



We care God cures

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PUSHPAGIRI PHARMA ECHO

The News Bulletin of
Pushpagiri College of Pharmacy

[Affiliated to KUHS, Thrissur and Approved by AICTE & PCI, New Delhi] Medicity Campus, Perumthuruthy P.O., Thiruvalla - 689 107

Our Vision

WE CARE, GOD CURES

Our Mission

To work towards a knowledge society with life in abundance through science and technology, improving health care for our immediate community, the state, the country and the world at large.

IN THIS ISSUE

- Institution at a glance
- Department Profile and activities
- Institutional activities
- Academic achievements
- Pharma articles
- Glimpses of College

Chairman's Message

From the Director

It gives me intense pleasure to know that Pushpagiri College of Pharmacy is bringing out the first edition of news bulletin-PHARMA ECHO this year. I take this opportunity to congratulate all the staff and students who have taken meticulous effort towards this endeavour.

With best wishes...

Fr. John Thomas Kandathinkal (Director)

From the Director of Academic

It is a matter of immense pleasure that this has turned out to be another new leaf in the history of Pushpagiri College of Pharmacy in publishing the first edition of news bulletin 'PHARMA ECHO'.

I congratulate all the supporting hands who have worked behind this venture. Let the unseen power shower his blessings upon this credible venture.

Prof. Dr. Lincy Joseph

From Principal's Desk

It is a matter of great joy for the Pushpagiri College of Pharmacy that the first edition of the news bulletin- PHARMA ECHO is being published. PCP has the vision of integral development of its students by inculcating knowledge, values, principles and leadership. We impart true education which will shape young minds to have successful career and a sense of fulfilment. I take this opportunity to congratulate all the devoted hands who worked behind this endeavour.

Prof. Dr. Mathew George (Principal)

Message from Editorial Advisory Board

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From Editors' Desk

The 'Pushpagiri Pharma echo 2012' is a memorabilia of each and every heartthrob of the Pushpagiri college of Pharmacy. This newsletter is lighting evidence that, our college provides platform for every student to burgeon their learning skills. On this prodigious moment, we take the heartiest pleasure in thanking, Fr. John Thomas Kandathinkal, who has been a cardinal initiator and Prof. Dr Mathew George, without whose support and guidance, this venture would not have moved at a pace to reach its goal. We also thank all other faculties, students and the pharma echo team members for their immense help and support. It is a peer reviewed bulletin, formulated as a tool to throw light on the successful milestones and accomplishments scaled by our institution. It is a delicate collection, portraying the zeitgeist that displayed intelligence, creativity, aspirations, artistic and literary talents and also serves to showcase the developments made in the field of Pharmacy. Invoking God's blessings upon this credible venture, we put forth the Pharma echo for your reading and kind reviews...

Mrs. Christy K. Jose (Dept. of Pharm. Chem.) Ms. Sunitha Thomas (Dept. of Pharmacology)



Institution at a Glance

Established in the year of 1998 at the hospital campus, it was later upgraded to a degree institution and moved to a new hi-tech campus, just three kilometers away from the main campus. Our vision of world-class education and research facilities in pharmaceutical sciences, the right sense of dedication and service to community, being never away from our sights, the college has succeeded in reaching the legacy of excellence. The indebtedness to the society in word and deed has accelerated this legacy, as the college move towards a new facility and increased output from the intellectual and academic programmes.

The challenge now is to bring all our constituent communities together to move the college to the “next level”. Faculty, staff and students all need to be engaged. The “next level” entails being part of the college’s goal of an advanced level in teaching, research and services to the community and the world beyond. Having a team of dedicated, competent and experienced faculty members who not only educate our students but also take personal care to shape them into good human beings, so as to come out with flying colours.

Through the Departments



Dept. of Pharmacology



Dept. of Pharmaceutical Analysis



Dept. of Pharmaceutical Chemistry



Dept. of Pharmacognosy



Dept. of Pharmaceutics



Dept. of Pharmaceutical Biotechnology



Dept. of Pharmacy Practice

INAUGURATION OF PHARM D

Doctorate of Pharmacy is a professional doctor degree in pharmacy. It is becoming a first professional degree and the prerequisite for licensing to exercise the profession of a pharmacist. As per the new amendments in India, the course should last six years comprising, five years of academics including projects and the final sixth year internship in any 500 bedded hospital or above. This clinically oriented program is now adjusted as one of the highly paid and highly reputed professions.

Pushpagiri College of Pharmacy, spearheaded with an efficient management and faculty commenced value based learning in the field of Pharm D which is an area gaining momentum into the main stream of opportunities. The inauguration of this course was held on 18th sept. 2012 by Prof. Dr. T K Ravi, the Principal of Sree Rama Krishna College of Pharmacy. Rev. Fr. Abraham Mulamoottil, chairman and CE of Pushpagiri group of institutions, Fr. John Thomas Kandathinkal, Director, Pushpagiri Medicity campus, Fr. Mathew Mazhavancheril, Academic and Research Director, Pushpagiri group of institutions and Prof. Dr. Mathew George, Principal, Pushpagiri College of Pharmacy presided over the function. The new batch was warmly welcomed by the faculty and the students of the college. The sophisticated infrastructure and highly validated educational reviews has supported this venture in coming true with flying colours. We, as a team, has scales new heights, fully fledged by attaining this milestone.



LAUNCHING OF DIC AND PATIENT COUNSELING CENTRE



Inaugural ceremony of DIC and patient counseling centre was conducted on 22nd January, 2013, Tuesday at 11.00 am. The program started with cutting of the ribbon at DIC located on fourth floor of the Pushpagiri Medical College hospital by Rev. Dr. Abraham Mulamoottil, CEO of Pushpagiri group of institutions. followed by lighting the lamp ceremony. Rev. Dr. Abraham Mulamoottil, Rev. Fr. John Thomas Kandathinkal, Director of Pushpagiri College of Pharmacy, and representatives of M.Pharm, Pharm. D, and final year B.Pharm were cordially invited to light the lamp. Prof. Dr. Mathew George, Principal, PCP, Physicians, Pharmacy



Staff, Teachers and Students of Pharmacy College were present during the inaugural ceremony. Rev. Dr. Abraham Mulamoottil delivered a short prayer followed by blessing of the new Drug Information and Patient Counseling Center situated near the outpatient department .

ANIMAL HOUSE

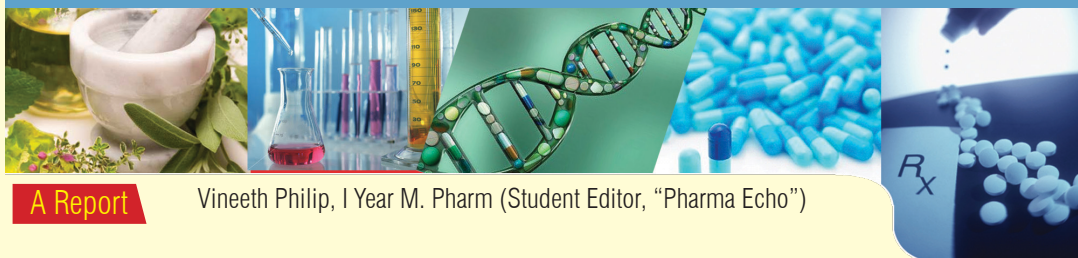


As a part of the PG upgradation the college, the Animal House was renovated and blessed on 4th Feb. 2013 by the Pushpagiri Medicity Director, Fr. John Thomas Kandathinkal, which will be further used for the PG and research purposes. College principal Prof Dr. Mathew George, faculties, non teaching staff and students attended the event.





PHARMA RADIANCE 2012



A Report

Vineeth Philip, I Year M. Pharm (Student Editor, "Pharma Echo")

GENERAL

Pushpagiri College of Pharmacy organized "Pharma Radiance 2012", a national seminar on "MEDICAL NEGLIGENCE AND EMERGING TRENDS IN PHARMA BIO-RESEARCH". The seminar was held on November 28, 2012, at Medicity campus, Tiruvalla.

The objective of the seminar was to furnish the faculties, students, and practicing registered pharmacists with the impact of medical negligence and emerging trends in pharmaceutical research. The seminar brought together experts, faculties and students from Pushpagiri college of pharmacy and other pharmacy colleges, and Registered Pharmacists to discuss and propose strategies about medical negligence and emerging trends in pharmaceutical bio-research.

The seminar discussed a wide range of issues pertaining to the act of medical negligence, societal relevance in scientific research, current trends in clinical research, importance of phytochemicals in human welfare,



Inauguration by Govt. Chief Whip Sri. P.C. George

good dispensing practice and problems relating to its implementation, as well as the proposals for new issues. Over 30 abstract papers, on different pharmacy related subjects were distributed to the participants. A poster presentation based on the abstract papers was also conducted. The seminar received press coverage and the discussions were reported by the "Malayala Manorama".

The seminar was systematized around 5 significant sessions, besides opening and closing sessions. The opening session was followed by substantive sessions in the seminar.

Sessions of the Seminar

Opening Session

A keynote speech at the opening session was delivered by Sri. P.C. George, Hon. Kerala Govt. Chief Whip. He released the abstract book by receiving a copy from Prof. Dr. Lincy Joseph, Organizing Secretary, PharmaRadiance 2012.



Eminent sessions were taken by Prof. Dr. Krishna Murthy Bhat, Prof. Dr. Ravindranath Shanbhag, Prof. Dr. Varughese George, and Shri. K.C. Ajith Kumar (President, Kerala State Pharmacy Council)

Social Relevance in Scientific Research by Prof. Dr. Ravindranath Shanbhag.

In this session, Prof. Dr. Ravindranath Shanbhag, Professor and Former Head of MCOPS, Manipal University, talked about the societal relevance in scientific research. He discussed the ethical aspect of controlled clinical trials and its purport on the society. He cited the aftermath of Endosulfan as an example to cement his findings. He concluded that the research will be significant only if it provides valuable output that launch health and the well-being of the society.

Impact of Medical Negligence by Prof. Dr. Ravindranath Shanbhag.

In his second session, Prof. Shanbhag delivered a speech on the act of medical negligence by medical professionals. He explained how a deviation from the accepted medical standard of care by a medical professional could result in medical negligence.



Current Trends in Clinical Research by Prof.Dr. Krishna Murthy Bhatt.

The speaker at this session was Prof. Dr. Krishna Murthy Bhatt, Professor and Head, Department of Pharmaceutical Quality Assurance, Manipal College of Pharmaceutical Sciences. In this session, he discussed the developments of clinical trials which happened in the last two decades and how these changes opened a new world of opportunities to pharmacists.

Importance of Phytochemicals in Human Welfare by Prof. Dr. Varughese George.

This session was addressed by Prof. Dr. Varughese George, Director, Amity Institute of Phytochemistry and Phytomedicine, Trivandrum. In his session, Prof. Dr. George explained scientific name and the medicinal importance of several plants including some commonly seen plants with the pictorial representation. He elucidated the pharmacological actions of the secondary metabolites which are obtained from plants and this knowledge was a great additive for the pharmacy students who study Pharmacognosy as well as for the faculties.

Good Dispensing Practice by Sri. K. C. Ajith Kumar.

Sri. K. C. Ajith Kumar, President, Kerala State Pharmacy Council addressed this session. He explained the role of pharmacists based on the pharmacy



Validictory Function by Sri. Anoop Jacob Minister for Civil Supplies

act of 1948 and the steps taken by Kerala State Pharmacy Council to control the practice of non-licensed personnel dispensing in pharmacies across the state based on the Pharmacy Act. He summarized the challenges for KSPC to prevent this practice.

Closing Session

The closing session was addressed by Hon. Minister for Civil Supplies, Sri. Anoop Jacob, who wished success to all participants, based on what had transpired during the Seminar.



George M, Joseph L, "Anti pyretic and anti diarrheal activity of *Geranium ocellatum* leaves extract" World Research Journal of Medicinal and Aromatic Plants, Volume 1, Issue 2, 2012, pp: 26-28

Mathew George, Lincy Joseph, Abhishika Sharma, Antide pressant and skeletal muscle relaxant effects of the aqueous extract of the *Prosopis cineraria* Braz J. Pharm. Sci. Vol. 48 no. 3 July/Sept 2012

RESEARCH ACTIVITIES

Mrs. Anitha Mary Mathews

Mr. Vinod B Synthesis And Anti Bacterial And Anti Fungal Activities Of Diphenylhydrantoin Carboxamides, Ijpbs, Jan 2013

Mr. K. Sujith *In-vitro* Anti Choliesterase Activity Of *Anacyclus pyrethum*, Pharmacognosy Journal, Dec 2012

Mrs. Christy K. Jose, Ms. Sunitha Thomas *In-vitro* antioxidant activity of ethyl acetate extract of *Ananas comosus* (pineapple) root *Inventi Rapid: Ethnopharmacology*, Vol. 2013 , issue 2, " *Inventi* : pep/775/13", Jan 2013

GUIDED PROJECTS

S.no	Project title	Guided by
1	Bioequivalence assessment of three different brands of glimepiride tablets	Dr. Mathew George Ph. D
2	Pharmacognostical, phytochemical characterization and pharmacological screening of spondias pinnata leaf	Dr. Lincy Joseph Ph. D
3	Effect of various ayurvedic formulation and medicinal plants on glucose adsorption capacity and glucose uptake by yeast cells - an in vitro study	Mr. Sujith k
4	Synthesis and antibacterial screening of some novel pyrazolines	Mr. Vinod b
5	A survey on the pattern of substance abuse of institutional therapy in cancer therapy	Mrs. Anitha mary mathews
6	Studies on preliminary phytochemical anti-oxidant and anti-inflammatory activity of pleurotus fluoride by in vitro methods	Mrs. Leena p n

PHARMACY WEEK



SEMINARS/ WORKSHOPS/ CONFERENCES ATTENDED

Prof. Dr. Mathew George

- Workshop cum seminar on "Alternatives to animal experiments". Venue: Govt. T.D Medical College, Alappuzha on September 25th, 2012.
- One day seminar on "Emerging trends and challenges in patient focused pharmacy education", Venue: Sri Ramakrishna Institute of Paramedical sciences on November 3rd, 2012.
- One day seminar cum continuing education. Venue: Indoor stadium, Thrissur on December 2nd -2012, Prof. Dr. Mathew George delivered invited lecture on "Fair Dispensing of Safe Medication".

Prof. Dr. Lincy Joseph

- Workshop cum seminar on "Alternatives to animal experiments". Venue: Govt. T.D. Medical College, Alappuzha on September 25th, 2012.
- One day seminar on "emerging trends and challenges in patient focused pharmacy education". Venue: Sri Ramakrishna institute of Paramedical Sciences on November 3rd, 2012.

Mr. Sujith K.

Workshop cum seminar on "alternatives to animal experiments", Venue: Govt. T.D medical college, Alappuzha on September 25th, 2012.

Mrs. Rani Sebastian

"Cancer therapy and prevention: Challenges ahead" on November 1st, 2012 at Macfast College auditorium, Thiruvalla.

Mrs. Anitha Mary Mathews & Mr. Vinod B.

One Day Symposium On Research Methodology:- Steps To Conduct A Clinical Research Study, June 23rd, 2012 at The Department of Community Medicine, PIMS, Thiruvalla

Sr. Nigitha

64th Indian Pharmaceutical Congress at Chennai on December 7th .

M Pharm Students

"Cancer therapy and prevention: Challenges ahead" on November 1st, 2012 at Macfast College auditorium, Thiruvalla.

Final year B Pharm Students

64th Indian Pharmaceutical Congress at Chennai on December 7th .

STUDENTS BRING LAURELS

Pharma Quiz Competition

Shyaleen rose Sebastian and Raina Gracy John entered the semi final in Pharma Quiz Competition at Amrita School of Pharmacy, Kochi.

Chanakya 2012

Raina Gracy John, Shyaleen Rose Sebastian bagged third in the Chanakya 2012 at Medical College, Kottayam. Sneha Mathew.

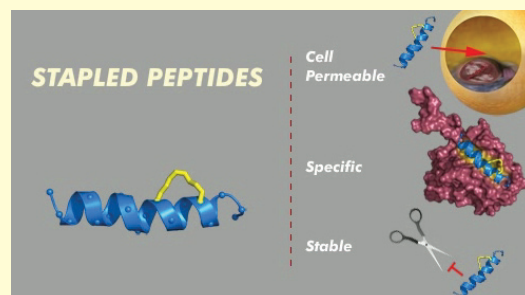
Merin C Puthoor and Sneha Mathew bagged third in the Chanakya 2012 at Medical College, Kottayam.

ROLE OF STAPLED PEPTIDES IN NOVEL DRUG DESIGN AND DEVELOPMENT

INTRODUCTION

Proteins that engage in intracellular interactions with other proteins are widely considered among the most biologically appealing yet chemically intractable targets for drug discovery. The critical interaction surfaces of these proteins typically lack the deep hydrophobic involutions that enable potent, selective targeting by small organic molecules, and their localization within the cell puts them beyond the reach of protein therapeutics. One type that has shown promise in early-stage studies is hydrocarbon-stapled alpha-helical peptides, a novel class of synthetic miniproteins locked into their bioactive alpha-helical fold through the site-specific introduction of a chemical brace, an all-hydrocarbon staple improving the pharmacologic performance of peptides, increasing their target affinity, proteolytic resistance, and serum half-life while conferring on them high levels of cell penetration through endocytic vesicle trafficking,

Peptides as a class have historically been relegated to a niche role in chemical genetics and drug discovery, owing to their poor binding affinity,



susceptibility to proteolytic degradation, rapid clearance by renal filtration, and ineffective cell penetration. Most of these problems trace their origins in one way or another to the high conformational instability of peptides, which introduces an energetic (entropic) penalty to binding of the target, renders the amide bonds vulnerable to proteolytic attack, decreases cell penetration by increasing backbone desolvation energy, and facilitates passage through glomerular pores that filter out polar molecules. is the subject of this article. The remarkable tendency of alpha-helical peptides to undergo conformational nucleation, indicated that conformational stabilization introduced in one small stretch of a peptide could migrate some distance along the polypeptide chain, perhaps stabilizing the entire structure. All efforts to design cell- penetrating alpha-helical miniproteins have employed helix stabilization and nucleation. Stapled Peptides could allow a wide range of proteins to be used in drug-targeting. They are currently used in clinical trials for the inhibition of a BCL-2 family protein, oncogene MCL-1, using an exclusive inhibitor, the MCL-1 BH3 helix, which could unblock caspase-dependent apoptosis in cancer cell.

This first generation of stapled peptides ranges from about 12 to 35 amino acids in length. Their sequences are substituted with a pair of non-natural amino acids, first synthesized by the Verdine group, featuring olefin-tipped hydrocarbon side chains. A catalyst acts as the stapler, merging the two double bonds on the side chains into one in a reaction known as olefin metathesis. Two key properties of stapled peptides are their resistance to protease enzymes and their ability to penetrate cells.

APPLICATIONS

CANCER TREATMENT

Studies indicate that modulating protein-protein interactions (PPIs) through peptides can have oncogenic benefits. Helical peptides are unsuitable for therapeutic use, due to inability to maintain a well

defined three dimensional structure, propensity to be cleaved by protease & difficulty in crossing the cellular membrane. All hydrocarbon synthetic modification, termed as staple will lock the peptide into the active α -helical conformation, circumventing the previous problems with α -helical peptides as drugs. This approach is a successful alternative to probe & manipulate PPIs and has opened the door to targets that were once thought undruggable. Stapled peptides work as treatments against disease by binding tightly to target proteins within cells, thus disrupting specific protein-protein interactions that regulate many biological processes, including response to stress, signaling within cells & cell death. The colon cancer stapled peptides inhibit activity of a protein called β -catenin that when present in a hyperactive form, causes cell to grow in an aggressive and uncontrolled way. When added to human colon cancer cells growing in laboratory cultures, the stapled peptides reduced the activity of beta-catenin by 50 percent which is sufficient to have a beneficial impact on the disease.

ASTHMA TREATMENT

Development of the first stapled cytokines shows promise for fighting asthma. The stapled cytokines moderate the activity of a cytokine which orchestrate the exchange of signals between cells called interleukin-13, which asthma patients produce in abnormally large amounts that contribute to asthma attacks. Thus hydrocarbon stapling of native peptides may provide a useful strategy for experimental and therapeutic modulation of protein-protein interactions in many signaling pathways.

HIV TREATMENT

HIV – protease is an enzyme made by the HIV virus that is essential for its life cycle. Without effective HIV-1 protease, HIV virions remain uninfecious. Because of its role in HIV replication, HIV-1 protease has been a target for antiviral drugs. Such drugs function as inhibitors, binding to the active site by mimicking the tetrahedral intermediates of its substrate,

thus disabling the enzyme. The binding affinity of a hydrocarbon stapled helical peptide, NYAD-1, for the capsid protein demonstrated its ability to penetrate the characterized cell membrane. The results of the structural analysis provide valuable insight into the determinants for high & selective inhibitors for HIV-1 particle assembly. Important targets for intervention include inhibiting the fusion of the virus at the surface of CD4T cells, reverse transcription of the viral RNA, and processing of the gag polyprotein by the HIV-1 protease. It is evident that CA plays an important role in HIV-1 assembly and maturation, and has been recognized as a potential target for developing a new generation of drugs for AIDS therapy. Mutation of the interface residues in the CTD monomer disrupts dimer formation impairs CA assembly and abolishes virus infectivity. The CTD therefore plays an important role in viral assembly and maturation and is a potential target for developing a new class of anti-HIV-1 drugs. Protein-protein interactions play a key role in a range of biological processes such as antigen-antibody interaction, viral assembly, programmed cell death, cell differentiation and signal transduction. Therefore, controlling these vast arrays of interactions offers opportunities for developing novel therapeutic agents.

SUMMARY

The ability of stapled peptides to inhibit intracellular protein-protein interactions that have previously been intractable to inhibition with traditional small molecule or protein-based therapeutics suggests that they may define a novel therapeutic modality. There is still much to learn regarding the development of stapled peptides as potent and specific inhibitors of protein-protein interactions, but each new report of their successful application provides information vital to the continued development of these unique molecules. It is hoped that the information contained here will increase the accessibility of stapled peptides and provides researchers with the tools to confidently employ this technology to tackle the most daunting therapeutic targets.

Our Family

"It is the Quality of our work which pleases God and not the Quantity"



a tribute...

We, with one heart, forward this as a tribute to our former Directors, former Principals, former staff, aluminis and all those unseen hands who have worked tirelessly and prayed fervently behind the success of this institution.

Dear Alumini

We take this opportunity to invite all our ex-students to join our Alumini Association and share their experiences and motivate others to emulate their path of success.

You can send your details along with photograph through email at pushpagiripharmacycollege@gmail.com

Glimpses of the College



Onam
2012



Ayalum njagalum thammil



Fresher's Day



Independence Day

Horizon 2012



Christmas 2012