

Design, Synthesis and Molecular Modeling Studies of Some Novel Trisubstituted Pyrazole Derivatives as Anticancer Agents

Thesis

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“Whoever follows a Path in the pursuit of knowledge Allah will make a path to Jannah easy for him.”

Prophet Muhammad (SAWS)

To my parents.....

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List of abbreviations:

2D: Two Dimension

3D: Three Dimension

Å: Angstrom

A375P: Human Melanoma Cell Line

A549: Human Alveola Type II Epithelia – Lung Carcinoma

Abl: Abelson Tyrosine Kinase

AKT: Protein Kinase B

ATP: Adenosine Tri-Phosphate

BCl-2: B Cell Lymphoma Protein 2

BCL-XL: B Cell Lymphoma Protein XL

B-Raf^{V600E}: B-Raf Which Involves Substitution of Valine With Glutamic Acid At Codon 600

DFG: Aspartate- Phenylalanine-Glycine

DFT: Density functional theory

DMEM: Dulbecco's Modified Eagle's Medium

DMF: Dimethyl Formamide

DMSO: Dimethyl Sulfoxide

DNA: Deoxyribonucleic Acid

EGFR: Epidermal Growth Factor Receptor

EI-MS: Electron Impact Mass Spectrometry

EMA: European Medicine Agency

EMT: Epithelial-To-Mesenchymal Transition

ERK: Extracellular Signal-Regulated Kinase

Fas: Apoptosis Antigen 1

FDA: Food and Drug Administration

FT-IR: Fourier Transform-Infrared

GEFs: Guanine Nucleotide Exchange Factors

GTP: Guanosine Triphosphate

h.: Hours

HCC: Hepatocellular Carcinoma

HCT116: Human Colorectal Carcinoma Cell Line

HepG2: Human Hepatocellular Carcinoma Cell Line

Her 3: Human Epidermal Growth Factor Receptor 3