CHAPTER 33

MEDICAL SCIENCES
BIOCHEMISTRY

Doctoral Theses

418. AB RASHID MIR

Molecular Characterization and Prognostic Significance of Genes Involved in Imatinib Mesylate Resistance in Chronic Myeloid Leukemia Patients.

Supervisors : Dr. Alpana Saxena, Dr. Renu Saxena and Dr. V P Choudhary

Th 18096

Abstract

Aside from bone marrow transplantation, a definitive cure for Philadelphia (Ph) chromosome-ositive chronic myeloid leukemia (CML) has yet to be developed. Although Imatinib, the first molecularly targeted drug developed for CML has achieved a remarkable success, the emergence of resistance to this agent mitigates the prospect of a cure for this leukimia. Though a variety of resistance mechanisms can arise, in the majority of patients resistance coincides with reactivation of the tyrosine kinase activity of the BCR-ABL fusion oncoprotein. This can result from gene amplification and, more importantly, point mutations that disrupt the bind of imatinib to BCR-ABL inself. This study, is to define and illuminate mechanisms of resistance and describe how drug resistance is shedding new light on kinase domain regulation chronic myeloid leukemia patients.

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419. BAGHEL (Anil Singh)

Studies on Molecular Cloning and Expression of Acetoxy Drug: Protein Transacetylase of M. Tuberculosis with Special Reference to the Role of Polyphenolic Acetates as Anti Tuberculosis Drugs.

Supervisors : Prof. H G Raj and Prof. Mridula Bose
Th 18081

Abstract

The results presented in this present work have convincingly proved the Protein acetyl transacetylase function of GinA1 which is termed as MT-TAase (Mycobacterium tuberculosis Transacetylase). MT-TAase utilized acetoxy coumarins as well as acetyl CoA as the acetyl group donating substrates for catalyzing the acetylation of receptor protein such as rGST as substantiated by MALDI-TOF MS analysis. The acetoxy coumarins that are found to be better substrates for MT-TAase are also found to be endowed with the ability to inhibit the growth of MTB very effectively as revealed by electron microscopic pictures of indented cells and cleavage of cell wall of tubercle bacilli. Further, the role of MT-TAase catalyzed acetylation of functional proteins of tubercle bacilli by acetoxy coumarins play a crucial role in developing these compounds as potential anti-Tb drug.

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420. REENU

Effect of Antidiabetic Compound Isolated from Eugenia Jambolana (Fruit Pulp) on Various Diabetic Complications in Experimental Animals.

Supervisors : Dr. S B Sharma, Dr. V P Gupta and Dr. U R Singh
Th 18082

Abstract

E. jambolana is large tree found in all forests over the greather part of India from the Sub-Himalayan tract to extreme south. It belongs to family myrtaceae. Anti hyperglycemic activity of different parts of E. jambolana is well documented. Aqueous and ethanoic extract of seeds administered orally to experimental

animals and to human adults at various dose levels are found to be active. The present study is being undertaken to isolate the active compound (FIIc) from fruit-pulp of E. jambolana by already standardized techniques (patent granted) and study its therapeutic potential in various diabetic complications. To know its mechanism of action, biochemical and histomorphological studies is done. The isolation of antidiabetic active principles (FIIc) from fruit-pulp of E. jambolana and studies its possible effect on prevention of diabetic complications in various experimental models.

Contents

1(a). Preliminary studies with aqueous fruit-pulp of E. jambolana in streptozotocin induced diabetic rats. 1(b). Isolation and purification of antihyperglycemic compound from fruit-pulp of E.jambolana. 2. Macrovascular complications. 3. Effect of active compound on diabetic nephropathy. 4. Effect of active compound on galactose induced catarectogenesis. 5. Effect of active compound of fructose induced insulin resistance. 6. Effect of active compound on signaling pathways. 7. Safety profile of file. Summary and conclusions.

421. TANZEEL AHMED

Study on Pesticide-Mediated Cytotoxicity, Apoptosis and DNA Damage in Human Peripheral Blood Mononuclear Cells, Protective Effect of Heat Shock Proteins, Their Inducer and Antioxidants.

Supervisors : Prof. B D Banerjee and Prof. A K Tripathi
Th 18095

Abstract

This study has find out the ability of selected pesticides (Endosulfan, malathion or phosphamidon) to induce cytotoxicity (Apoptosis/Necrosis) in vitro in human peripheral blood mononuclear cells (PBMC). It has measured the dose dependent cytotoxicity of PBMC by different pesticides in vitro and to assess the stress response by measuring HSP27 and HSP70 in cultured medium and determined pesticide-induced apoptosis of PBMC in vitro and to evaluate the associated mechanism.

Contents

1. Introducton. 2. Aims and objectives. 3. Review of literature. 4. Materials and methods. 5. Results. 6. Discussion. 7. Conclusion. 8. Summary and bibliography.

422. VIVEK KUMAR

Toxicogenomic Approach to Assess Risk Factors Involved in Prostate Cancer and Benign Prostate Hyperplasia.

Supervisors : Prof. B D Banerjee, Dr. Rafat S Ahmad and Prof. Sanjay Gupta

Th 18078

Abstract

This thesis is to study the toxicogenomics aspects of prostate cancer and BPH. Which included the analysis levels of xenoestrogenic OCPs and the polymorphism of the genes associated with the metabolism of estradiol with susceptibility to the risk of prostate cancer and BPH and to analyze the pattern of important steroidal hormones and growth factor including total-testosterone, total estradiol and IL-6 in North Indian population.

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