



meiji
Meiji Group

BANGALORE | LONDON | SYDNEY

03/09/2021

To

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

Sub: Request for Funding for Research Project – Reg.

Dear Sir,

Greetings. I am writing to express our strong interest in initiating a research collaboration with JKK Munirajah Institute of Health Sciences College of Pharmacy, a respected institution known for its contributions to pharmaceutical research and education.

At Medreich Limited., we are committed to advancing knowledge and innovation in the field of pharmaceuticals. We believe that collaborative research with your institution presents a valuable opportunity to leverage your expertise and resources for a mutually beneficial project.

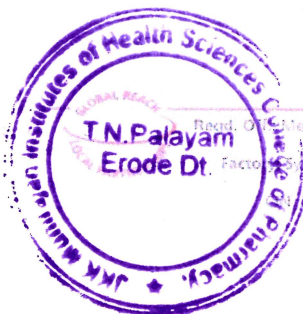
We are particularly interested in exploring a research project in the area of Herbal Anti-Aging Cream by using Sweet Potato, which aligns with our strategic goals and has the potential to bring meaningful contributions to the pharmaceutical industry. We are confident that the combined efforts of our organization and your esteemed institution can lead to significant advancements in this field.

To facilitate this collaboration, we kindly request your consideration for a research partnership and potential financial support for the proposed project. We are fully committed to providing the necessary financial resources and any additional support required to ensure the successful execution of the research endeavor.

Understanding that every collaboration comes with unique terms and conditions, we are open to discussing and accommodating any specific requirements or standards set by JKK Munirajah Institute of Health Sciences College of Pharmacy. Additionally, we commit to adhering to all reporting and accountability guidelines throughout the research process.

Principal

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



Medreich Limited

Regd. Office: Medreich House, No. 12/0, Saraswathi Ammal Street, Maruthi Nagar, Bangalore
Phone: +91 80 4049 7100 Fax: +91 80 2547 4741
Factory: No. 11-15, Pojpramanahalli Village, Jagdehenahalli Hoalli, Old Madras Road, Hosikote Taluk,
Bangalore Rural District- 562 114, INDIA. Phone: +91 80 4048 7395 / 4048 7396
U24232KA1073PLC002382 E mail: info@medreich.com, Website: www.medreich.com

Enclosed with this letter is a comprehensive project proposal that outlines the project's objectives, methodologies, expected outcomes, and budget requirements. We kindly ask for your review of the proposal, and we would greatly appreciate the opportunity to engage in further discussions about the project's implementation.

We genuinely believe that a collaborative effort between our organization and your institution has the potential to drive impactful change in the pharmaceutical landscape. We are excited about the prospect of working closely with JKK Munirajah Institute of Health Sciences College of Pharmacy and contributing to the advancement of pharmaceutical research.

To further our discussions and provide clarity for project planning, we kindly request the following details:

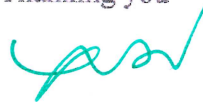
Budget Details: We would appreciate a comprehensive breakdown of the estimated budget required for the proposed research project. This should include expenses for equipment, materials, personnel, and any other relevant costs.

Faculty Details: Information regarding the faculty members who will be involved in the project, including their qualifications, expertise, and experience in related fields. We are particularly interested in identifying the Principal Investigator for this project.

Understanding that every collaboration may have unique terms and conditions, we are open to discussing and adhering to any specific requirements or standards set by JKK Munirajah Institute of Health Sciences College of Pharmacy. Additionally, we reiterate our pledge to maintain the highest standards of reporting and accountability throughout the research process.

Thank you for considering our proposal, and we eagerly await your response. Please feel free to reach out to us at your convenience to initiate discussions and explore the potential of this partnership.

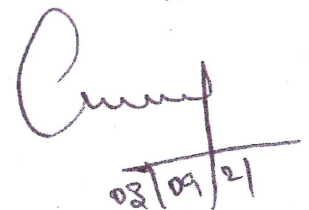
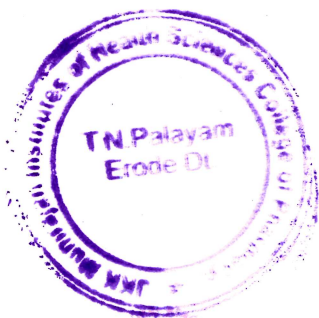
Thanking you



Principal

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

Sincerely,


08/09/21

Medreich Limited



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

06.09.2021

To

Medreich Limited,
12/8, Saraswati Ammal Street,
Maruthi Sevanagar,
Bangalore - 560 033.

Subject: Response to Your Request for a Second Research Project Collaboration – Reg.

Dear Sir/Madam,

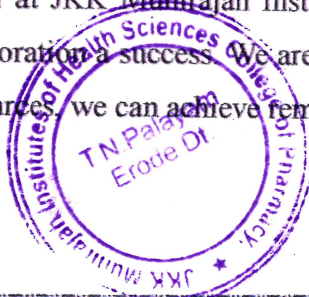
Warm Greetings. On behalf of JKK Munirajah Institute of Health Sciences College of Pharmacy, I extend my warm greetings and express our sincere appreciation for your continued interest in collaborating on research initiatives with our institution.

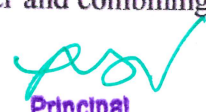
We are delighted to receive your request for a second research project, and I would like to convey our enthusiasm for the prospect of furthering our fruitful collaboration. It is heartening to know that our previous joint research efforts have yielded positive outcomes and left a lasting impression on your esteemed organization.

The proposal for the proposed second research project has been received with great interest, and we are excited about the possibility of embarking on another impactful research journey together. As we begin our discussions and preparations for this endeavour, please accept our gratitude for your willingness to support this initiative.

In response to your request for budget and faculty details, we are committed to providing the necessary information promptly. We understand the importance of clarity and transparency in project planning and will ensure that you receive a comprehensive breakdown of the estimated budget and details regarding the faculty members, including the Principal Investigator, who will be involved in this project.

Our team at JKK Munirajah Institute of Health Sciences College of Pharmacy is dedicated to making this collaboration a success. We are confident that by working closely together and combining our expertise and resources, we can achieve remarkable outcomes in this research project.




Principal

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



JKK MUNIRAJAH INSTITUTE OF HEALTH SCIENCES COLLEGE OF PHARMACY

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

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

I propose that we schedule a meeting at your earliest convenience to discuss the specifics of the project, including budget details, faculty involvement, project timelines, and any other relevant aspects. Your insights and contributions will be invaluable as we move forward.

Once again, thank you for your continued interest in partnering with us. We look forward to a productive and mutually beneficial research endeavour and are excited about the opportunity to contribute to the advancement of knowledge in our field.

Please feel free to contact me directly at principal@jkkmihsdp.org to coordinate our meeting or to address any further inquiries you may have.

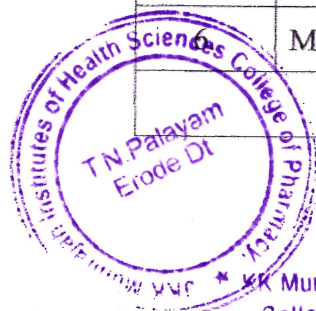
BUDGET AND FACULTY DETAILS

Project Title: Formulation and Evaluation of Anti-Aging Herbal Cream by using Ipomoea batatas (L) lam (Sweet Potato)

Project Duration: 6 months

Project Budget Estimation:

S. No	Detail of Expenditure	Amount in lakhs
1.	Laboratory Equipment and Supplies (Glassware, Instruments)	0.35
2.	Raw Materials (Ipomoea batatas Extract)	0.4
3.	Research Personnel (Salaries, Stipends)	0.3
4.	Chemicals and Reagents	0.2
5.	Buffer (10% of Total Budget)	0.15
	Miscellaneous Expenses	0.1
Total Budget (Including Buffer)		1.5 lakhs



[Signature]
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



JKK MUNIRAJAH INSTITUTE OF HEALTH SCIENCES COLLEGE OF PHARMACY

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

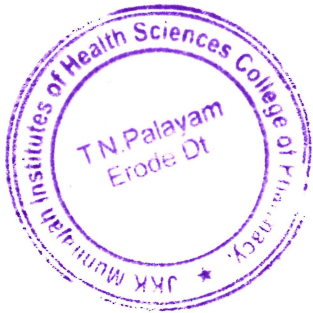


Details of the Project Team:

Principal Investigator (PI):	DR.S. GANDHIMATHI, Associate Professor, Department of Pharmacognosy, JKKMIHSCP.
Co-Investigators:	Mr. K. KANNADHASAN, Assistant Professor, Department of Pharmacognosy, JKKMIHSCP. Mr. K. G. BALASUBRAMANIAM, Assistant Professor, Department of Pharmacognosy, JKKMIHSCP.

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

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



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SANCTION ORDER

Date: 10.09.2021

Medreich Limited is operating a programme for supporting research projects in Colleges and University Departments. DR. S. GANDHIMATHI, Associate Professor, Department of Pharmacognosy, JKK Munirajah Institute of Health Sciences College of Pharmacy, T.N Palayam, Erode, has submitted a research project with Mr. K. KANNADHASAN, Assistant Professor, Department of Pharmacognosy, and Mr. K. G. BALASUBRAMANIAM, Assistant Professor, Department of Pharmacognosy, as co-investigator for project assistance.

Medreich Limited has sanctioned Rs. 1,50,000/- (Rupees One lakh fifty thousand only) for the conduct of the above said project. The PI has submitted the final report and financial statements after completion of the project.

Medreich Limited has verified the submitted documents and is pleased to accord sanction for the release of Rs. 1,50,000 /- (Rupees One lakh fifty thousand only) towards financial assistance for the research project titled " Formulation and Evaluation of Anti-Aging Herbal Cream by using Ipomoea batatas (L) lam (Sweet Potato)" submitted by DR. S. GANDHIMATHI, Associate professor, Department of Pharmacognosy, JKK Munirajah Institute of Health Sciences College of Pharmacy, T.N Palayam.

Thanking you

Sincerely

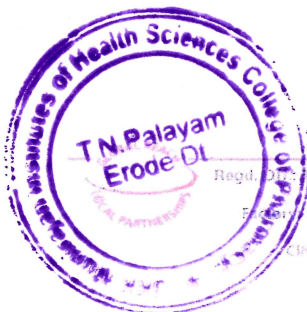
Copy to:

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

Principal

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

Medreich Limited



Regd. Office: Medreich House, No. 12/3, Saranathi Arambil Street, Maruthi Sevanagar, Bangalore - 560 022, INDIA
Phone: +91 80 4048 7100 Fax: +91 80 2547 4741
Branch Office: No. 11-15, Pogaramanahalli Village, Janginahalli Hobli, Old Madras Road, Hoskote Taluk,
Bangalore Rural District- 562 114, INDIA Phone: +91 80 4048 7395 / 4048 7390
CIN: U24232KA1973PLC092181 E-mail: info@medreich.com Website: www.medreich.com



JKK MUNIRAJAH INSTITUTE OF HEALTH SCIENCES COLLEGE OF PHARMACY

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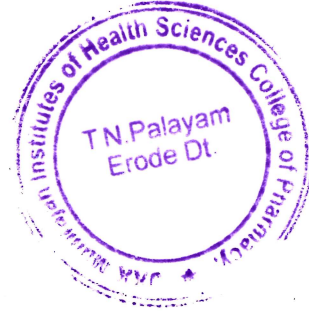
DR. P. PERUMAL M.Pharm., Ph.D., FIC.,
Professor & Principal

PROJECT COMPLETION REPORT

Date: 11/02/2022

To

Medreich Limited,
12/8, Saraswati Ammal Street,
Maruthi Sevanagar,
Bangalore - 560 033.



Subject: Research Project Completion Report – Reg.

Respected Sir/Madam,

With respect to the above-mentioned subject I, DR. S. GANDHIMATHI, Principal Investigator, have completed research project, sanctioned under Student Project Scheme for the year 2021-2022.

The audit for the research project has been completed. The details of the completed research project are as follows:

Title of the Project: Formulation and Evaluation of Anti-Aging Herbal Cream by using Ipomoea batatas (L) lam (Sweet Potato).

Project Duration: 10.09.2021 – 07.02.2022

Thanking 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



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Date: 25.02.2022

To

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

LETTER OF APPRECIATION

Dear Sir,

We would like to take opportunity to thank you for your time spending and valuable Research work to our organization. Once again, we extend our sincere gratitude to you and your team for your efforts in making the "Formulation and Evaluation of Anti-Aging Herbal Cream by using Ipomoea batatas (L) lam (Sweet Potato)" a resounding success.

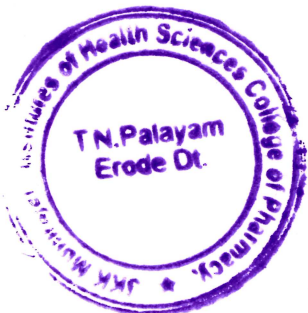
We look forward to the continuation of our successful partnership and to exploring new opportunities for collaboration.

Thank you

Principal

JKK Munirajah Institute of Health Sciences
College of Pharmacy, T.N.Palayam,
Gobi (Tk), Erode (Dt) - 638 508

Sincerely,

25/02/22

Medreich Limited

Regd. Off: Medreich House, No. 12/3, Saravali Ammal Street, Maruthi Sivanagar, Bangalore - 560 023, INDIA
Phone: +91 80 3048 7100 Fax: +91 80 2517 4241

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Bangalore Rural District - 562 114, INDIA Phone: +91 80 3048 7395 / 4048 7396

CIN: U24232KA1973PLC002381 E-mail: info@medreich.com Website: www.medreich.com





JKK MUNIRAJAH INSTITUTE OF HEALTH SCIENCES COLLEGE OF PHARMACY

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

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

UTILIZATION CERTIFICATE

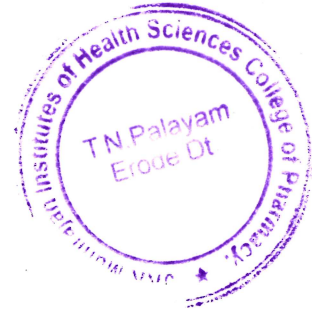
Certified that the grant of Rs. 1,50,000 /- (Rupees One lakh fifty thousand only) received from the Medreich Limited, Bangalore, under the scheme of support for Research Project entitled "Formulation and Evaluation of Anti-Aging Herbal Cream by using Ipomoea batatas (L) lam (Sweet Potato)" dated 10 September 2021 has been fully utilized for the purpose for which it was sanctioned and in accordance with the terms and conditions laid down by the Medreich Limited, Bangalore.

Date: 7/02/2022

Place: T.N. PALAYAM

Name and Signature of Principal

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



S. S. GANDHIMATHI [DR. S. GANDHIMATHI]

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

**“FORMULATION AND EVALUATION OF ANTI-AGING HERBAL CREAM BY
USING Ipomoea batatas (L) lam (SWEET POTATO)”**

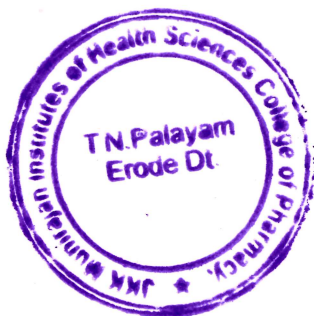
PRINCIPAL INVESTIGATOR


DR. S. GANDHIMATHI, M. Pharm., Ph. D.,
Associate Professor,
Department of Pharmacognosy.

CO-INVESTIGATORS

Mr. K. KANNADHASAN, M. Pharm.,
Assistant Professor,
Department of Pharmacognosy.

Mr. K. G. BALASUBRAMANIAM, M. Pharm.,
Assistant Professor,
Department of Pharmacognosy.




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

FEBRUARY-2022

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 “**FORMULATION AND EVALUATION OF TOPICAL FORMULATIONS OF ANTI-AGING HERBAL CREAM BY USING Ipomoea batatas(L) lam(SWEET POTATO)**” submitted to The **Medreich Limited**, is the bonafide project work carried out in the Department of Pharmacognosy, JKK Munirajah Institute of Health Sciences College of Pharmacy, T.N-Palayam, Gobi, Erode, Under the guidance of **DR. S. GANDHIMATHI, M. Pharm., Ph. D., Associate Professor, Department of Pharmacognosy, JKK Munirajah Institute of Health Sciences College of Pharmacy, T.N Palayam,Gobi, Erode.** During the academic year 2021-2022.

Place: T.N-Palayam

Date: 7/02/2022

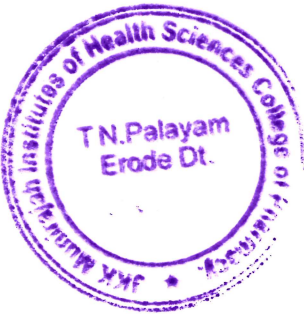
Dr. P. Perumal. M.Pharm,Ph.D,FIC

PRINCIPAL

Principal
JKK Munirajah Institute of Health Sciences
College of Pharmacy, T.N.Palayam,
Gobi (Tk), Erode (Dt) - 638 505

DECLARATION

This is to certify that the Research entitled “**FORMULATION AND EVALUATION OF TOPICAL FORMULATIONS OF ANTI-AGING HERBAL CREAM BY USING Ipomoea batatas(L) lam(SWEET POTATO)**” submitted to The **Medreich Limited**, is the bonafide project work carried out in the Department of Pharmacognosy, JKK Munirajah Institute of Health Sciences College of Pharmacy, T.N-Palayam, Gobi, Erode, Under the guidance of **DR. S. GANDHIMATHI, M. Pharm., Ph. D., Associate Professor, Department of Pharmacognosy, JKK Munirajah Institute of Health Sciences College of Pharmacy, T.N Palayam,Gobi, Erode.** During the academic year 2021-2022.



Place: T.N-Palayam

Date: 7/2/2022

S. Gandhimathi
DR. S. GANDHIMATHI, M. Pharm., Ph. D.,
Principal Investigator

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

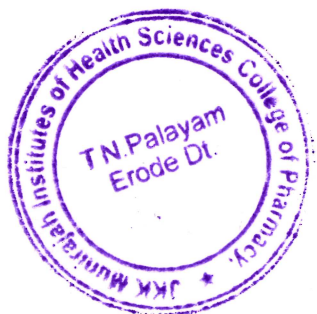
K. Kannadhasan
Mr. K. KANNADHASAN, M. Pharm.,
Co-Investigator


K. G. Balasubramaniam
Mr. K. G. BALASUBRAMANIAM, M. Pharm.,
Co-Investigator

DECLARATION

The research work embodied in this work entitled “Formulation and Evaluation of Anti-Aging Herbal Cream by using Ipomoea batatas (L) lam (Sweet Potato)” was carried out by us under the direct supervision of DR. S. GANDHIMATHI, M. Pharm., Ph. D., Associate Professor, Department of Pharmacognosy, JKK Munirajah Institute of Health Sciences College of Pharmacy, T.N-Palayam, Gobi.

The Project submitted to the **Medreich Limited**, during the academic year 2021-2022.




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

ACKNOWLEDGEMENT

First and foremost 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.,

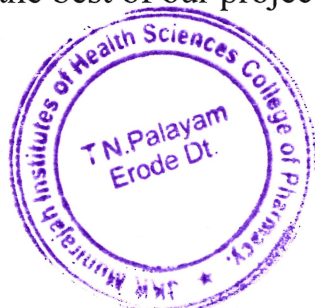
J.K.K Munirajah Institute of Health Sciences College of Pharmacy, T.N-Palayam, Gobi, Erode for providing all the facilities to carry out this work.


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 like to take opportunity in expressing our deep sense of gratitude to our beloved guide DR. S. GANDHIMATHI, M. Pharm., Ph. 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, innovative ideas, constant inspiration and encouragement of the work entitled "Formulation and Evaluation of Anti-Aging Herbal Cream by using Ipomoea batatas (L) lam (Sweet Potato)" 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.




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.

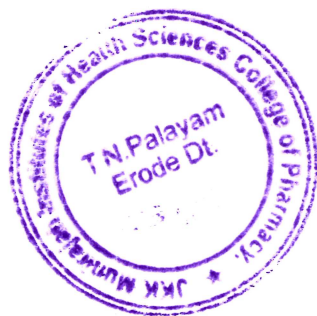
We also extend our thanks to all staff members of Department of Pharmaceutical Biotechnology, Pharmaceutical Chemistry, Pharmacognosy, Pharmaceutics and Pharmacology for their co-operation.

We would like to thank Medreich Limited to give a Financial and moral support to completion of the project being a successful manner on the duration of 2021-2022.

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) - 638 505



SKIN AGING:

Aging is a common process of human beings in which there is inability in maintenance of homeostasis and risk of dying increases. After the age of 20 its symptoms appear as the collagen content per unit area starts decreasing, there is 1% decrease in collagen content per unit area of the skin every year⁷.

It is divided into two types, intrinsic and extrinsic aging. The intrinsic aging is associated with genetics whereas extrinsic aging is caused by external factors such as sun exposure, smoking, diet, lifestyle etc. Aging occurs due to sun exposure is known as photo aging, various signs of photo aged skin are deep wrinkles, rough and dry skin, dark and light patches and loss of skin's elasticity.

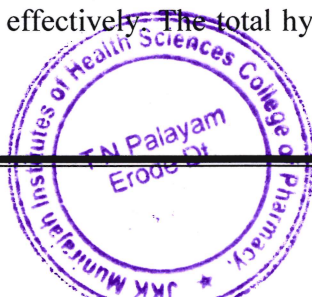
However, we can protect ourselves from photo aging with the help of following agents like ozone, water, skin thickness, melanin, cosmetics, fabrics etc.,

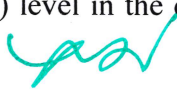
During aging there is imbalance between collagen production and degradation, its production decreases whereas level of collagen degrading enzymes increases. Skin wrinkling is one of the important features of aging of human skin, exact mechanism of wrinkles formation is still unknown but it has been observed that chronic exposure to sun and smoking causes enhancement in the expressions of matrix metalloproteinase, an enzyme which in turn causes repetitive breakdown of collagen fibers and responsible for structural defect in dermis and wrinkles development⁸.

Wrinkles also known as waviness, both the term associated with "fibers misalignment", which refers to displacement from its original position. There are so many factors which increases skin wrinkling such as smoking, ultraviolet irradiation, alcohol, diet, genetic factors, in case of smokers the degradation or loss of collagen fibers occurs due to changes in vasodilatory capacity of the skin microcirculation. Skin elasticity is one of the major factors in skin's health; low tensile strength of skin, excessive stress, improper hormone balance and mutation also leads to skin tension and wrinkling.

Dryness of epidermal layer causes skin wrinkling so proper hydration should be maintained to decrease wrinkles. Tobacco smoking causes premature skin aging, the smoke extract of tobacco disturbs the production of collagen fibers and hence skin elasticity. The enzyme angiotensin II plays a vital role in photo aging of skin as it is involved in healing wounds and scar formation, appearance of scars leads to wrinkles. So by using angiotensin converting enzyme (ACE) inhibitors which prevent the conversion of angiotensinogen (inactive) to angiotensin (active) we can decrease the effect of angiotensin II induced skin aging and wrinkles¹⁰.

Glycol amino glycan's (GAGs) are among the primary dermal skin matrix constituents assisting in binding water. In photo-aged skin, GAGs may be associated with abnormal elastic material and thus be unable to function effectively. The total hyaluronic acid (HA) level in the dermis of skin that age




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intrinsically remains stable.

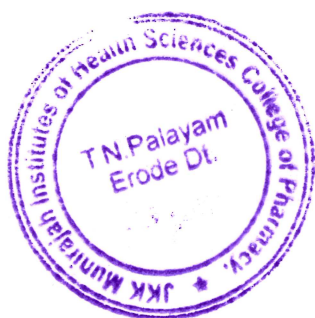
However, epidermal HA diminishes markedly. Decreased estrogen levels may play a role in skin aging in women and compounds stimulating estrogen receptors could potentially counteract some of the visible signs of aging. As people live longer, women spend a larger portion of their lives in a post-menopausal state, with a deficiency of estrogen as compared to their younger selves. Changes in diet and increasing exercise, together with a regimen of antioxidants, nutritional supplements, and growth factors, can alter how the genes express themselves. Both factors can greatly enhance the healing capability of the skin and can improve the results of cosmetic surgeries.

CHANGES IN SKIN AGING:

Exposed directly to the air, skin is not only subjected to intrinsic aging but also superimposed by extrinsic aging. These aging processes are accompanied by phenotypic changes in cutaneous cells as well as structural and functional changes in extracellular matrix components such as collagens, elastin, and proteoglycans that are required to provide tensile strength, elasticity, and hydration to the skin, respectively.



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AIM AND OBJECTIVES

AIM:

Plant source are rich in phytochemicals. Active phytochemical such as flavonoids, terpenoids, alkaloids, polyphenols and anthocyanin are present. Polyphenols and Anthocyanin are known to responsible for the antioxidant activity.

After literature survey the tuber of Ipomoea batatas(L) lam was found to possess more antioxidant phytochemical which is responsible for anti-aging so we opt this work for our research.

Hence the aim and objectives of the present research is phytochemical analysis, formulation and evaluation of anti-aging herbal cream by using Ipomoea batatas(L) lam.

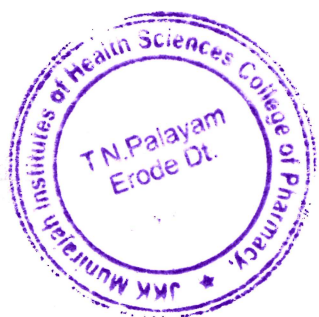
OBJECTIVE:


Extraction of tubers of Ipomoea batatas(L) lam using ethanol by continuous extraction method.

The objective of this research work was identification of phytochemicals by performing preliminary phytochemical analysis from ethanoic extract, formulate the anti-aging herbal cream and evaluate the prepared anti-aging herbal cream from the tubers of Ipomoea batatas(L) lam.

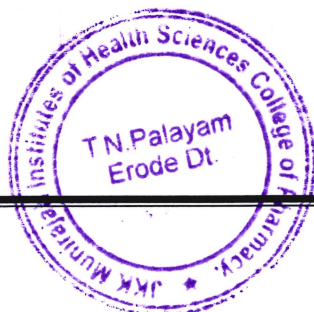
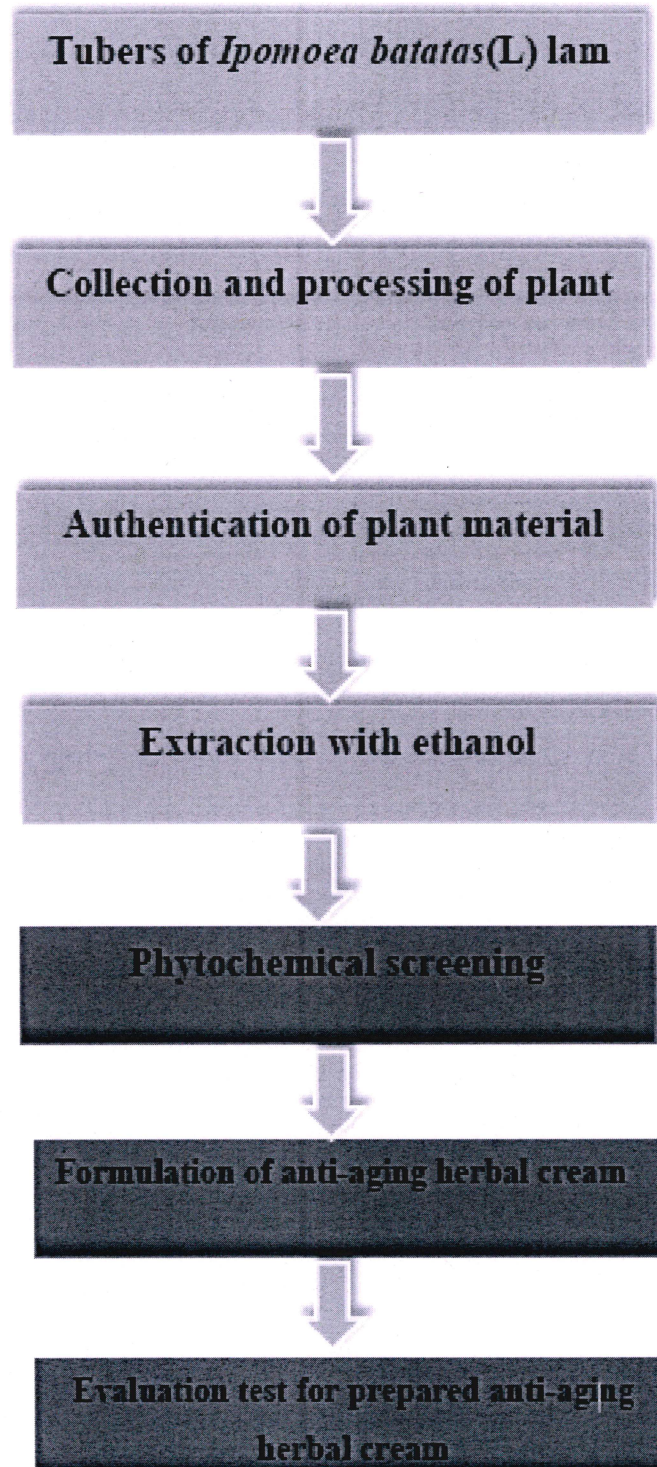
The anti-aging herbal cream is produced which does not cause any side effects or adverse reactions.

The anti-aging herbal cream also acts as a fairness expert in day to day life by removing aging signs. It also possesses nutritional value which provided required nutrients to the skin.




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PLAN OF WORK




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MATERIALS AND METHODS

PLANT COLLECTION:

The tuber of *Ipomoea batatas* (L) lam was collected from their natural habitats in Thanayakkan palayam Anthiyur. Erode District, Tamil Nadu. In the month of January 2022.

PLANT IDENTIFICATION:

The tuber of *Ipomoea batatas* (L) lam was authenticated by Professor P.Jayaraman Ph,D.Director, Institute of Herbal Botany Plant Anatomy Research Centre, West Tambaram, Chennai. Reg.No.of the Certificate:PARC/2022/4224.

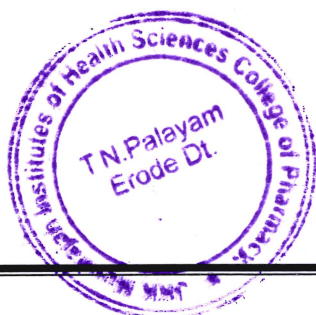
PREPARATION OF PLANT EXTRACT:

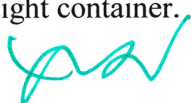
The powdered plant material (250g) was extracted by hot continuous soxhlet extraction method. The plant material was extracted with Ethanol (99.9% v/v) (500ml) for four days in a soxhlet apparatus.

It is a process of continuous extraction method in which the solvent (ethanol) can be circulated through the extractor for several times. The vapours from the solvent are taken to the condenser and the condensed liquid is returned to the extract for continuous extraction. The apparatus consist of body of extractor (thimble) attached with side siphon tube, lower end attached with distillation flask and the mouth of the extractor is fixed to the condenser by the standard joints.

PROCEDURE:

Weighed about 250g dried powdered plant and transferred into a thimble for packing. While packing, the content was wetted with Ethanol until the siphon tube was filled and pour the ethanol about 500ml in the round bottom flask which is attached to a soxhlet extractor and condenser. It is attached with a running tap water inlet and outlet for condensation process. A piece of porcelain was added into the round bottom flask to avoid bumping effect. After assembling the extractor, the plant material was extracted at about 70-85°C until the colour of the solution in the siphon tube became pale. The extracts obtained were dried at room temperature and the yield was stored in air tight container.




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RESULTS AND DISCUSSION

RESULTS:

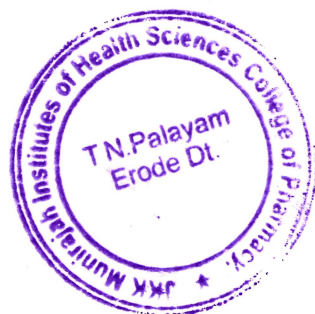
QUALITATIVE ANALYSIS FOR THE SCREENING OF PHYTOCHEMICAL CONSTITUENTS:


Ethanollic extract of tubers of Ipomoea batatas(L) lam was subjected to various chemical test for detection of phytoconstituents and results obtained are illustrated in table-4

Table:4, Phytochemical analysis of ethanollic extract of tubers of Ipomoea batatas(L) lam

S.No	Phytochemical test	Ethanollic extract
1	Alkaloids	+
2	Flavonoids	+
3	Tannins	+
4	Terpenoids	+
5	Polyphenols	++
6	Anthocyanin	++
7	Anthraquinones	+
8	Proteins	+
9	Sterols	+
10	Saponins	-
11	Mucilage	-
12	Carbohydrates	+

NOTE: (+) Present (-) Absent (++) High content




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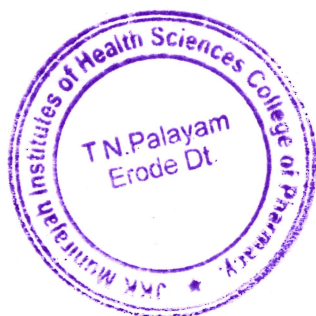
DISCUSSION

□ Herbal cosmetics are the preparation used to enhance the human appearance. A wide range of plants and plant derived product are used in folk medicine for the treatment of aging. Ipomoea batatas(L)lam tuber is an important source of Beta-carotene, Vitamin-C, Vitamin-A and potassium. They are also containing another source such as vitamins, minerals and powerful antioxidant.

□ The aim of the present research was to formulate the herbal cream of Ipomoea batatas (L)lam for the purpose of anti-aging treatment. The ethanolic extract of Ipomoea batatas (L) lam obtained inhibits aging which exhibits positive results for this research.

□ The present study is about the topical anti-aging which possess strong antioxidant property, which is responsible for the anti-aging activity. The anti-aging activity is due to the presence of chemical constituents such as Polyphenols and anthocyanin was confirmed in this research by performing preliminary phytochemical analysis of ethanolic extract of tubers on Ipomoea batatas (L)lam.

□ The prepared anti-aging cream of Ipomoea batatas (L) lam slow down the skin aging by regenerating and activating the cells and protect against ultraviolet rays.



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CONCLUSION

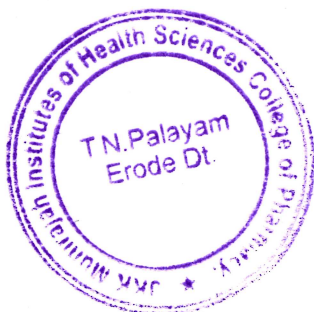
□ From the present study we conclude that the preliminary phytochemical analysis of Ipomoea batatas(L) lam contains proteins, polyphenols, alkaloids, anthocyanin and terpenoids. Most important active constituent of Ipomoea batatas(L) lam is anthocyanin and polyphenols. This phytoconstituents possess the antioxidant property which has the ability to reduce the development of aging or wrinkles on the skin.

□ Most of the herb is used in marketing as anti-aging cream. There is lot of herbal cream available in marketing for treating the anti-aging by using various herbs (like aloe vera, turmeric etc..) but the Ipomoea batatas (L) lam herbal cream are not available in any of the marketed products.

□ So we select Ipomoea batatas (L) lam for our research which will be very useful and important product which will play on eminent role in future endeavor, that is the relevant reason why we are selecting these Ipomoea batatas (L)lam as the main drug for our research.

□ The tubers of Ipomoea batatas (L) lam were extracted using ethanol. Results revealed the most of the extract exhibited good antioxidant effect. Formulation were performed and it is standardized by evaluating various physicochemical properties such as pH, spread ability, viscosity, homogeneity, stability studies, appearance in which they exhibited satisfactory characters.

□ Further studies can be carried put in future to enhance the novelty of this work by producing a very good marketing product which will be economical and as well as with less side effects.



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