

MIC 102-P MICROBIAL GENETICS [P]

Practical Course Credit : 1

Contact Hours : 30

1. Isolation of plasmid DNA from bacterial cells by Alkaline Lysis method (Birnboim and Doly, 1979).
2. Isolation of plasmid DNA from recombinant *E. coli* cells by Boil prep method (Holmes and Quigley, 1981).
3. Agarose gel electrophoresis, visualization and documentation of plasmid and genomic DNA using Gel Doc system.
4. Spectrophotometric quantification and purity of bacterial plasmid DNA.
5. UV mutagenesis and screening of pigment deficient mutants of *Serratia marcescens*.

Reference Books (Composite list for theory and practicals):

1. Gardner, E. J., Simmons, M. J. and Snustad, D. P., Principles of Genetics, John Wiley & Sons.
2. Krebs J. E., Lewin B., Goldstein E. S. and Kilpatrick, S.T., LEWIS Genes XI, Jones and Bartlett Publishers.
3. Maloy, S. R., Cronan, J. E. and Freifelder, D., Microbial Genetics, Jones and Bartlett Publishers.
4. Streips, U. N. and Yasbin, R. E., Modern Microbial Genetics, John Wiley.
5. Synder, L., Peters, J. E., Henkin, T. M. and Champness, W., Molecular Genetics of Bacteria, ASM Press.
6. Dale, J. W. and Park, S. F., Molecular Genetics of Bacteria, John Wiley
7. Trun, N. and Trempey, J., Fundamental Bacterial Genetics, John Wiley & Sons.
8. Peter, J. R., *iGenetics: A Molecular Approach*, Pearson Education.
9. Birnboim, H. C. and Doly, J., (1979) A rapid alkaline extraction procedure for screening recombinant plasmid DNA. *Nucleic Acid Research*, 7: 1513-1523.
10. Holmes, D. S. and Quigley, M., (1981) A rapid boiling method for the preparation of bacterial plasmids. *Anal Biochem.*, 114(1): 193-197.
11. Sambrook, J., Fritsch, E. F. and Maniatis, T., *Molecular Cloning: A Laboratory Manual*, Cold Spring Harbor Laboratory, New York.
12. Green, M. R. and Sambrook, J., *Molecular Cloning: A laboratory manual*, Cold Spring Harbour Laboratory Press, New York.