

24/02/2023

To

The Principal,
JKK Munirajah Institute of Health Sciences College of Pharmacy,
TN Palayam.

Subject: Proposal for Research Collaboration – Reg.

Dear Sir,

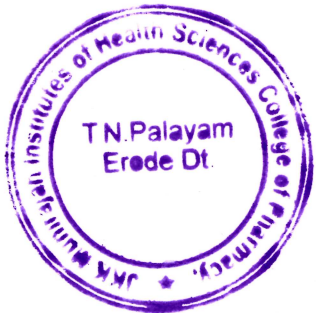
Greetings. I am writing on behalf of **Sri Selvanayagi Bio Care Pvt. Ltd.** to propose a collaboration that aligns with our mutual interests and scientific objectives.

We are impressed by your institution's expertise and research capabilities, particularly in the area of pharmacology and the study of natural extracts. Our organization is keen to explore the possibility of engaging JKK Munirajah Institute of Health Sciences College of Pharmacy in conducting research on the "**Evaluating the Antidiabetic Potential of Cassia Auriculata Linn Extract: A Study on Blood.**"

Our interest in this project stems from our dedication to advancing pharmaceutical research and developing innovative solutions to Antidiabetic Potential of Cassia Auriculata. Given the esteemed reputation of your institution, we believe that a collaboration with JKK Munirajah Institute of Health Sciences College of Pharmacy would significantly enhance our research efforts in this specific area.

In this regard, we would like to propose that your institution undertakes the research project outlined above, with funding and logistical support provided by Sri Selvanayagi Bio Care Pvt. Ltd. We are committed to ensuring the success of this project and will facilitate all necessary resources required for its completion.

Thanking you,



Principal
JKK Munirajah Institute of Health Sciences
College of Pharmacy, T.N. Palayam,
Gobi (Tk), Erode (Dt) - 638 506

Sincerely,

SRI SELVANAYAKI BIOCARE
Door No. 14, Jawaharlal Nehru Street,
Karattur, Gobichettipalayam,
Erode District-638476.

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86670 16584

கோயில்(கரட்டூர் ஆர்ச்)

V. டீமாகன்குமாறு M.Sc., Agri..

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JKK MUNIRAJAH INSTITUTE OF HEALTH SCIENCES COLLEGE OF PHARMACY

(Approved by Tamil Nadu Govt. & Pharmacy Council of India - New Delhi, Affiliated to The Tamil Nadu Dr. M.G.R Medical University, Chennai)
Thookanaickenpalayam, Gobichettipalayam (TK), Erode (DT) - 638506, Tamil Nadu.

DR. P. PERUMAL M.Pharm., Ph.D., FIC.,
Professor & Principal

27.02.2023

To

Sri Selvanayagi Bio Care Pvt. Ltd.,
No:14, Jawagarlal Nehru Street,
Karattur, Gobi-638452.

Subject: Response to Proposal for Research Collaboration - Evaluating the Antidiabetic Potential of
Cassia Auriculata Linn Extract: A Study on Blood.

Dear Sir,

I hope this letter finds you well. We greatly appreciate your interest in collaborating with JKK Munirajah Institute of Health Sciences College of Pharmacy for the research project titled "**Evaluating the Antidiabetic Potential of Cassia Auriculata Linn Extract: A Study on Blood.**"

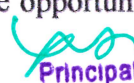
First and foremost, we are honoured and excited about the possibility of working with **Sri Selvanayagi Bio Care Private Limited** on this significant research endeavour. Your organization's dedication to advancing pharmaceutical research resonates with our mission to contribute to the field of pharmacology and improve healthcare outcomes.

We have carefully reviewed your proposal, and we are enthusiastic about the potential impact of this collaboration. The research project aligns perfectly with our expertise and ongoing efforts in the area of natural extracts and their therapeutic applications. We believe that this partnership will not only enhance our research capabilities but also foster valuable contributions to the scientific community.

We would like to express our gratitude for your willingness to provide financial support and logistical assistance for this project. We are confident that this collaboration will yield substantial results and advancements in the understanding and treatment of hyperlipidaemia.

To move forward, we propose scheduling a meeting to discuss the specific details of the collaboration, including project timelines, budget considerations, and other essential aspects. Our team is excited to engage in this research endeavour and is committed to ensuring the successful completion of the project. Please let us know your availability, and we will coordinate a meeting that accommodates your schedule. You can reach me at principal@jkkmihs.org to coordinate further.

We look forward to a productive partnership and the opportunity to contribute meaningfully to the advancement of pharmaceutical research.


Principal

JKK Munirajah Institute of Health Sciences
College of Pharmacy, T.N. Palayam,
Gobi, (TK), Erode (DT) - 638506



JKK MUNIRAJAH INSTITUTE OF HEALTH SCIENCES COLLEGE OF PHARMACY

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DR. P. PERUMAL M.Pharm., Ph.D., FIC.,

Professor & Principal




With reference to the letter dated 24/02/2023, JKKMIHSCP is permitting the following faculty members to do collaborative research with Sri Selvanayagi Bio Care Private Limited, and a proposal on the mentioned title "Evaluating the Antidiabetic Potential of Cassia Auriculata Linn Extract: A Study on Blood" is submitted along with this letter. The faculty members were assigned to do research work with Sri Selvanayagi Bio Care Private Limited, Gobi.

1. Dr. BALAJI. I, Associate Professor, Department of Pharmacology.
2. Dr. NAVANEETHAKRISHNAN. S, Assistant Professor, Department of Pharmacology.
3. Mr. GOVINDARAJ. C, Assistant Professor, Department of Pharmacology.

Kindly permit the above faculty members to execute the above research work. We are expecting a positive reply from your end.

Thanking you,

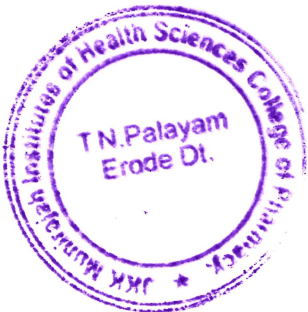
 (Dr. I. BALAJI)

Principal Investigator



Principal

JKK Munirajah Institute of Health Sciences
College of Pharmacy, T.N.Palayam,
Gobi (Tk), Erode (Dt) - 638 506





Principal

JKK Munirajah Institute of Health Sciences
College of Pharmacy, T.N.Palayam,
Gobi (Tk), Erode (Dt) - 638 506



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Thookanaickenpalayam, Gobichettipalayam (TK), Erode (DT) - 638506, Tamil Nadu.

DR. P. PERUMAL M.Pharm., Ph.D., FIC.,

Professor & Principal

BUDGET AND FACULTY DETAILS

Project Title: Evaluating the Antidiabetic Potential of Cassia Auriculata Linn Extract: A Study on
Blood Glucose Regulation in Diabetic Rats

Project Duration: 1 month

Project Budget:

S.No	Budget category	Amount in lakhs
1.	Consumables	0.3
2.	Equipment and Materials	0.4
3.	Travel and Field work	0.04
4.	Others (for animal research)	0.01
Total Budget		0.75 lakhs

Project Team:

Principal Investigator (PI):	Dr. BALAJI. I Associate Professor, Department of Pharmacology, JKKMIHSCP.
Co-Investigators:	Dr. NAVANEETHAKRISHNAN. S Assistant Professor, Department of Pharmacology, JKKMIHSCP. Mr. GOVINDARAJ. C Assistant Professor, Department of Pharmacology, JKKMIHSCP.

We kindly request an opportunity to discuss this funding application further. Your support will contribute significantly to the success of our project.

Thank you

Principal

JKK Munirajah Institute of Health Sciences
College of Pharmacy, T.N.Palayam,
Gobi (Tk), Erode (Dt) - 638 506

Yours Sincerely,

Principal

JKK Munirajah Institute of Health Sciences
College of Pharmacy, T.N.Palayam,
Gobi (Tk), Erode (Dt) - 638 506

28.02.2023

Dear Sir,

Sub: Financial assistance for Student Project scheme of Sri Selvanayagi Bio Care Pvt. Ltd. - reg.

This is to invite your attention to the reference cited and to inform that the project proposal titled **“EVALUATING THE ANTIDIABETIC POTENTIAL OF CASSIA AURICULATA LINN EXTRACT: A STUDY ON BLOOD GLUCOSE REGULATION IN DIABETIC RATS”** submitted by Dr. I. BALAJI as Principal Investigator, Dr. S. NAVANEETHAKRISHNAN and Mr. C. GOVINDARAJ as Co-investigators for the project, and it has been approved. An amount of ₹ 75,000 /- is sanctioned by the Sri Selvanayagi Bio Care Pvt. Ltd. The budget estimate of the project is as detailed below.

S.No.	ITEMS	AMOUNT (₹)
1.	Consumables	30000
2.	Equipment and Materials	40000
3.	Travel and Field work	4000
4.	Others (for animal research)	1000
	Total	75,000

The PI has to submit the signed Terms and Conditions (as per the guidelines) and the date of start of the project within two weeks to the undersigned. The project should be completed within six months and submit the certified soft copy of the final report, Statement of Expenditure and Utilization Certificate counter signed by the Head of the Institution for releasing the grant.

Thanking you,


Yours sincerely

SRI SELVANAYAKI BIOCARE
Door No. 14, Jawaharlal Nehru Street,
Karattur, Gobichettipalayam,
Erode District-638476.

Copy to:

Dr. Balaji. I
Associate Professor, JKKMIHSCP,
T.N. Palayam, Erode, 638506.


Principal.

JKK Munirajah Institute of Health Sciences
College of Pharmacy, T.N.Palayam,
Gobi (Tk), Erode (Dt) - 638 506



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கோயில்குளம் (கரட்டுர் ஆர்)

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JKK MUNIRAJAH INSTITUTE OF HEALTH SCIENCES COLLEGE OF PHARMACY

(Approved by Tamil Nadu Govt. & Pharmacy Council of India - New Delhi, Affiliated to The Tamil Nadu Dr. M.G.R Medical University, Chennai)
Thookanaickenpalayam, Gobichettipalayam (TK), Erode (DT) - 638506, Tamil Nadu.

DR. P. PERUMAL M.Pharm., Ph.D., FIC.,
Professor & Principal

PROJECT COMPLETION REPORT

Title of the project: Evaluating the Antidiabetic Potential of Cassia Auriculata Linn Extract: A Study on Blood Glucose Regulation in Diabetic Rats

Category of the project: Research project

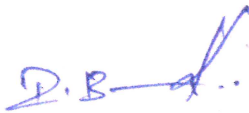
Date of approval of competent authority : 28/02/2023

Total cost of the project : Rs: 75,000/-

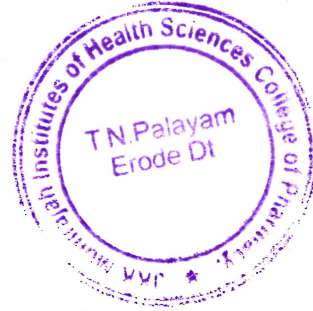
S.NO.	ITEMS	AMOUNT (₹)
1.	Consumables	30000
2.	Equipment and Materials	40000
3.	Travel and Field work	4000
4.	Others (for animal research)	1000
	Total	75000

Date of start of the project : 28/02/2023

Date of completion of project : 30/03/2023

 (Dr. P. BALAJI)

Name and Signature of Principal Investigator




Principal

JKK Munirajah Institute of Health Sciences
College of Pharmacy, T.N. Palayam,
Gobi (Tk), Erode (Dt) - 638 506

 
Name and Signature of Co-investigator

LETTER OF APPRECIATION

Date: 05.04.2023

To

The Principal,
JKK Munirajah Institute of Health Sciences College of Pharmacy,
T.N. Palayam, Erode, 638506.

Subject: Completion of project – reg.

Dear Sir,

We extend our heartfelt appreciation to you and your research team for the successful completion of the research project, "Evaluating the Antidiabetic Potential of Cassia Auriculata Linn Extract: A Study on Blood Glucose Regulation in Diabetic Rats," which was supported by Sri Selvanayagi Bio Care Pvt. Ltd.

Your dedication, commitment, and hard work throughout the project have resulted in valuable contributions to the field of pharmacology. The outcomes of this project have not only met but exceeded our expectations, and we are excited about the potential impact of your research findings.

We look forward to the dissemination of your research findings and anticipate that they will further enrich the academic and professional community. Your success reflects positively on our mission to support meaningful research and innovation.

Once again, congratulations on the successful completion of this project, and thank you for your dedication to advancing knowledge in your field. We hope to continue our collaboration on future projects.

Thank you

Sincerely,

V. Mmm

SRI SELVANAYAKI BIOCARE
Door No. 14, Jawaharlal Nehru Street,
Karattur, Gobichettipalayam,
Erode District-638476.

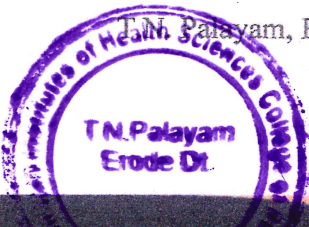
Copy to:

Dr. Balaji. I
Associate Professor, JKKMIHSCP,
T.N. Palayam, Erode, 638506.

pad

Principal

JKK Munirajah Institute of Health Sciences
College of Pharmacy, T.N.Palayam,
Gobi (Tk), Erode (Dt) - 638 506



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V. இமர்கன்குமார் M.Sc., Agri..

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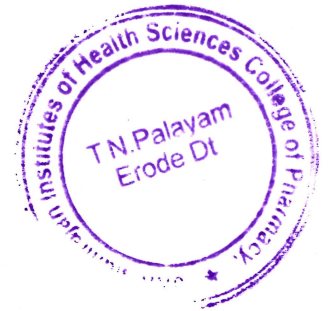
DR. P. PERUMAL M.Pharm., Ph.D., FIC.,
Professor & Principal

UTILIZATION CERTIFICATE

Certified that out of Rs. 75,000/- sanctioned by Sri Selvanayagi Bio Care Pvt. Ltd. towards financial assistance for the student project titled "EVALUATING THE ANTIDIABETIC POTENTIAL OF CASSIA AURICULATA LINN EXTRACT: A STUDY ON BLOOD GLUCOSE REGULATION IN DIABETIC PATS", an amount of Rs. 75,000/- was utilized for the purpose for which it was sanctioned, leaving a balance of Rs. 0 at the close of 30/3/2023. As shown in the Statement of Expenditure annexed.

P. B. Balaji (Dr. I. BALAJI)

Name & Signature of the Principal Investigator



[Signature]

Name & Signature of Head of Institution

Principal
JKK Munirajah Institute of Health Sciences
College of Pharmacy, T.N. Palayam,
Gobi (Tk), Erode (Dt) - 638 506

[Signature]

Principal
JKK Munirajah Institute of Health Sciences
College of Pharmacy, T.N. Palayam,
Gobi (Tk), Erode (Dt) - 638 506

**“EVALUATING THE ANTIDIABETIC POTENTIAL OF CASSIA AURICULATA
LINN EXTRACT: A STUDY ON BLOOD GLUCOSE REGULATION IN
DIABETIC RATS”**

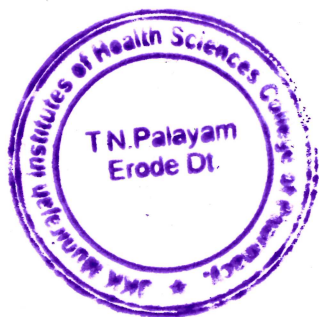
PRINCIPAL INVESTIGATOR

Dr. I. BALAJI
Associate Professor
Department of Pharmacology

CO-INVESTIGATORS

Dr. S. NAVANEETHAKRISHNAN
Assistant Professor
Department of Pharmacology

Mr. C. GOVINDARAJ
Assistant Professor
Department of Pharmacology




Principal
JKK Munirajah Institute of Health Sciences
College of Pharmacy, T.N. Palayam,
Gobi (Tk), Erode (Dt) - 638 506

MARCH-2023

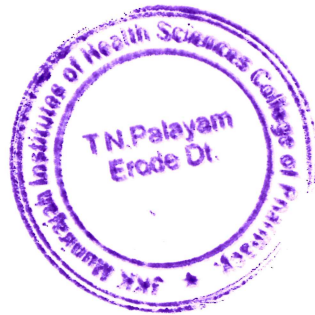
**JKK MUNIRAJAH INSTITUTE OF HEALTH SCIENCES
COLLEGE OF PHARMACY,
T.N-PALAYAM-638506, GOBI (TK), ERODE (DT),
TAMILNADU.**

CERTIFICATE

This is to certify that the Research entitled “EVALUATING THE ANTIDIABETIC POTENTIAL OF CASSIA AURICULATA LINN EXTRACT: A STUDY ON BLOOD GLUCOSE REGULATION IN DIABETIC RATS” submitted to The Sri Selvanayagi Bio Care Pvt. Ltd., is the bonafide research project work carried out in the Department of Pharmacology, JKK Munirajah Institute of Health Sciences College of Pharmacy, T.N-Palayam, Gobi, Erode, Under the guidance of **Dr. I. BALAJI, Pharm. D., Associate Professor, Department of Pharmacology, JKK Munirajah Institute of Health Sciences College of Pharmacy, T.N-Palayam, Gobi, Erode.** During the academic year 2022-2023.

Place: T.N-Palayam

Date: 30/03/2023



A handwritten signature in blue ink, appearing to be "I. Balaji".

Principal
JKK Munirajah Institute of Health Sciences
College of Pharmacy, T.N.Palayam,
Gobi (Tk), Erode (Dt) - 638 506

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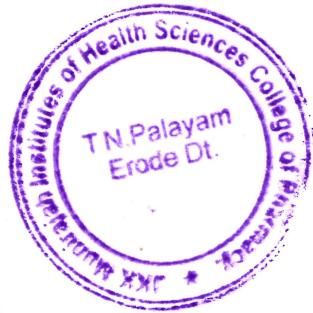
Dr. P. Perumal. M.Pharm, Ph.D, FIC

PRINCIPAL

Principal
JKK Munirajah Institute of Health Sciences
College of Pharmacy, T.N.Palayam,
Gobi (Tk), Erode (Dt) - 638 506


DECLARATION

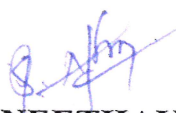
This is to certify that the Research entitled “EVALUATING THE ANTIDIABETIC POTENTIAL OF CASSIA AURICULATA LINN EXTRACT: A STUDY ON BLOOD GLUCOSE REGULATION IN DIABETIC RATS” submitted to The Sri Selvanayagi Bio Care Pvt. Ltd., is the bonafide project work carried out in the Department of Pharmacology, JKK Munirajah Institute of Health Sciences College of Pharmacy, T.N-Palayam, Gobi, Erode, Under the guidance of **Dr. I. BALAJI, Pharm. D., Associate Professor, Department of Pharmacology, JKK Munirajah Institute of Health Sciences College of pharmacy, T.N-Palayam, Gobi, Erode.** During the academic year 2022-2023.





Place: T.N-Palayam

Date: 30/03/2023


Dr. I. BALAJI Pharm.D.,
Principal Investigator


Dr. S. NAVANEETHAKRISHNAN Pharm.D.,
Co-Investigator


Principal
JKK Munirajah Institute of Health Sciences
College of Pharmacy, T.N.Palayam,
Gobi (Tk), Erode (Dt) - 638 506


Mr. C. GOVINDARAJ M.Pharm.,
Co-Investigator

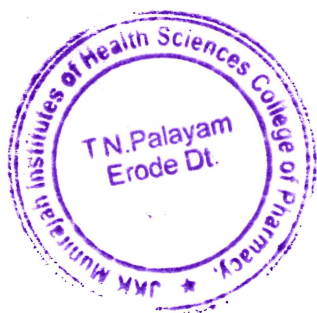
DECLARATION

The research work embodied in this work entitled “Evaluating the Antidiabetic Potential of Cassia Auriculata Linn Extract: A Study on Blood Glucose Regulation in Diabetic Rats” was carried out by us under the direct supervision of Dr. I. Balaji, Pharm. D., Associate Professor, Department of Pharmacology, JKK Munirajah Institute of Health Sciences College of Pharmacy, T.N-Palayam, Gobi.

The Project submitted to the **Sri Selvanayagi Bio Care Pvt. Ltd.**, during the academic year 2022-2023



Principal
JKK Munirajah Institute of Health Sciences
College of Pharmacy, T.N.Palayam,
Gobi (Tk), Erode (Dt) - 638 506



ACKNOWLEDGEMENT

First and for most we express our heartfelt sense of gratitude and faithfulness to God 'grace and our family members, which has enabled us to finish our project work successfully.

With the blessing of our Founder chairman Dr. J.K.K Munirajah, M.Tech, (Bolton). D.Litt., and Secretary Mrs. Kasthuripriya Kirupakarmurali, M.B.A.,

J.K.K Munirajah Institute of Health Sciences College of Pharmacy, T.N-Palayam, Gobi, Erode for providing all the facilities to carry out this work.

Our sincere gratitude to our beloved sir, Dr. P.Perumal, M.Pharm, Ph.D,FIC., Principal and Head of the Department of Pharmaceutical Chemistry, J.K.K Munirajah Institute of Health Sciences College of Pharmacy, T.N-Palayam, Gobi, Erode for his kindly support for our project work and for his encouragement and also providing all facilities in this Institute to the fullest possible extent enabling us to complete this work.

With the immense pleasure and pride, we would to take opportunity in expressing our deep sense of gratitude to our beloved guide Dr.I.Balaji Pharm.D., Associate Professor, Department of Pharmacology J.K.K Munirajah Institute of Health Sciences College of Pharmacy, T.N-Palayam, Gobi, Erode under whose active guidance, innovate ideas, constant inspiration and encouragement of the work entitled "Evaluating the Antidiabetic Potential of Cassia Auriculata Linn Extract: A Study on Blood Glucose Regulation in Diabetic Rats" has been carried out.

We also express our grateful thanks to all the teaching and non-teaching staff members of J.K.K Munirajah Institute of Health Sciences College of Pharmacy for their valuable advice and cooperation.

We express our heartfelt gratitude to the almighty, for giving us the right way to achieve the best of our project.



A handwritten signature in green ink, appearing to be "Perumal".

Principal
JKK Munirajah Institute of Health Sciences
College of Pharmacy, T.N.Palayam,
Gobi (Tk), Erode (Dt) - 638 506

We would like to give sincere thanks to our classmates for their timely help and co-operation.

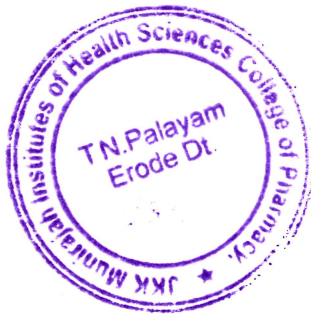
We also extend our thanks to all staff members of Department of Pharmaceutical Biotechnology, Pharmaceutical Chemistry, Pharmacognosy, Pharmaceutics and Pharmacology for their co-operation.

We would like to thank Sri Selvanayagi Bio Care Pvt. Ltd., to give a Financial and moral support to completion of the project being a successful manner on the duration of 2022-2023.

Last but not least, great thanks from the heart to our beloved MOTHER and FATHER. They are our living god, as who guided us in the rightful way to achieve all our activities. They gave the incredible effort to become a successful for bright future in this world. Thanks a lot, to my parents.



Principal
JKK Munirajah Institute of Health Sciences
College of Pharmacy, T.N.Palayam,
Gobi (Tk), Erode (Dt) - 638 506



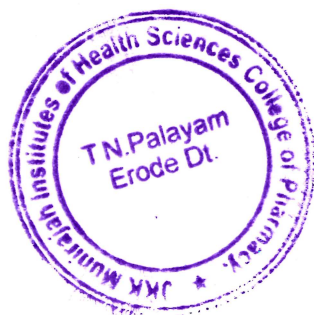
ABSTRACT:


The present study aimed to investigate the antidiabetic activity of the hydromethanolic extract and its fractions from the flowers of *Cassia auriculata* Linn. in Streptozotocin-induced diabetes in rats. The n-butanol fraction exhibited a significant reduction in blood glucose levels and was also effective in restoring the blood lipids and proteins to normal levels. The activity was found comparable with the standard drug phenformin. The hydromethanolic extract and its fractions were subjected to preliminary qualitative chemical investigations which indicated the presence of phenolic compounds, carbohydrates, tannins, steroids, and amino acids.

The findings suggest that the flavonoids from *Cassia auriculata* Linn. may be responsible for its antidiabetic potency, and the n-butanol fraction is a potent fraction responsible for the antihyperglycemic effect of *Cassia auriculata* flowers in Streptozotocin (STZ)-induced diabetes. The study provides scientific evidence for the traditional use of *Cassia auriculata* Linn. in the treatment of diabetes and highlights the potential of natural products in the treatment of diabetes and the importance of traditional medicine in drug discovery.

Keywords:

Antidiabetic activity, *Cassia auriculata*, diabetes, hydromethanolic, antihyperglycemic, Streptozotocin

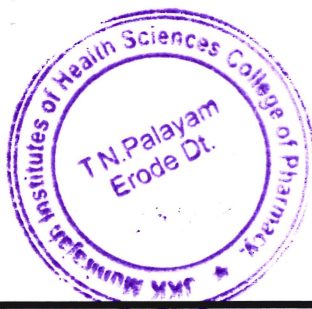



Principal
JKK Munirajah Institute of Health Sciences
College of Pharmacy, T.N. Palayam,
Gobi (Tk), Erode (Dt) - 638 506

INTRODUCTION:

Diabetes is a chronic metabolic disorder characterized by hyperglycemia and disturbances in carbohydrate, fat, and protein metabolism. Despite advances in understanding and management, the mortality and morbidity due to this disease are increasing. In India, this disorder is in an alarming condition as compared to most of the developed countries. The focus has been shifted to treating various ailments through plant-derived drugs due to their safety, efficacy, cultural acceptability, and lesser side effects. *Cassia auriculata* Linn. is a plant that has been traditionally used in Ayurvedic medicine for the treatment of diabetes. The plant is known for its antidiabetic, antihyperlipidemic, and antioxidant properties.

The present study aimed to investigate the antidiabetic activity of the hydromethanolic extract and its fractions from the flowers of *Cassia auriculata* Linn. In Streptozotocin (STZ) -induced diabetes in rats. Streptozotocin (STZ) is a diabetogenic agent that causes selective destruction of pancreatic beta cells, leading to insulin deficiency and hyperglycemia. The Streptozotocin-induced diabetic rat model is widely used to evaluate the antidiabetic activity of natural products. The study aimed to evaluate the antihyperglycemic activity of the hydromethanolic extract and its fractions from the flowers of *Cassia auriculata* Linn. In Streptozotocin-induced diabetic rats. The study provides scientific evidence for the traditional use of *Cassia auriculata* Linn. in the treatment of diabetes and highlights the potential of natural products in the treatment of diabetes. The plant can be used as a source of natural antidiabetic agents, and the n-butanol fraction can be further investigated for its active constituents and mechanism of action.



A handwritten signature in blue ink, appearing to be "G. Govindarajan".

Principal

JKK Munirajah Institute of Health Sciences
College of Pharmacy, T.N. Palayam,
Gobi (Tk), Erode (Dt) - 638 506

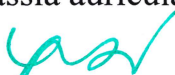
OBJECTIVES:

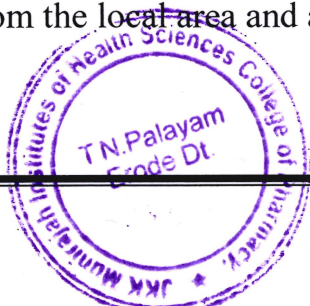
1. To investigate the antidiabetic activity of the hydromethanolic extract and its fractions from the flowers of *Cassia auriculata* Linn. in Streptozotocin (STZ) -induced diabetes in rats.
2. To evaluate the antihyperglycemic activity of the hydromethanolic extract and its fractions from the flowers of *Cassia auriculata* Linn. in Streptozotocin (STZ) -induced diabetic rats.
3. To determine the active constituents responsible for the antidiabetic activity of *Cassia auriculata* Linn.
4. To compare the antidiabetic activity of the n-butanol fraction with the standard drug phenformin.
5. To investigate the mechanism of action of the n-butanol fraction of *Cassia auriculata* Linn. in Streptozotocin-induced diabetic rats.
6. To provide scientific evidence for the traditional use of *Cassia auriculata* Linn. in the treatment of diabetes.
7. To contribute to the development of new antidiabetic drugs.

MATERIALS AND METHODS:

Materials: - Flowers of *Cassia auriculata* Linn. – Streptozotocin (STZ) - Phenformin - Hydromethanol - Ethyl acetate - n-butanol - Distilled water - Standard kits for biochemical estimations

Methods:

1. Collection and authentication of plant material: The flowers of *Cassia auriculata* Linn. were collected from the local area and authenticated by a botanist. 

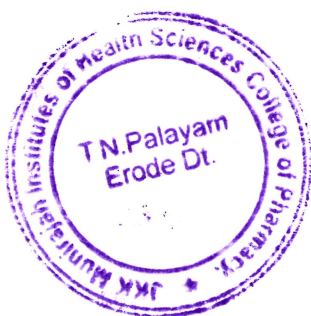


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2. Preparation of hydromethanolic extract: The flowers were shade-dried, powdered, and extracted with hydromethanol (70:30) using a Soxhlet apparatus. The extract was concentrated under reduced pressure and stored at 4°C.
3. Fractionation of hydromethanolic extract: The hydromethanolic extract was fractionated using ethyl acetate and n-butanol. The fractions were concentrated under reduced pressure and stored at 4°C.
4. Phytochemical screening: The hydromethanolic extract and its fractions were subjected to preliminary qualitative chemical investigations to identify the presence of various phytoconstituents.
5. Acute toxicity study: The acute toxicity study was performed to determine the safe dose range of the n-butanol fraction.
6. Induction of diabetes: Streptozotocin (STZ) was used to induce diabetes in rats.
7. Experimental design: The rats were divided into six groups, and each group received different treatments.
8. Biochemical estimations: Blood glucose, lipid profile, and protein levels were estimated using standard kits.
9. Statistical analysis: The data were analysed using one-way ANOVA followed by Dunnett's test.



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RESULTS:

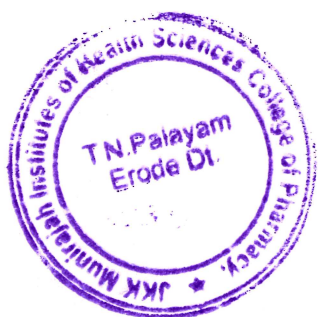
The n-butanol fraction of the hydromethanolic extract of *Cassia auriculata* Linn. Exhibited significant reduction ($p < 0.05$) in blood glucose levels in Streptozotocin-induced diabetic rats. The n-butanol fraction was also found effective in restoring the blood lipids and proteins to normal levels. The antidiabetic activity of the n-butanol fraction was found comparable with the standard drug phenformin.

The hydromethanolic extract and its fractions were subjected to preliminary qualitative chemical investigations, which indicated the presence of phenolic compounds, carbohydrates, tannins, steroids, and amino acids. The acute toxicity study showed that the n-butanol fraction was safe up to a dose of 2 g/kg. The study provides scientific evidence for the traditional use of *Cassia auriculata* Linn.

In the treatment of diabetes. The study highlights the potential of natural products in the treatment of diabetes and the importance of traditional medicine in drug discovery. The n-butanol fraction of *Cassia auriculata* Linn. Can be further investigated for its active constituents and mechanism of action. The study has important implications for the development of new antidiabetic drugs.



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CONCLUSION:

The study concludes that the n-butanol fraction of the hydromethanolic extract of *Cassia auriculata* Linn. Exhibits significant antihyperglycemic activity in Streptozotocin-induced diabetic rats. The fraction was found effective in restoring the blood lipids and proteins to normal levels and was comparable with the standard drug phenformin. The study provides scientific evidence for the traditional use of *Cassia auriculata* Linn. In the treatment of diabetes and highlights the potential of natural products in the treatment of diabetes. The n-butanol fraction of *Cassia auriculata* Linn. Can be further investigated for its active constituents and mechanism of action. The study has important implications for the development of new antidiabetic drugs.



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