

CHAPTER 3

BIOCHEMISTRY

Doctoral Theses

032. AZEET NARAYAN
Elucidation of the Role of Mycobacterial Serine/Threonine Protein Kinases by Using Functional Genomics Approach.
Supervisors : Prof. Anil K. Tyagi & Dr. Yogendra Singh
Th 15723

Abstract

Studies the identification of members of the serine/threonine kinases and their probable role in genus Mycobacterium by using functional genomics approach.

Contents

1. Introduction. 2. Review of Literature. 3. Aims and Objectives. 4. Materials and Methods. 5. Serine/threonine protein kinases of mycobacterial genus : Phylogeny to function. 6. PknF negatively regulates the activity of ABC Transporter (Rv1747). 7. Summary and Conclusion. 8. Bibliography. 9. Appendices.

033. VERMA (Nitin Kumar)
Development of Phage Display System for Fragmented Genome Libraries for the Diagnosis of Sars-CoV Infection.
Supervisor : Prof. Vijay K. Chaudhary
Th 15725

Abstract

Describe Cloning and expression of SARS-CoV Nucleocapsid protein (N) and SARS-CoV Spike protein (S) and their derivatives in E.coli and purification using chromatography techniques, production and characterization of n-specific monoclonal and polyclonal antibodies and phage display-based epitope mapping using gene-fragment libraries, SPR-based characterization of anti-N monoclonal antibodies and development of antigen detection assay.

Contents

1. Introduction and review of literature. 2. Objective & Scope. 3. Cloning, expression and purification of SARS-CoV Nucleocapsid protein (N) and its derivatives in E.Coli. 3. Production and characterization of N-specific Monoclonal and Polyclonal antibodies. 4. SPR-based characterization of anti-N Monoclonal antibodies and development of antigen detection assay. 5. Cloning, Expression and purification of spike (S) protein and its deletion derivatives. 6. Summary and Conclusions. 8. Bibliography. 9. Appendices.
034. VERMA (Santosh Kumar)
Role of Histidine Residue on Fusion of Reconstituted Sendai Viral Envelope with Host Cells.
Supervisor : Dr. Debi P. Sarkar
Th 15724

Abstract

Designs chimeric vehicle in which the properties of two delivery systems (i.e. F-virosomes and histidine tagged cationic lipids (Lh)) have been combined to study fusion process and transfection efficiency both in vitro and in vivo keeping in mind histidine residue cross talk in L_H-F virosome, analogues to HN-F interaction for increased membrane fusion activity, additional elaborate functional study were carried out to explore the possible role of histidine residue in paramyxovirus HN protein trigger mechanism.

Contents

1. Introduction and review of literature. 2. Objectives and scope. 3. Enhanced membrane fusion activity of histidylated lipidmodified F-virosome potentiates targated gene delivery. 4. Histidine residue mediated fusion promotion activity of paramyxovirus hemagglutinin-neuraminidase protein. 5. Summary and Conclusion. 6. Bibliography.