CHAPTER 36

MEDICAL SCIENCES
BIOCHEMISTRY

Doctoral Theses

306. CHAUHAN (Ranjit)
Hepatitis B Virus Genotypes and Core Mutants in India : Molecular Analysis and Relevance.
Supervisors : Dr. Jayashree Bhatacharjee and Dr. Shiv K. Sarin
Th 16405

Abstract

Deals with evaluation of patients using clinical and biochemical parameters for evidence of liver disease by HBV, Genotyping of Hepatitis B Virus in patients with HBeAg negative chronic Hepatitis B virus infection; Molecular analysis of Core gene mutations in patients with HBeAg negative chronic Hepatitis B virus infection and studies the inter-relationship of HBV Genotypes and core gene mutations and their relevance.

Contents

307. MOHD. ADNAN KAUSAR
Biochemical and Clinico-Immunologic Characterization of Mosquito (Culex Quinquefasciatus) Allergens.
Supervisors : Prof. S. K. Bansal, Prof. M. K. Agarwal and Dr. V. K. Vijayan
Th 16404

Abstract

Reveales that Cq derived allergens are present in air of Delhi metropolitan area, India and serve as important inhalant allergens in IgE mediated allergic respiratory disorders. Cq

extract is a complex mixture of multiple allergenic proteins of diverse molecular weights. Some of these allergens are cross-reacting with two other mosquito species. Cq allergic patients show heterogeneity of IgE response to it allergenic proteins. Of the three major allergens of Cq extract, the purified 24 kd species specific major allergen has been purified to homogeneity. It is recommened that this protein may be used as a reference reagent for quality control of commercially available crude (Cq) mosquito allergen extracts.

Contents

308. NEERAJ KUMAR

Molecular and Biochemical Basis of Variation in Clinical Phenotypes of Adrenoleukodystrophy.

Supervisors : Prof. S. K. Bansal, Dr. K. K. Taneja, Prof. Veena Kalra, Prof. Madhuri Behari and Prof. S. Aneja

Th 16495

Abstract

Concludes that only one mutation is present in ABCD1 gene in each of the 20 patients, whcih were categorized in fifteen different types. Out of these fifteen mutations in ABCD1 gene, seven were novel. 796G>A (Gly226Arg) mutation in exon one seems to be a possible hot spot present in three patients of different phenotypes in Indian population. A novel missense mutation 2201C>T (Pro734Leu) at position 734 was identified by us while no mutation downstream of amino acid 693 has been reported in ABCD1 gene anywhere else so far. A genotype-phenotype correlation could not be established. The possibility of ABCD2 gene as a genetic modifier for X-ALD was ruled out as no mutation was observed in this gene. However, two novel SNPs are observed in this gene. A total of 6 SNPs including 3 novel are observed in ABCD1 gene in our population but no significant association between these SNPs and case-controls are observed, which excludes them as markers for predisposition of the disease. The VLCFA levels are found to be increased more in cerebral or more servere phenotypes than non-cerebral or less servere phenotypes like AMN.

Contents

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

309. SHVETAMBRI
Studies on the Role of Acetoxy Drug : Protein Transacetylase in Hypoxia Induced Pulmonary Hypertension.
Supervisors : Prof. H. G. Raj and Prof. Daman Saluja
Th 16406

Abstract

Focuses on the role of Acetoxy drug : protein Transacetlase, now identified a Calreticulin transacetylase (CRT Aase) as a potential key regulatory protein for modulation of No levels and related effects. No is useful in the management of Hypoxia induced lung conditions through activation of components of Nitric Oxide cycle : NOS and NR by PA. The lung CRTAase is found to activate platelet NOS ex vivo. PA is found to induce the formation of iNOS in cells such as platelets, TSMC and PBMC, Endothelium dirived NO is a mediator of angiogenesis. PA are found to enhance angiogenesis in Chick embryo confirming that NO formed by PA is capable of enhancing vascularization. The study demonstrated for the first time the activation of NR by PA. CRTase is found to be over expressed in hypoxia. PA in hypoxia markedly activated nitrite reductase activity where the NOS status is compromised. Relaxation of de-endothelialized rings is caused by PA, possibly due to the involvement of NR, short term administration of NO as inhaled gas alleviates pulmonary hypertension hence activation of NR by PA hypoxia mediated by CRTase may find useful application in alleviation of Lung conditions such as pulmonary hypertension.

Contents

1. Introduction. 2. Objectives. 3. Review of literature. 4. Results.

310. SUKE (Sanvidhan)
Studies on Pestcide - Induced Oxidative Stress and Immunotoxicity : Mode of Attenuation by Certain Drugs.
Supervisors : Prof. B. D. Banerjee, Prof. K. M. Prabhu and Dr. A. K. Tripathi
Th 16494

Abstract

Investigates lipid periodication (MDA); free radicals scavengers enzymes (SOD and CAT); gluathione redox system (GHS content, GR, GPx and GST); T-SH group and total antioxidant status FRAP in blood of experimental animals exposed to these pesticides; drugs and plant products; Apoptosis by DNA ladder assay and oxidative DNA damage (8-Oxo-dGua) by HPLC ; and Immunological parameters immunoglobulin (IgM, IgG, IgA and IgE) by RID and cytokines (IL-2, IL-4, TNF-α and IFN-γ) levels in serum by ELISA are assayed; complement abnormalities to be assayed for CH50 and AH50 hemolytic assay and estimate the respiratroy brust, superoxide (O_2^-) anion and RNI in macrophages of pesticides exposure animals.

Contents