies.
- ✓ **Salmonella Spp:** Swab samples from caecum is kept in a transport medium and streaked on XLD.
- ✓ ***E.coli:*** To identify gastrointestinal infections, Animal drinking water is inoculated in EMB medium.
- ✓ ***Pseudomonas aeruginosa***: To identify *Pseudomonas*, water samples inoculated in Pseudomonas Cetrimide agar with special supplement.



Testing quality assured through standard operating procedure (SOPs) and validation of results from the international certified laboratories.