

CHAPTER 34

MEDICAL SCIENCES BIOCHEMISTRY

Doctoral Theses

443. GUPTA (Shipra)
Studies on Isolation and Mechanism of Action of the Antihyperglycemic and Hypolipidemic Compound (s) from the Leaf Extract of Cassia Auriculata in Experimentally Induced Diabetic Animals.
Supervisors : Dr. Suman Bala Sharma and Dr. Surendra Kumar Bansal
Th 16740

Abstract

Determines antihyperglycemic and hypolipidemic activity of leaf extract of Cassia auriculata in streptozotocin-induced diabetic rats. Isolates and purify the active antihyperglycemic and hypolipidemic compound(s) from the leaf extract of C. auriculata. Also determines antioxidant and antiatherosclerotic activity of the purified active compound. Determines the mechanism of action of the active compound, its effect is seen on the following parameters-the release of insulin and C-peptide. The activity of signal transduction enzyme protein kinase Ca9PKC). The expression of glucose transporter isoform 4 (GLUT4) at mRNA and protein level. Key enzymes of glycolysis and gluconeogenesis. Liver and muscle glycogen. key regulatory enzyme of cholesterol biosynthesis (HMG-CoA reductase). Assesses the safety profile of the active compound, its effect is seen on liver and kidney.

Contents

1. Introduction. 2. Review of literature. 3. Aims and objectives. 4. Preliminary studies with crude leaf extract of cassia auriculata. 5. Isolation and characterization of antihyperglycemic and hypolipidemic compound. 6. Antioxidant and antiatherosclerotic activity of purified active compound, CA₁₀₀. 7. Mechanism of action of CA₁₀₀. 8. Toxicity assessment/Safety profile of CA₁₀₀. 9. Summary and conclusions. Bibliography and publications.

444. MISHRA (Rakesh Kumar)
Experimental Asthma : A Study on Transmembrane Signalling in Peripheral Blood Lymphocytes and Airway Smooth Muscles During the Development of Airway Hypersensitivity in Guinea Pig Model of Asthma.
 Supervisors : Prof. S. K. Bansal and Prof. S. K. Chhabra
Th 16741

Abstract

Isolates, identifies and quantifies the phosphoinositides; Setermines the total activity of PKC. Identifies PKC isoenzymes by Western blot and the target proteins of PKC by protein phosphorylation. Suggests that PKC signal transduction pathway participates in the regulation of the activation of lymphocytes and ASM and its activation leads to the onset, development and perpetuation of the airway hypersensitivity and inflammation in animal model, which are the characterstic features of asthma.

Contents

1. Introduction. 2. Review of literature. 3. Aims and objectives. 4. Experimental design. 5. Materials and methods. 6. results and observations. 7. Discussion. 8. Summary. 9. Conclusions. 10. Future perspectives. Refernces and appendix.

445. VERMA (Priyanka)
Role of Oxidative Stress and Cellular Transcription Factor AP-1 in Pre and Post Operative Cases of Breast Carcinoma.
 Supervisors : Dr. Jayashree Bhattacharjee, Prof. B. C. Das,
 Dr. Bina Ravi and Dr. Manjula Jain
Th 16818

Abstract

It examines the role of oxidative stress in breast cancer patient (in pre and post operative breast cancer patients) by determination of malondialdehyde (MDA), Glutathione, Superoxide dismutase (SOD), Glutathione peroxidase (GPx). To study interrelation between Nitric Oxide and Superoxide dismutase as they work in cordination with each. (SOD helps in localization of NO). It also studied the nitric oxide and nitric oxide synthase level in breast cancer patients, the expression of genes (c-Fos, c-Jun) the product of which form AP-1 Transcription factor, the correlation between c-Fos, c-Jun expression and oxidative stress in breast

cancer and the correlateion between c-Fos, c-Jun expression with nitric oxide, nitric oxide synthase and super oxide dismutase.

Contents

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