MIO-103 P – GENETIC ENGINEERING [P]
Practical Course Credit : 1
Contact Hours : 30

1. Restriction mapping of bacterial plasmid and agarose gel analysis.
2. Preparation of competent cells and transformation of *E. coli* host with plasmid DNA using heat shock method and eporator; confirmation of positive transformants.
3. Demonstration of insertional inactivation of marker gene.
4. Assessment of DNA ligation activity of T4 DNA ligase.

References (Composite list for theory and practicals):

1. Old, R. W. and Primrose, S. B., Principles of Gene Manipulation: An Introduction to Genetic Engineering, University of California Press.
2. Glick, B. R., Pasternak, J. J. and Patten, C. L., Molecular Biotechnology: Principles and Applications of Recombinant DNA, ASM Press.
3. Williamson, R., Genetic Engineering, Volumes 4-7, Academic Press.
4. Glover, D. M., Gene Cloning: The Mechanics of DNA Manipulation, Springer-Science+Business Media, B. V.
5. Green, M. R. and Sambrook, J., Molecular Cloning: A Laboratory Manual, Cold Spring Harbor Laboratory, New York.
6. Davis, L. G., Dibner, M. D. and Battey, J. F., Basic Methods in Molecular Biology, Elsevier.
7. Gerhardt, P., Methods for General and Molecular Bacteriology, Elsevier.
8. Grinsted, J. and Bennett, P. M., Methods in Microbiology, Vol. 21, Plasmid Technology, Academic Press.