In silico studies to screen ovicidal and repellent activity of selected plant extracts against the filarial vector, *Culex quinquefasciatus* (Diptera : Culicidae)

By

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CERTIFICATE

This is to certify that the thesis **entitled "*In silico* studies to screen ovicidal and repellent activity of selected plant extracts against the filarial vector, *Culex quinquefasciatus* (Diptera: Culicidae)"** submitted to Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore for the award of degree of **Doctor of Philosophy in Zoology** is a record of original research work done by **Dhivya, R.** during the period of her study in the Department of Zoology, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore under my supervision and guidance and the thesis has not formed the basis for the award of any Degree/ Diploma/ Associateship/ Fellowship or similar title to any candidate of any University or Institute.

Signature of the Head of the Department — 10/1/14

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Signature of the Dean — 10/1/14

DECLARATION

I hereby declare that the matter embodied in this thesis entitled "***In silico* studies to screen ovicidal and repellent activity of selected plant extracts against the filarial vector, *Culex quinquefasciatus* (Diptera: Culicidae)"** is the result of investigation carried out by me in the Department of Zoology, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore under the supervision and guidance of **Dr. K. Manimegalai**, Associate Professor, Department of Zoology, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore and it has not been submitted for the award of any Degree/ Diploma/ Associateship/ Fellowship etc., of any other University or Institute.

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Signature of the Candidate

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ABBREVIATIONS

WHO	-	World Health Organization
NICD	-	National Institute of Communicable Diseases
OBPs	-	Odorant Binding Proteins
ODE	-	Odorant Degrading Enzymes
ORs	-	Olfactory Receptors
NIH	-	National Institute of Health
GC-FID	-	Gas Chromatography equipped with Flame Ionisation Detector
TLC	-	Thin Layer Chromatography
PDB	-	Protein Data Bank
RMSD	-	Root Mean Square Deviation
SCPIs	-	Sterol Carrier Proteins Inhibitors
GSTs	-	Glutathione S-Transferases
PfEMP1	-	*Plasmodium falciparum* Erythrocyte Membrane Protein 1
***Ag*OBP1**	-	*Anopheles gambiae* Odorant Binding Protein 1
CRD	-	Completely Randomized Design
ANOVA	-	Analysis of Variance
PASS	-	Prediction of Activity Spectra for Substances
USSR	-	Union of Soviet Socialist Republics
SCOP	-	Structural Classification of Proteins
CATH	-	Class, Architecture, Topology and Homology
GO	-	Gene Ontology
GUI	-	Graphical User Interface
OPLS-AA	-	Optimized Potentials for Liquid Simulations (All Atoms)
SP	-	Standard Precision
MD	-	Molecular Dynamics
MCSD	-	Monte Carlo/Stochastic Dynamics
JBW	-	Jumping Between Wells
LC	-	Lethal Concentration

ABBREVIATIONS

SDF	**-**	Spatial Data Format
CSV	**-**	Comma Separated Values
SD	**-**	Structure Data
MOL	**-**	Molfiles
TXT	**-**	Text files
SASA	**-**	Surface Accessible Solvent Area
LOO	**-**	Leave One Out
RRT	**-**	Relative Retention Time
ORN	**-**	Olfactory Receptor Neurons