CONTENTS

Page no

Acknowledgement  i
Abstract iii
List of Publications vii
Contents x

CHAPTER – 1
GENERAL INTRODUCTION

Cancer 01
Most common type of cancers 02
Hepatocellular Carcinoma 03
  • Epidemiology 03
  • Diagnosis 04
  • Treatment 04
Role of Pro-inflammatory Transcription Factors in cancer 06
Signal transducer and activator of transcription 3 06
  • Synthetic compound inhibitors of STAT3 signaling pathway 12
  • Natural compound inhibitors of STAT3 signaling pathway 13
  • Selective small molecule inhibitors of STAT3 signaling pathway 14
Nuclear factor kappa-light-chain-enhancer of activated B cells 19
  • Canonical and Noncanonical NF-κB signaling pathways 21
  • Synthetic compound inhibitors of NF-κB signaling pathway 24
  • Natural compound inhibitors of NF-κB signaling pathway 25
  • Selective small molecule inhibitors of NF-κB signaling pathway 26
References 29

AIM AND SCOPE OF THE INVESTIGATION 51

CHAPTER – 2
DEVELOPMENT OF A NOVEL AZASPIRANE THAT TARGETS THE JAK-STAT PATHWAY IN HEPATOCELLULAR CARCINOMA IN VITRO AND IN VIVO
CHAPTER 3

NOVEL SYNTHETIC BISCOUMARINS TARGET TUMOR NECROSIS FACTOR-α IN HEPATOCELLULAR CARCINOMA IN VITRO AND IN VIVO

Introduction 93
Materials and Methods 95
  • Reagents 95
  • Cell lines 97
  • MTT assay 97
  • Surface plasmon resonance (SPR) analysis 97
  • Western blotting 98
  • Invasion assay 98
  • In vivo anti-inflammatory studies 99
  • Inflammatory Bowel Disease model 99

Results 63
Discussion 82
References 84
- Determination of disease activity index (DAI) 100
- Myeloperoxidase (MPO) activity 100
- Estimation of serum cytokine levels 101
- Histological evaluation 101
- Statistical Analysis 101

Results  
Discussion 114
References 116

SUMMARY AND CONCLUSIONS 125
LIST OF ABBREVIATIONS 127
PUBLICATIONS 132