

DECLARATION

I, **Ms. Anuradha Subhashchandra Jadhav** D/o **Mr. Subhashchandra Muralidhar Jadhav** resident of At Post Belhe, Tal. Junnar, Dist.-Pune - 412411, Maharashtra, hereby declare that the research work incorporated in the present thesis entitled “**DEVELOPMENT AND EVALUATION OF ORAL POLYHERBAL FORMULATION FOR LITHOLYTIC ACTIVITY IN ETHYLENE GLYCOL INDUCED UROLITHIASIS IN WISTAR RATS**” is our original work. This work (in part or in full) has not been submitted to any University for the award or a Degree or a Diploma. I have properly acknowledged the material collected from secondary sources wherever required. I solely own the responsibility for the originality of the entire content.

Date: / /2024

(**Anuradha Subhashchandra Jadhav**)

Signature of the Candidate

CERTIFICATE

It gives me immense pleasure in certifying that the thesis entitled **“DEVELOPMENT AND EVALUATION OF ORAL POLYHERBAL FORMULATION FOR LITHOLYTIC ACTIVITY IN ETHYLENE GLYCOL INDUCED UROLITHIASIS IN WISTAR RATS”** and submitted by **Ms. Anuradha Subhashchandra Jadhav** is based on the work research carried out under my guidance. She has completed the following requirements as per Ph.D. regulations of the University;

- i. Course work as per University rules.
- ii. Residential requirements of the University.
- iii. Regularly presented Half Yearly Progress Report as prescribed by the University.
- iv. Published/ accepted minimum of two research paper in a refereed research journal.

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Date: / /2024

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CERTIFICATE

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Anuradha Subhashchandra Jadhav

Place: Pune

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Anuradha Subhashchandra Jadhav

PREFACE

This research was undertaken to prove effectiveness of Traditional Herbal medicines available as Indigenous medicine or folk medicine for Kidney stone.

Recurrence of kidney stone after Lithotripsy or Percutaneous Nephrolithotomy is the major problem observed in Diabetic patients. Also Thyroid hormone interferes with formation of kidney stone is the important aspect of research. Amongst various numerous folk medicines herbs were selected on the basis of primary in-vitro analysis.

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Selected herbal Plants were authenticated from Agharkar Institute Pune. While performing Analytical studies D.Y. Patil Institute, Pimpri, Pune has given their best support and facilities to undertake HPTLC Analysis and Method Development of selected herbal medicines.

It is hoped that the research will be received favorably as an effective remedy for those who are suffering from pain and recurrence of kidney stone.

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LIST OF ABBREVIATIONS

CSIR	: Council Of Scientific And Industrial Research
CT	: Computerized Tomography
ESWL	: Extracorporeal Shock Wave Lithotripsy
URS	: Ureteroscopy
PCNL	: Percutaneous Pithotripsy
TCM	: Traditional Chinese Medicine
ESCOP	: European Scientific Cooperative On Phytotherapy
GAG	: Glycosaminoglycans
UTIs	: Urinary Tract Infections
CaOx	: Calcium Oxalate
RTA	: Renal Tubular Acidosis
APRT	: Adenine Phosphoribosyl Transferase
GSE	: Grape Seed Extract
EG	: Ethylene Glycol
AC	: Ammonium Chloride
ABC	: Aavarai Bhavanai Chooranam
TKGV	: Trikantakadikvatha Ghan Vati
PHF-3	: Polyherbal Formulation-3
BPH	: Benign Prostatic Hyperplasia
SST	: Sho-Sai-Ko-To
HPTLC	: High-Performance Thin Layer Chromatographic
PCNL	: Percutaneous Nephrolithotomy
ESWL	: Extracorporeal Shockwave Lithotripsy
FURS	: Flexible Urinoscopy
MDA	: Malondialdehyde
E,E	: Γ -Elemene
GC	: Gas Chromatography

GCMS	: Gc-Mass Spectrometry
NMR	: Nuclear Magnetic Resonance
MS	: Mass Spectroscopy
TNF-alpha	: Tumor Necrosis Factoralpha
IL-1 beta	: Interleukin-1 Beta
NO	: Nitric Oxide
IFN-gamma	: Gamma Interferon
TBARS	: Thiobarbituric acid reactive substances
%RSD	: Percent Relative Standard Deviation
LQC	: Low Quality Control
MQC	: Medium Quality Control
HQC	: High Quality Control
LOD	: Limit Of Detection
LOQ	: Limit Of Quantification
ESWL	: Extracorporeal Shock Wave Lithotripsy
B	: Blank
S	: Standard
T	: Test
Abs.S	: Absorbance Of The Standard
ANOVA	: Analysis Of Variance