

*Antitumorigenic Effect in DLA Tumor Induced Mice and Antimicrobial
Potential of Ficus racemosa and its Characterization by
Spectral and in silico Studies*

By

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Certificate

This is to certify that the thesis entitled “**Antitumorigenic Effect in DLA Tumor Induced Mice and Antimicrobial Potential of *Ficus racemosa* and its Characterization by Spectral and *in silico* Studies**” submitted to Avinashilingam University for Women, Coimbatore, for the award of the degree of **Doctor of Philosophy in Biochemistry** is a record of original research work done by **A. Poongothai**, during the period of her study in the Department of Biochemistry, Biotechnology and Bioinformatics, Avinashilingam University for Women, Coimbatore, under my supervision and guidance and the thesis has not formed the basis for the award for any Degree / Diploma / Associateship / Fellowship or similar title to any candidate of any other University or Institute.


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Declaration

I hereby declare that the matter embodied in the thesis entitled **“Antitumorigenic Effect in DLA Tumor Induced Mice and Antimicrobial Potential of *Ficus racemosa* and its Characterization by Spectral and *in silico* Studies”** is the result of investigations carried out by me in the Department of Biochemistry, Biotechnology and Bioinformatics, Avinashilingam University for Women, Coimbatore, under the supervision and guidance of **Dr. (Tmt.) S. Annapoorani**, Professor, Department of Biochemistry, Biotechnology and Bioinformatics, Avinashilingam University for Women, Coimbatore and it has not been submitted for the award of any Degree/ Diploma / Associateship / Fellowship of any other University or Institute.


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List of Abbreviations

µg	-	Microgram
µl	-	Microlitre
•OH	-	Hydroxyl radical
1SQ5	-	Pantothenate kinase
1T69	-	Histone deacetylase
1W2N	-	Deacetoxy C Synthase
1Z2B	-	Tubulin
ABTS	-	2,2'-azino-bis(3-ethylbenzothiazoline-6-sulphonic acid
ADME	-	Absorption Distribution Metabolism and Excretion
ALP	-	Alkaline phosphatase
ALT	-	Alanine transaminase
ANOVA	-	Analysis of variance
ANSA	-	1, 2, 4 - ANSA (1-amino-2-naphthol-6-sulphonic acid)
AST	-	Aspartate transaminase
ATP	-	Adenosine triphosphate
CADD	-	Computer Aided Drug Design
CAT	-	Catalase
CCl ₄	-	Carbon tetrachloride
cm ⁻¹	-	Wave number
CoA	-	Coenzyme A
DAC	-	Deacetylcephalosporin C
DAOCS	-	Deacetoxycephalosporin C synthase
DLA	-	Dalton's Lymphoma Asite
DMSO	-	Dimethyl sulphoxide
DNA	-	Deoxyribonucleic acid
DNPH	-	4 -dinitrophenyl hydrazine
DPPH	-	1, 1-Diphenyl-2-Picrylhydrazyl

DTNB	-	5, 5'- dithio-2-nitro benzoic acid
EAC	-	Ehrlich Ascite Carcinoma
ED ₅₀	-	Fifty percent Effective Dose
EDTA	-	Ethylene diamine tetra acetic acid
ELA	-	Ehrlich Lymphoma Ascite
FeCl ₃	-	Ferric chloride
FT-IR	-	Fourier Transform Infrared Spectroscopy
GC- MS	-	Gas Chromatography-Mass Spectrometry
GLIDE	-	Grid based Ligand Docking with Energetics
GPx	-	Glutathione peroxidase
GR	-	Glutathione reductase
GSH	-	Reduced glutathione
GSSG	-	Oxidized glutathione
GST	-	Glutathione S -transferase
H ₂ O ₂	-	Hydrogen peroxide
H ₂ SO ₄	-	Sulphric Acid
HCl	-	Hydrochloric acid
HDAC	-	Histone deacetylase
HDACIs	-	Histone deacetylase inhibitors
HOCl	-	Hypochlorous acid
HPTLC	-	High Performance Thin Layer Chromatography
ICU	-	Intensive Care Unit
ILS	-	Increase in Life Span
IF	-	Induced Fit
IR	-	Infra Red
KCl	-	Potassium chloride
KH ₂ PO ₄	-	Potassium dihydrogen orthophosphate
LPO	-	Lipid peroxidation
M	-	Molar

MDA	-	Malondialdehyde
MEFrB	-	Methanolic extract of <i>Ficus racemosa</i> Bark
MEFrF	-	Methanolic extract of <i>Ficus racemosa</i> Fruit
MEFrL	-	Methanolic extract of <i>Ficus racemosa</i> Leaves
Mg	-	Milligram
mM	-	Millimolar
MT	-	Microtubule
MTT	-	3-(4,5-Dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide
NaCl	-	Sodium chloride
NADPH	-	Nicotinamide Adenine Dinucleotide Phosphate
NaOCl	-	Sodium hypo chlorite
NBT	-	Nitro Blue Tetrazolium
NCCLS	-	National Council of Clinical Laboratory Services
NIST	-	National Institute of Standards and Technology
nM	-	Nanomoles
NMR	-	Nuclear Magnetic Resonance
NO	-	Nitric oxide
NO ₂	-	Nitrogen dioxide
NO ₃	-	Nitrate
O ₂ ^{•-}	-	Superoxide
O ₃	-	Ozone
OD	-	Optical density
ONOO [•]	-	Peroxynitrite
OOH [•]	-	Hydroperoxyl
PAU	-	Pantothenoic acid
PBS	-	Phosphate Buffered Saline
PDB	-	Protein Data Bank
PN1	-	(2s,6r)-6-(((2r)-2-amino-2-phenylethanoyl)amino)-3,3-dimethyl-7-oxo-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxylicacid

POD	-	Peroxidase
PUFA	-	Poly Unsaturated Fatty Acid
QSAR	-	Quantitative Structure Activity Relationship
RBC	-	Red Blood Cells
RNO	-	N, N-dimethyl-4-nitrosoaniline
RNS	-	Reactive Nitrogen species
RO·	-	Alkoxy
ROO·	-	Peroxy
ROS	-	Reactive Oxygen Species
RSS	-	Reactive Sulphur species
SD	-	Standard Deviation
SGOT	-	Serum Glutamic Oxaloacetic Transaminase
SGPT	-	Serum Glutamic Pyruvic Transaminase
SHH	-	Octanedioic acid hydroxyamide phenylamide
SOD	-	Superoxide dismutase
SP	-	Standard Precision
STD	-	Standard
TBA	-	Thio Barbituric Acid
TBARs	-	Thio Barbituric Acid Reactive Substances
TCA	-	Trichloro acetic acid
TLC	-	Thin Layer Chromatography
U/L	-	Unit per Litre
UV	-	Ultra Violet
VLB	-	2alpha, 2'beta, 3beta, 4alpha, 5beta - vincalkebostine
WHO	-	World Health Organization
XP	-	Extra Precision

PUBLICATIONS

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