

CERTIFICATE

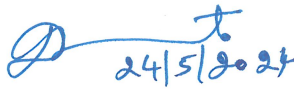
This is to certify that the thesis entitled “**Epidemiological profiling of population-specific risk factors and validation of novel genetic variants and deep learning-driven mitosis detection in breast cancer patients**” submitted to the Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore, for the award of the degree of **Doctor of Philosophy in Biotechnology**, is a record of original work done by **K.Suganya**, during the period of her study in the Department of Biochemistry, Biotechnology and Bioinformatics, 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.



Signature of the Head of the Department



Signature of the Supervisor



Signature of the Dean

DECLARATION

I hereby declare that the matter embodied in this thesis entitled “**Epidemiological profiling of population-specific risk factors and validation of novel genetic variants and deep learning-driven mitosis detection in breast cancer patients**” is the result of investigations carried out by me in the Department of Biochemistry, Biotechnology and Bioinformatics, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore, in partial fulfilment of the requirements for the award of the degree of **Doctor of Philosophy in Biotechnology**, is a record of original research work done by me under the supervision and guidance of **Dr.S.Sumathi**, Associate Professor, Department of Biochemistry, Biotechnology and Bioinformatics, 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 of any other University or Institute.

Suganya
24.5.24

Signature of the Research Scholar

Dr. S. Sumathi
24/5/2024

Signature of the Supervisor

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LIST OF ABBREVIATIONS

BC	Breast Cancer
ER	Estrogen Receptor
PR	Progesterone Receptor
HER2	Human Epidermal Growth Factor Receptor 2
DCIS	Ductal Carcinoma <i>in situ</i>
CI	Confidence Interval
SD	Standard Deviation
NGS	Next Generation Sequencing
WES	Whole Exome Sequencing
QC	Quality Control
SNV	Single Nucleotide Variant
ADR	Adverse Drug Reaction
PCR	Polymerase Chain Reaction
AI	Artificial Intelligence
CNN	Convolutional Neural Network
NCBI	National Center for Biotechnology Information
UCSC	University of California, Santa Cruz
ENA	European Nucleotide Archive