

SPECIMEN FORMAT FOR THESIS OF MONTH

Faculty : Science

Department : Biochemistry, Biotechnology & Bioinformatics

Branch/ Area: : Biootechnology

Sub Subject Heading: : Biootechnology

Candidate's Name : Shrinidhi Rai T

Candidate's Address with email : Villa no 44, Anugraha Gardens
Dhanalakshmipuram
Singanaluur, Coimbatore- 641005
Email- nidishri89@gmail.com

Title of the thesis : *In vitro* and *in vivo* investigation of antilithiatic and antioxidant property of aqueous extract *Aervalanata*

(i) In Roman Script -

(ii) In roman Script -

Nomenclature of Degree: : Ph. D.

Month & Year of Enrolment: : December, 2011

Month & Year of Registration: : December, 2011

Month & Year of Submission: : April, 2015

Month & Year of Award : February, 2016

Name of Supervisor : Dr. R. Nirmaladevi

Designation of Supervisor : Assistant Professor in Biochemistry

Centre/department/school in which research was conducted : Department of Biochemistry, Biotechnology & Bioinformatics

University's Name & Address : Avinashilingam University for Women,
Coimbatore - 641043

Abstract within 300 words:

i) Major objectives :

The study was formulated to address the following objectives

- To screen and compare the selected weeds for their antilithiatic potential under *in vitro* conditions
- To evaluate the antilithiatic potential of the weed extract with maximum efficacy using male albino Wistar rats and NRK 52E cell lines
- To assess the antioxidant status and phytochemical determination of the selected weed extract

ii) Hypothesis:

The study was designed to test the following hypotheses:

- **Null hypothesis (H₀):** The various extracts of the selected medicinal weeds do not possess significant antilithiatic activity.
- **Alternate hypothesis (H_A):** The extracts of the selected medicinal weeds contain active compounds that confer strong antilithiatic activity.

iii) Findings:

From the outcome of the study, it could be concluded that all the extracts tested were found to show stone inhibitory property in all stages of crystal formation *in vitro*. Aqueous extract of *Aerva lanata* was found to have maximum inhibitory potential when compared to all the weed extracts selected. Diuretic effect and antilithiatic property were also confirmed by the *in vivo* studies. Histopathological studies supported the results. The phytochemical analysis revealed that the aqueous extract is a rich source of antioxidants and secondary metabolites. The study confirmed that the bio- synergistic action of the phytochemicals confer antilithiatic and antioxidant property to the extract. Thus, the aqueous extract of *Aerva lanata* can be recommended as an antilithiatic agent to treat kidney stones.

Examiners

Internal Examiner :

Dr. G. Archunan
Professor and Head
Dept. of Animal Science
Bharathidasan University
Tiruchirapalli – 620024
garchu@yahoo.co.in, archunan@bdu.ac.in

External Examiner :

Dr. Umesh. K. Reddy
Professor
141 Hamblin Hall, West Virginia
State University, Institute, West
Virginia 25112-1000, USA
ureddy@wvstateu.edu