

26<sup>th</sup> July 2021

**CERTIFICATE**

This is to certify that the dissertation entitled “**CHEMICAL COMPOSITION, ANTIOXIDANT AND ANTIMICROBIAL ACTIVITY OF GEOPROPOLIS PRODUCED BY STINGLESS BEE**” is an authentic record of original research work done by **Ms. BINSHIDA, K. V. (PZATMBC005)** student of M.Sc. Biochemistry, Pazhassiraja College, Pulpally under my supervision and guidance in Amplicon Biolabs, KINFRA, Kakkanchery, for the partial fulfillment of the requirement for the award of the **Degree of Master of Science in Biochemistry**. This dissertation in full or parts have not been submitted to any other institute or University for the award of any degree or diploma. Further it is certified that this dissertation represents an independent work done by the candidate under my supervision.

*[Handwritten Signature]*  
26/07/21

**Dr. V. P. Akhilesh**  
(Supervising Guide)



**AMPLICON BIOLABS**

Room No. 17, Park Centre, KINFRA, Kakkanchery,  
Calicut University P.O, Malappuram 673 635, Kerala

0494 240 77 77

ampliconbiolabs@gmail.com, support@ampliconbiolabs.com [www.ampliconbiolabs.com](http://www.ampliconbiolabs.com)

Approval No. PCB/CL/RL/4/2009

**CHEMICAL COMPOSITION, ANTIOXIDANT ACTIVITY AND  
ANTI MICROBIAL ACTIVITY OF "GEOPROPOLIS"  
PRODUCED BY STINGLESS BEES**

The dissertation submitted to  
The University of Calicut for the award of degree  
In  
**MASTER OF SCIENCE IN BIOCHEMISTRY**

Submitted by,  
**BINSHIDA K.V (PZATMBC005)**

Under the guidance of  
**Dr. V. P. AKHILESH**  
**AMPLICON BIOLABS, KINFRA, KAKKANCHERY**



**DEPARTMENT OF BIOCHEMISTRY  
PAZHASSIRAJA COLLEGE PULPALLY,  
ACCREDITED BY NAAC WITH "B" GRADE.  
2019-2021**

**IN VITRO HEPATOPROTECTIVE ACTIVITY OF *sphagneticola*  
*calendulaces* LEAF EXTRACT AGAINST CCl<sub>4</sub> INDUCED  
HEPATOTOXICITY IN GOAT LIVER SLICE CULTURE**

The dissertation submitted to  
The University of Calicut for the award of degree  
in  
**MASTER OF SCIENCE IN BIOCHEMISTRY**

Submitted by,  
FATHIMA FAHMITHA C (PZATMBC007)

Under the guidance of  
Dr. V. P. AKILESH  
**AMPLICON BIOLABS, KINFRA, KAKKANCHERY**



**DEPARTMENT OF BIOCHEMISTRY  
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*[Handwritten Signature]*  
26/07/21

**Dr. V. P. Akhilesh**  
(Supervising Guide)



**COMPARATIVE ANALYSIS OF FRUIT METABOLITES,  
ANTIOXIDANT ACTIVITY AND ANTIOXIDANT ENZYMES OF  
DIFFERENT MANGO VARIETIES**

The dissertation submitted to  
The University of Calicut for the award of degree  
In  
**MASTER OF SCIENCE IN BIOCHEMISTRY**

Submitted by,  
Babyvarmana O K (PZATMBC004)

Under the guidance of  
Dr. V. P. Akhilesh  
**AMPLICON BIOLABS, KINFRA, KAKKANCHERY**



**DEPARTMENT OF BIOCHEMISTRY  
PAZHASSIRAJA COLLEGE PULPALLY,  
ACCREDITED BY NAAC WITH "B" GRADE.**

**2019-2021**

26<sup>th</sup> July 2021

CERTIFICATE

This is to certify that the dissertation entitled “**COMPARATIVE ANALYSIS OF FRUIT METABOLITES, ANTIOXIDANT ACTIVITY AND ANTIOXIDANT ENZYMES OF DIFFERENT MANGO VARIETIES**” is an authentic record of original research work done by **Ms. BABYVARNANA, O. K. (PZATMBC004)** student of M.Sc. Biochemistry, Pazhassiraja College, Pulpally under my supervision and guidance in Amplicon Biolabs, KINFRA, Kakkanchery, for the partial fulfillment of the requirement for the award of the **Degree of Master of Science in Biochemistry**. This dissertation in full or parts have not been submitted to any other institute or University for the award of any degree or diploma. Further it is certified that this dissertation represents an independent work done by the candidate under my supervision.



*V. P. Akhilesh*  
26/07/21

**Dr. V. P. Akhilesh**  
(Supervising Guide)

**AMPLICON BIOLABS**

Room No. 17, Park Centre, KINFRA, Kakkanchery,  
Calicut University P.O, Malappuram 673 635, Kerala

☎ 0494 240 77 77

✉ [ampliconbiolabs@gmail.com](mailto:ampliconbiolabs@gmail.com), [support@ampliconbiolabs.com](mailto:support@ampliconbiolabs.com) 🌐 [www.ampliconbiolabs.com](http://www.ampliconbiolabs.com)

Approval No. PCB/CL/RL/4/2009

**IN VITRO PHARMACOLOGICAL INVESTIGATION OF NEUTRALIZING  
PROPERTIES OF “ACYLPHA INDICA” AGAINST ‘DABOIA RUSSELLI’  
VENOM**

The dissertation submitted to  
The University of Calicut for the award of degree  
In  
**MASTER OF SCIENCE IN BIOCHEMISTRY**

Submitted by,  
**RESHMA RAJ .J .R (ATMBC008)**

Under the guidance of  
Dr. M.D.DINESH .M.S.C.,PGDQA.,Ph.D.NET  
(Assistant professor Department of microbiology)



**2019-2021**

**DEPARTMENT OF BIOCHEMISTRY  
PAZHASSIRAJA COLLEGE PULPALLY,  
ACCREDITED BY NAAC WITH “B” GRADE.**

## CERTIFICATE

This is to certify that the dissertation, entitled “**INVITRO PHARMACOLOGICAL INVESTIGATION OF NEUTRALIZING PROPERTIES OF ‘ACALYPHA INDICA’ AGAINST ‘DABOIA RUSSELLI’ VENOM**”. Submitted to the Calicut University, in partial fulfillment of the requirements for the award of the Degree of **Master of Science in Biochemistry** is a record of original research work done by **Reshma Raj J.R (PZATMBC008)** during her research in the **Department of Microbiology, Pazhassiraja College, Pulpally, Wayanad**, under my supervision and guidance. The dissertation has not formed the basis for the award of any Degree/ Diploma/ Associateship/ Fellowship or other similar title to any candidate of any university.

Date:



Certified

**Dr. Jomet Sebastian S K**  
Assistant Professor & Head  
Department of Biochemistry  
Pazhassiraja College  
Pulpally, Wayanad.

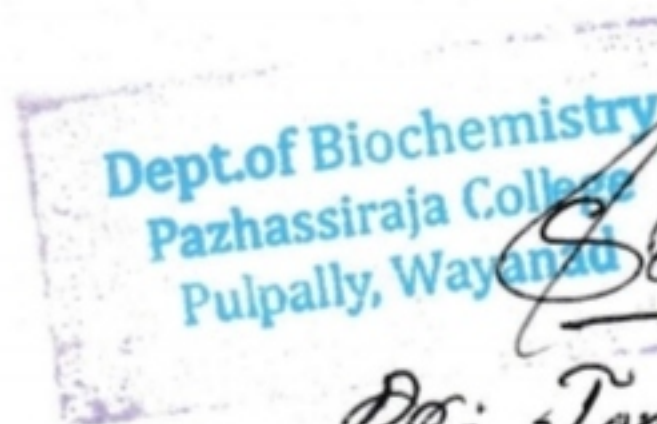
Signature of the Guide

**Dr. M.D. Dinesh. M.Sc., PGDQA. M.B.A., Ph.D.**  
Assistant Professor  
Department of Microbiology  
Pazhassiraja College  
Pulpally, Wayanad.

Counter Signed

**Dr. ANIL KUMAR**  
Principal  
Pazhassiraja College, Pulpally, Wayanad.

**Principal**  
**Pazhassi Raja College**  
**Pulpally. Pin: 673579**



**Dr: Jomet Sebastian S K**

Examiners

1. Shabeena K K

2. \_\_\_\_\_



## DECLARATION

I hereby declare that we have successfully completed our dissertation entitled **“IN VITRO PHARMACOLOGICAL INVESTIGATION OF NEUTRALIZING PROPERTIES OF “ACYLPHA INDICA” AGAINST ‘DABOIA RUSSELLI’ VENOM”** in partial fulfillment of the requirement for the M.Sc. Degree in Biochemistry, is a work done under the guidance of Dr. M.D Dinesh, Assistant professor, Department of Biochemistry, Pazhassiraja College Pulpally.

A handwritten signature in blue ink, appearing to be 'Rashmi', is written over a horizontal line.