



**RAMAIAH
UNIVERSITY**
OF APPLIED SCIENCES

Faculty of Pharmacy

Panpharmacon

A Quarterly E-Newsletter



2nd Anniversary Edition

Faculty of Pharmacy

Ramaiah University of Applied Sciences

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Bengaluru, Karnataka 560054

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*Celebrating Two Years of
Spreading Knowledge*



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(1922-1997)
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*Celebrating 100 Years of
Karmayogi*



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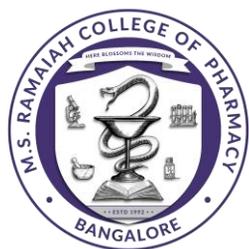
ज्ञानं विज्ञानं च भक्तिसहितं
jnanam vijnanam cha bhaktisहितam
devotion to enlightenment

Ramaiah Group of Institutions has over 61 years of legacy of nurturing talents in the field of education and healthcare. Ramaiah University of Applied Sciences (RUAS) established in 2013, is an offshoot of this great premise, which has a stronghold of over 5000 small and medium enterprise's built a legacy of a group of institutions that focuses on student-centric higher education and preparing them to meet future challenges through experiential learning with industry 4.0 infrastructure and one is gearing the implementation of NEP 2020. The technology campus is housed amidst the industrial hub at Peenya, Bengaluru.



Celebrating

M. S. Ramaiah College of Pharmacy



1992

2022



RAMAIAH
UNIVERSITY
OF APPLIED SCIENCES

Faculty of Pharmacy

Faculty of Pharmacy

Glorious Years

The Faculty of Pharmacy (FPH), formerly M. S. Ramaiah College of Pharmacy, was established in 1992. The Faculty of Pharmacy, ranked 62nd in the AIR-NIRF 2022, is a leading pharmacy institute with 30 years of legacy. It imparts outcome based pharmaceutical education to meet our country's growing demands of well-trained healthcare professionals. The faculty offers 4-year undergraduate programme - Bachelor of Pharmacy (B. Pharm), 2-year Postgraduate programme - Master of Pharmacy (M. Pharm) in Pharmacognosy, Pharmaceutical Chemistry, Pharmaceutics, Pharmacology, and Pharmacy Practice, 6-year Doctor of Pharmacy (Pharm D) and Doctoral research programme (Ph.D.).



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Editor's Note

Hello Readers !!!

It is a great pleasure to share the 2nd Anniversary Edition of Panpharmacon. This issue is close to our heart as we introduce to you **Panpharmacon Student Club**. Apart from covering conventional informative scientific write ups, the issue also features Mind Lab – a brain storming section, I encourage the readers to participate in it. I would like to congratulate the winners of Mind Lab of previous edition & personally thank Dr. Subeesh K Viswam, Mr. Dipanjan Karati and Mr. Folitartha Roy for their contribution for this issue. I also convey heartfelt thanks to all other contributors for having put their thoughts and experiences into an engaging read.

For any queries, suggestions, feedback or submission of articles, please do not hesitate to contact our team via fphpanpharmacon@gmail.com. We would love to hear from you and elevate the quality of the newsletter to serve you better. Happy reading !!!



Dr. J. Anbu

Editor-Panpharmacon

Acknowledgement

Team Panpharmacon is very much thankful to RUAS management for providing a wonderful platform to explore and utilise our knowledge and skills. We wish to thank our Hon'ble Vice-Chancellor, Pro-Vice Chancellors for their patronage and advising us on the importance of enhancing the visibility of workplace that stimulated us to come out with Panpharmacon, an E – Newsletter. We also thank all our colleagues, well wishers, student concilium and friends for supporting us in making this newsletter.



CONTENTS



- ❖ **The Haunting of Cancer Cells**
- ❖ **A Novel Bisphosphonate for the Treatment of Periodontitis**
- ❖ **Psychedelic Effects of Ayahuasca**
- ❖ **How Long Should We Wait with a Wrong Drug to Know If It's Wrong?**
- ❖ **Memantine Against Alzheimer's**
- ❖ **Echo  – Voice of Alumni – Hydration & Heart**
- ❖ **Imprint  – Padma Bhushan Dr. Bishnuprada Mukerjee**
- ❖ **Installation of Panpharmacon Student Club**
- ❖ **Past Events – Never Stop Learning**
- ❖ **Upcoming Event**
- ❖ **Mind lab **
- ❖ **Achievements & Recent Research Publications**

Cancer is one of the leading causes of death in the world. About 10 million people died from cancer in 2020. A new clinical study at Memorial Sloan Kettering Cancer Center (MSK) that enrolled patients for a clinical trial to treat rectal cancer with an immunotherapy regimen has generated a lot of attention.

This ongoing medical trial in the United States is currently seen as a revolutionary start in the field of rectal cancer since a group of 12 rectal cancer patients who participated in the experiment showed no indication of a tumour after receiving an antibody treatment for six months.

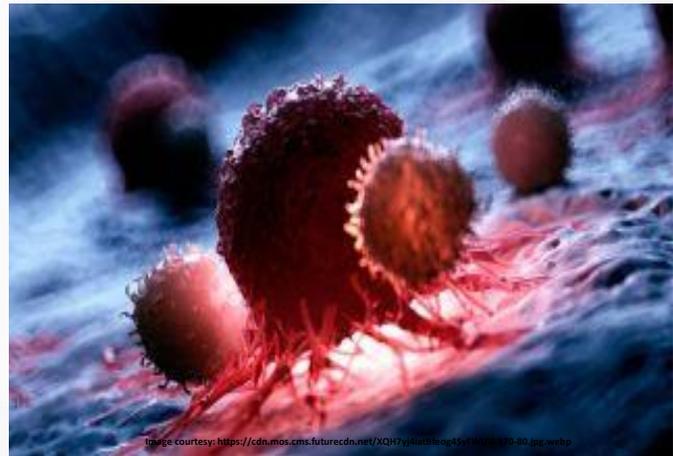
For the first time, the MSK clinical study looked at whether immunotherapy alone might fight rectal cancer that had not progressed to other organs in a sample of patients with a specific genetic mutation in their tumours.

In every case, immunotherapy eliminated rectal cancer without the need for conventional treatments like chemotherapy, radiation therapy, or surgery. In the two years after their cancer-free status, none of the patients experienced a cancer relapse.

What is Rectal Cancer?

Rectal cancer is a type of cancer that develops in the bottom region of the digestive tract, close to the anal canal. Before migrating to distant organs and becoming a metastatic/advanced disease, it typically spreads to the lymph nodes that surround it, indicating that it is a locally progressed malignancy.

Rectal cancer is typically discovered in advanced stages since many people mistake it for piles. Surgery, radiation and chemotherapy are the gold standard treatments for locally advanced cancer. However, typical pharmacological therapies are expensive and have undesirable outcomes.



Tesaro's work on Dostarlimab

Dostarlimab, a monoclonal antibody sold under the brand name Jemperli, is employed to treat endometrial cancer, was created by Tesaro, a Massachusetts-based biotech business that was purchased by GlaxoSmithKline in 2019.

The FDA authorised dostarlimab-gxly (Jemperli) on August 17, 2021, for adult patients with mismatch repair deficient recurrent or advanced solid tumors that have progressed on or following previous therapy and who have no appropriate alternative therapeutic alternatives.

Dostarlimab has been approved in patients with deficient mismatch repair endometrial cancer after demonstrating clinically meaningful antitumor activity, with an objective response rate of 42.3%, a disease control rate of 57.7%, and a safety profile consistent with that of approved anti-PD-1 drugs

Rectal Cancer Remission

According to reports, 18 participants in the clinical trials received Dostarlimab every three weeks for six months and physicians discovered that their cancer had vanished after more than a year. While the experiment is still small, the results are promising; the research was published in *The New England Journal of Medicine* and was presented at the united states' largest assembly of clinical oncologists on June 2022.

Dr Luis Alberto Diaz, Jr., principal investigator and a medical oncologist at Memorial Sloan Kettering (MSK) Cancer Centre said that "I believe this is the first time this has happened in the history of cancer," he also pointed it is the first cancer trial in which every patient entered remission.

This research experiment might pave the way for future treatments for different types of cancer. "It's the tip of the iceberg," stated Dr. Luis Alberto Diaz, Medical Oncologist, Memorial Sloan Kettering Cancer Center (MSK), as the experiment proceeds. He clarifies, "We're looking into if this approach may assist with other malignancies where therapies are typically life-threatening.

The study is fairly small, therefore further research is required to confirm the findings. Even so, it is encouraging news for cancer patients all over the world.

REFERENCES:

Sanoff, H. K., 2022. Improving treatment approaches for rectal cancer. *The New England Journal of Medicine*, 386, pp. 2425-2426.

Oaknin, A., Tinker, A.V., Gilbert, L., Samouëlian, V., Mathews, C., Brown, J., Barretina-Ginesta, M.P., Moreno, V., Gravina, A., Abdeddaim, C. and Banerjee, S., 2020. Clinical activity and safety of the anti-programmed death 1 monoclonal antibody dostarlimab for patients with recurrent or advanced mismatch repair-deficient endometrial cancer: a nonrandomized phase 1 clinical trial. *JAMA oncology*, 6(11), pp.1766-1772.



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M.Pharm

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Periodontitis, also called gum disease or per-e-o-don-TIE-tis, is a serious gum infection that involves the formation of bacterial biofilms triggering inflammatory response, if left untreated. The latter is responsible for most of the periodontal tissue deterioration. TRK-530 is being investigated as a potential periodontitis treatment.

Periodontitis causes alveolar bone resorption, which is a primary component of periodontal damage. The goal of new periodontitis treatment techniques is to manage and adjust the host's response to bacterial assault. Bisphosphonates (BPs) are antiresorptive drugs that have been shown to slow the resorption of alveolar bone, this opens up novel therapy to use BPs in periodontal treatment, and it can be concluded that BPs can reduce bone resorption both *in vitro* and *in vivo*.

Osteoclastic bone resorption can be prevented by the pyrophosphate analogues known as BPs. These substances are used to treat metabolic bone disorders that are characterised by significant bone loss.

BISPHOSPHONATES: CHEMISTRY AND MODE OF ACTION

BPs are synthetic compounds that resemble inorganic pyrophosphates in structure. Pyrophosphates are endogenous bone mineralisation regulators that can be found naturally in blood serum and can chelate calcium and regulate the process of bone mineralisation. Because of their calcium chelating capabilities, BPs are resistant to enzymatic and chemical destruction, and they have an affinity for the mineral phase of the bone.

There have been three generations of BPs so far. The first generation of BPs (etidronate) have alkyl side chains, the second generation (alendronate)



Image courtesy: <https://www.semanticscholar.org/paper/Bisphosphonates-treatment-and-orthodontic-Ghoneima-Allan/a15b662f962511c60d97a8eaad6c2b57f8f2/figure/3>

have amino-BPs with an amino-terminal side chain, and the third generation (zoledronate) contains a cyclic side chain.

HUMAN STUDIES:

In human trials, all available evidence shows that systemic injection of BPs, in combination to mechanical debridement, provides a greater benefit than mechanical debridement alone. The decrease of alveolar bone loss and the preservation of alveolar bone height are the key advantages. On the area of clinical parameters, some studies found no substantial benefit, while others found that BPs aided periodontal healing, including the reduction of probing pocket depth and tooth.

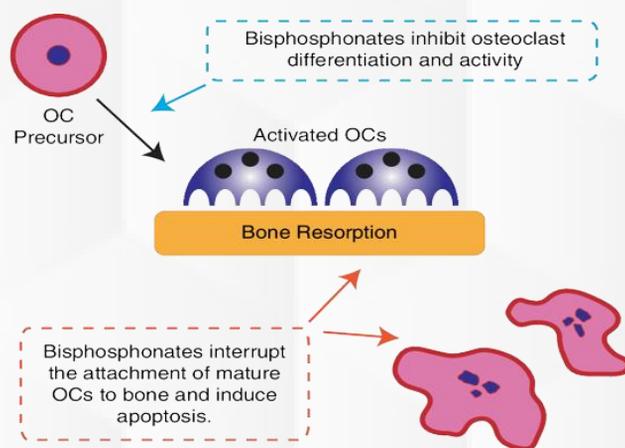


Image courtesy: <https://www.hindawi.com/journals/bmri/2022/5832099/fig2/>

Bisphosphonates are preferentially incorporated into sites of active bone remodelling, as commonly occurs in conditions characterized by accelerated skeletal turnover. Bisphosphonate not retained in the skeleton is rapidly cleared from the circulation by renal excretion.

CONCLUSIONS:

The use of BPs in periodontal research offers a promising technique of managing periodontal disorders by changing the host response, based on current knowledge of BPs. Research articles published reveals that BPs prevent or at least decreases alveolar bone loss when compared to control participants.

Even though human studies have proven that BPs improve periodontal treatment outcomes, there is a lack of data on the best prescription concentration and formulation. Besides, a variance in the effects, periodontal healing is detected when the patients prescribed with family of BPs are changed. TRK-530, a novel BP that combines anti-inflammatory and bone-resorption-inhibitory characteristics, appears to be promising.

REFERENCES:

Williams, D.W., Ho, K., Lenon, A., Kim, S., Kim, T., Gwack, Y. and Kim, R.H., 2022. Long-term ligature-induced periodontitis exacerbates development of bisphosphonate-related osteonecrosis of the jaw in mice. *Journal of Bone and Mineral Research*, 37(7), pp.1400-1410.

Kishimoto, H., Noguchi, K. and Takaoka, K., 2019. Novel Insight into the Management of Bisphosphonate-related Osteonecrosis of the Jaw. *Japanese Dental Science Review*, 55(1), pp.95-102.

Russell RG, Muhlbauer RC, Bisaz S, Williams DA, Fleisch H. 1970. The influence of pyrophosphate, condensed phosphates, phosphonates and other phosphate compounds on the dissolution of hydroxyapatite in vitro and on bone resorption induced by parathyroid hormone in tissue culture and in thyroparathyroidectomised rats. *Calcif Tissue Res*, 6(3), pp.183–196.



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PSYCHEDELIC EFFECTS OF AYAHUASCA



The consumption of **Ayahuasca** – **psychotropic plant** is expanding at an astounding level across the world, and it is the subject of rising biomedical research.

Ayahuasca has been introduced into folk medicine and spiritual therapy after being utilized primarily by indigenous shamans in numerous South American nations for spirit communion, mystical experiences, healing, and religious rites.

A traditional Amazonian psychoactive decoction derived from the stem bark of the Banisteriopsis caapi vine, which is high in beta-carboline harmala alkaloids and is combined with the leaves of the Psychotria viridis bush, which contains N,N-dimethyltryptamine (DMT).

DMT is a serotonin-like hallucinogen and 5-HT_{2A} receptor agonist. Research on ayahuasca has revealed that it can be used as a therapy for addictions, depression, and anxiety, as well as several other prospective medical purposes. Since it is a psychedelic drug, it causes a brief altered state of consciousness marked by vision, and auditory changes.

The most common effects of ayahuasca are as following:

- Feelings of euphoria
- Hallucinations
- Fear
- Paranoia
- Gastrointestinal symptoms.

From the 1400s to 1532, the Inca is the largest empire ever seen in South America. A study found the first archeological evidence that the Incas used ayahuasca. Incas gave ayahuasca to children selected for ritual sacrifice to reduce their anxiety.

The “vine of the soul” or “vine of death” as it is known in South America, contains a combination of monoamine oxidase inhibitors and N,N-dimethyltryptamine.

Brain health

Anecdotal data suggests an antidepressant effect of ayahuasca. The major hallucinogenic components of ayahuasca, DMT and beta-carbolines, may protect and restore regions of the brain. According to research, consuming DMT can increase the production of antistress and antioxidant proteins.

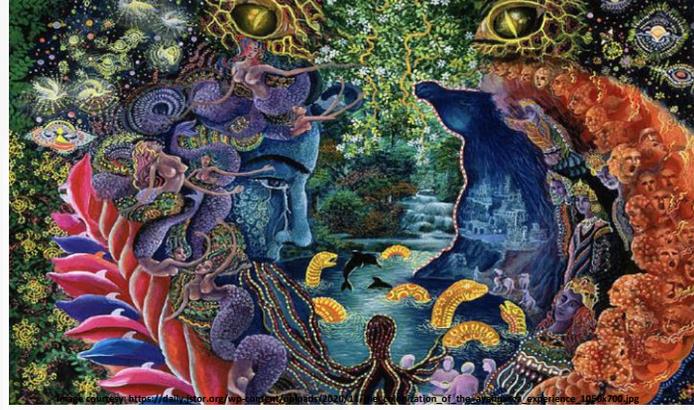
A 2017 research from trusted source in mice suggests that harmine, the major beta-carboline in ayahuasca, may have neuroprotective and cognitive-enhancing benefits due its anti-inflammatory and oxidative stress. The pharmacology of beta-carbolines has been linked to therapeutic benefits in depression and anxiety. Inhibition of MOA is a treatment strategy for these disorders. MAO inhibition is seen in all three main beta-carbolines, harmol, harmalol, and tetrahydroharmol. However, further research is needed to validate these findings in humans.

Mindfulness

An euphoric experience in a spiritual realm, encounters with spirits, hallucinations, altered sense of time, experiencing powerful emotions.

Post-Traumatic Stress Disorder (PTSD)

A study published in 2018 suggests that ayahuasca may be therapeutically effective for PTSD. It aids in the recall of repressed memories, allowing the brain to reprogram or eliminate the associated fear reaction.



Addiction

According to various studies, ayahuasca may also be useful for those suffering from drug abuse. Regular ayahuasca users have reported reduced usage of alcohol, cocaine, and other addictive substances.

Conclusion

Ayahuasca has an ancient legacy of ceremonial usage, and its current global expansion offers a once-in-a-lifetime chance to investigate its influence on human health. Preliminary data on possible psychological pathways involved with therapeutic effects show parallel to mindfulness-based therapies.

It can be hypothesized that the ayahuasca-induced state might be beneficial for therapy of trauma, drug addiction, obsessive impulsive disorders, and some individuals with borderline personality disorder.

REFERENCES:

Uthaug, M.V., Mason, N.L., Toennes, S.W., Reckweg, J.T., de Sousa Fernandes Perna, E.B., Kuypers, K.P.C., van Oorsouw, K., Riba, J. and Ramaekers, J.G., 2021. A placebo-controlled study of the effects of ayahuasca, set and setting on mental health of participants in ayahuasca group retreats. *Psychopharmacology*, 238(7), pp.1899-1910.

Domínguez-Clavé, E., Soler, J., Elices, M., Pascual, J.C., Álvarez, E., de la Fuente Revenga, M., Friedlander, P., Feilding, A. and Riba, J., 2016. Ayahuasca: Pharmacology, neuroscience and therapeutic potential. *Brain research bulletin*, 126, pp.89-101.



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HOW LONG SHOULD WE WAIT WITH A WRONG DRUG TO KNOW IF IT'S WRONG?



"Your Kani is Mr Kuttan, so the exam will be easy". I can still clearly recall the day I heard the word "schizophrenia" when I was getting ready for my arithmetic exam (The Malayalam word "Kani" refers to the first person we see when we wake up or encounter after leaving the house). By seeing my petrified face, my mom added, "mentally challenged people will bring good luck, don't worry". Out of curiosity, I asked, "why is he like this?". Mom said, "he is sick, and won't respond to any treatment". Mr Kuttan was a nightmare for me ever since that day, not the exams. Now I know, he was a case of schizophrenia, socially isolated, out of the house, and half-naked. But to improve their day, folks preferred to picture him as "Kani".

We used to believe that his presence on the first day of a month will bring good fortune to the remainder of the month and that he will be fed lunch on that day as well, so he would ask everyone, "What day is today?". It's unusual and unfortunate, I know! But that's what we achieved: a 100% literate, employed, well above the poverty line community.

Days quickly passed, and like many other schizophrenia patients, he committed suicide. Now I'm curious about the source of good fortune in our village. Imagining, "What if it happened to me? What if it occurs to my loved ones? made me worry about the condition. I had believed, like a lot of other students, that I would eventually find a medication to treat schizophrenia.

Soon after the lunch break in my third-year B.Pharm pharmacology class, I was not in the mood to continue playing "BINGO" as usual for some reason. My companions were preoccupied with their own lives while the teacher aggressively engaged the class, and the few others were just listening. I felt like I was the only one who wasn't sure what I should do. So, I decided to pay heed to

It is very challenging to predict which medication will be effective for which patient and that the patient should be treated for two months to find the right medication

what was being taught.

"Anti-psychotics.....typical anti-psychotics....atypical anti-psychotics.....novel drugs....", the blackboard was full of drugs and as usual I did a deep dive into my thoughts. My thoughts were consumed by our beloved Kuttan and my ambition to discover a medication that could treat schizophrenia until the teacher interrupted me by asking what I was dreaming about.

The whole class including the pupils who had just finished playing "BINGO" were staring at me as if I had committed some sin. To save my face I said, "I was wondering, there are so many drugs available but I have not seen anyone who got cured of schizophrenia".

The teacher acknowledged my concern and spent about ten minutes answering my questions. However, in those ten minutes, I learned that it is very challenging to predict which medication will be effective for which patient and that the patient should be treated for two months to find the right medication. I sat there contemplating how to deal with the aforementioned problem as the class progressed on that topic and thanks for the heavy lunch which sang a lullaby for my thoughts.

Days flew by, and I decided to pursue a PhD after completing my B. Pharm and M.Pharm degrees. It was my 6th protocol which was rejected, and it left me devastated and depressed. I decided to contact

a psychiatrist buddy and get some sleeping pills. I was utterly let down because all he offered was a tonne of counselling and no sleeping aids. While leaving, he comforted me by saying, "When you want something, the whole universe conspires to help you achieve it." Alchemist, I muttered to myself, and I left.

The lack of sleep, loneliness, poor eating practices, and stress were taking their toll on my body and mind, and I was beginning to feel lightheaded. The panel words continued playing in my ears as I waited in the hospital lounge and performed some introspective thinking.... "novelty", "Why you ought to do it?", "What literature gap are you addressing here?", "What is your contribution to society?", "What day is today!!!". The person seated next to me in the waiting room posed the final query. Once more, he questioned what day it was and I must say, I felt déjà vu!! He made me think of Mr Kuttan.

I rushed to my friend and asked him about that patient. He explained that the schizophrenic patient was on 'risperidone-5 mg' for 8 weeks, and on seeing no improvement, he was planning to switch to 'olanzapine regimen'. Moreover, the previous regimen seemed to have side effects on him. I was startled and asked him, "So you treated him for 8 weeks with a drug that didn't assist him and with the same drug he got all side effects?" He got offended and said, "I would have changed the medicine if the Almighty had shown up during the first or second week of treatment and instructed me to. I am a psychiatrist, not an astrologer, so I can't predict the future. "What if we can predict?" I asked him, "then you will be assisting numerous psychiatrists and rescuing suffering patients", he replied.

An in-depth literature review made things clearer to me. The threshold for categorizing the patient as early responders was ranging from 1-8 weeks in different studies. The switch point between an unsuccessful drug to a new drug was seldom

discussed. The most challenging aspect of any therapy, medication adherence, was highly influenced by adverse events.

I felt more responsible and confident in selecting this topic. I cleared my 7th protocol, this time with appreciation from the panel. Maybe the people from my village were right. Mr Kuttan brought me a fortune in the form of a good research question, which we discussed years back in pharmacology class. "How early we can predict patient's responsiveness/ non-responsiveness so that we can reduce their exposure to a wrong drug by switching to a new regimen?".

We formulated a single-blinded longitudinal, four-point follow-up study with first-episode schizophrenia patients treated with risperidone or olanzapine. To forecast the response at week 8, we sought to pinpoint a time (far before week 8). My journey with schizophrenia patients started with a bit of apprehension. I was scared of them; because I believed they may attack me.

When I spoke to the study's first participant, a young research scholar from one of India's most esteemed institutions, all of my concerns subsided! It was a revelation for me since I had believed—or been told by the media—that schizophrenia entails being ill and violent constantly. He immediately consented to take part in my research when I told him about it. I realized that my study participants are very much normal most of the time, but when they slip their minds, the fall is much deeper than us!

The wait is over, my doctoral defence went well and soon we can implement the guideline that we formulated and published. Now we can predict the response of risperidone in 2 weeks and olanzapine in 4 weeks. But now I am thinking about genetic variability that might lead to a diverse response in the study population. Let's do one more PhD and answer that question.

Today I am not scared of patients with schizophrenia because I know it is just like any other disease and the management strategies are advancing rapidly. I will be dedicating my thesis to all those specially-abled people. I hope my findings will bring fortune to them. After all, they also deserve “fortunes”! I also want to thank my wife Mrs. Gouri Nair for her encouragement and help in getting me to write this research tale.



Dr. Subeesh K Viswam
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About Subeesh K Viswam

Dr Subeesh K Viswam completed his M.Pharm in Pharmacy Practice from Sri Ramakrishna Institute of Paramedical Sciences, Coimbatore and his Ph.D. from M.S Ramaiah University of Applied Sciences, Bengaluru. He started his career as an Assistant Professor in the Department of Pharmacy Practice at the Faculty of Pharmacy, M.S Ramaiah University of Applied Sciences, Bengaluru.

He has also worked as a Senior Associate- Scientific Writer at Indigene Private Limited and further as an Assistant Professor at Manipal College of Pharmaceutical Sciences. He currently works for Cactus Communication as a scientific writer. He is a recipient of multiple travel grants from the International Society of Pharmacoepidemiology and the Asian Conference on Pharmacoepidemiology. He has also received various awards for the podium as well as spotlight presentations in the same.



Alzheimer's disease (AD) is the most common type of dementia and is a neuro-degenerative condition whose aetiology is indistinct. The cells of the brain are affected due to Alzheimer's disease resulting in intellectual functioning being lessened.

Loss of memory, senile dementia, intra-neuronal neurofibrillary tangle formation, and cerebral parenchyma deposition of the beta-amyloid protein in the form of amyloid plaques are the domino effects of Alzheimer's disease. It is principally caused by several factors like an aggregation of the abnormal amyloid beta protein, the hyperphosphorylation of tau protein, impairment of the cholinergic system etc.

Adamantane's and Alzheimer's Disease

Memantine (1-amino-3, 5-dimethyladamanantate) an adamantane derivative is a low-affinity N-methyl-D-aspartate receptors (NMDARs) antagonist that the FDA has approved for the treatment of AD patients. Memantine can inhibit the overactivity of the glutaminergic system in the central nervous system, which can prevent neurotoxicity. Eli Lilly *et al*, first synthesized Memantine which was patented in 1968. Memantine is currently used to treat individuals who cannot tolerate anti-choline esterase.

Pathway of Memantine

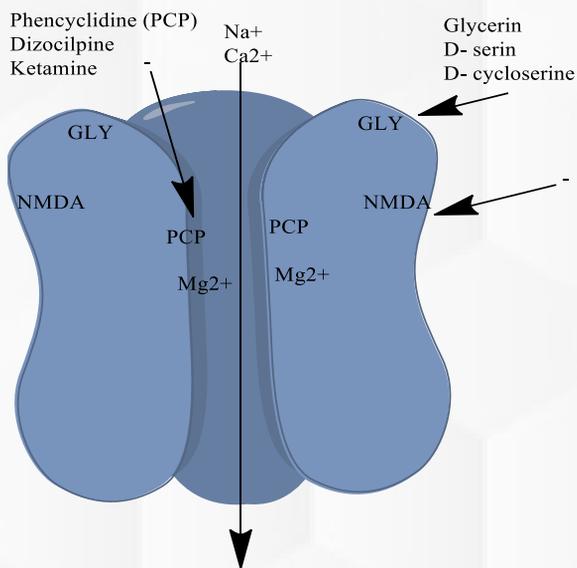
A class of L-glutamate receptors called NMDARs is essential for spatial memory and plays a significant role in learning and memory. NMDARs are essential for synaptic transmission and the synaptic plasticity that is thought to trigger learning and memory. It is still unclear, however, whether a loss in NMDA receptors causes a specific decline in memory function. According to Zhang *et al*. overactivation of NMDARs outside of the synapse results in loss of mitochondrial membrane potential and cell death, whereas synaptic NMDARs are neuroprotective.

Memantine lowers the glutamate activity in the CNS by uncompetitive antagonism and control the excessive stimulation of glutamate. It is categorised as an uncompetitive antagonist since it requires glutamate to first activate the NMDA receptor to access the receptor's binding sites. Moreover, Memantine has been demonstrated to inhibit DNA breakage, neurite retraction, neuronal necrosis, and disruption of axonal transport trafficking. Also, Memantine protects neurons by reducing tau phosphorylation but is unable to reduce the extracellular glutamate levels that are increased by the action of amyloid β peptide.

Memantine was first synthesized in 1968 as an anti-diabetic agent, but it was ineffective at lowering blood sugar. Later it was discovered to have CNS activity, Memantine was first marketed for dementia in 1989 under the name Axura



Memantine with the help of an IC_{50} of $3\mu M$ inhibits NMDA-receptor-mediated currents and has a high therapeutic index, whereas the expression of LTP (long-term potentiation) is suppressed at a much higher concentration with an IC_{50} of $11.6\mu M$



Representation of binding process of several NMDA receptor antagonists

Memantine medication is cost-effective in patients with moderate to severe AD when compared to untreated. Memantine is safe and effective when used alone or in combination with the AChEs donepezil to slow the advancement of cognitive, functional, and overall outcomes in patients with moderate to severe AD.

Blanco-Silvente stated that Memantine has a very low efficacy on AD symptomatology and its safety profile is equivalent to placebo. He also specified that lack of improvement after memantine treatment cessation points to a questionable risk-benefit connection. On the other hand, Yang *et al*, reported that Memantine increased the risk of somnolence, weight gain, disorientation, hypertension, nervous system disorders, and falls but had no significant effect on cessation due to serious side effects.

REFERENCES:

Stazi, M. and Wirths, O., 2021. Chronic memantine treatment ameliorates behavioral deficits, neuron loss, and impaired neurogenesis in a model of Alzheimer's disease. *Molecular neurobiology*, 58(1), pp.204-216.

Phelps, E.B. and Swantek, S., 2022. Memantine for Alzheimer's Disease: An Updated Systematic Review and Meta-analysis. *Essential Reviews in Geriatric Psychiatry*, pp.355-359.

Zhang, Y., Li, P., Feng, J. and Wu, M., 2016. Dysfunction of NMDA receptors in Alzheimer's disease. *Neurological Sciences*, 37(7), pp.1039-1047.



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About Dipanjan Karati

Mr. Dipanjan Karati has completed B.Pharm from NSHM Knowledge Campus and M.Pharm from Bharti Vidyapeeth University in the year of 2019, and 2021 respectively.

He is specialized in Medicinal Chemistry & published several review as well as full text research articles in peer reviewed national & international journals.

The human body requires sufficient amount of electrolytes & fluid for its proper functioning and maintenance. Maintaining the hydration of body has a vital role in the regulation of core body temperature, proper nutrients supply to the cells and functioning of vital organs. Being well hydrated also enhances our sleep quality.

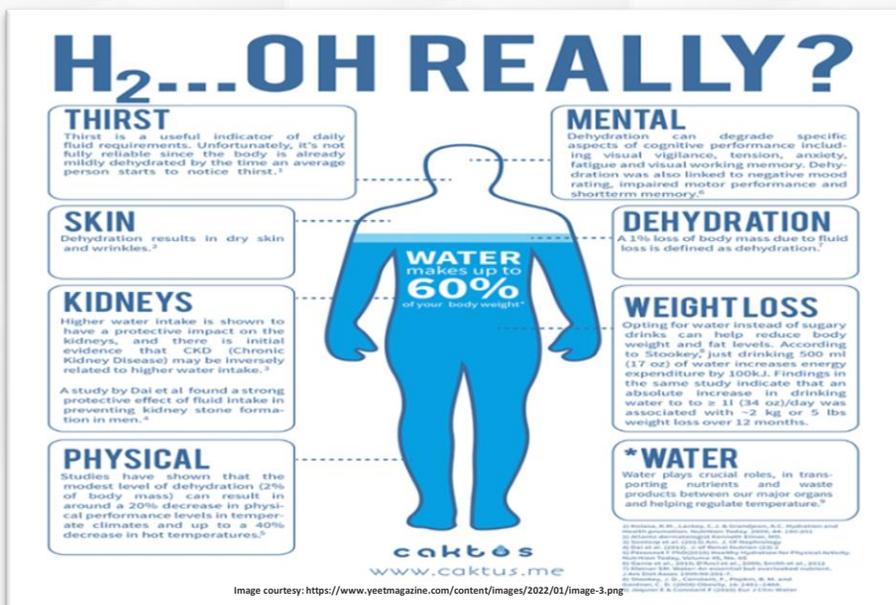
According to the European Heart Journal, it is suggested that sufficient amount of fluid intake not only cares essential body working and also helps to reduce the risk severity of heart problems. Cardiac failure is one of the chronic conditions which develops when the heart does not pump sufficient blood for the body's need and it was observed that more than 2% of the American population experienced the cardiac attack of different severity.

In the Laboratory of Cardiovascular Regenerative Medicine at the National Heart, Lung and Blood Institute, Natalia Dmitrieva - a researcher said that similar ways to care our heart and prevent long-term risk associated with heart are the reduced salt intake, drinking adequate amount of water.

Human brain is composed of 95% water, lungs are 90%, blood is 83%, muscles are 76%, and bones are 22% water. These percentages are rigorous proof of the importance of H₂O in our bodies to maintain favourable health.

After conducting preclinical research, a linked connection was established between dehydration and cardiac fibrosis which relates to the hardening of the cardiac muscles. Participants with free of obesity, diabetes and heart failure with normal range of hydration levels were focused initially. Many clinical measures were followed to check the potential hydration levels.

As the body's fluid level decreases, the serum sodium level increases is found to be useful in recognizing the subjects developing heart failure with an increased risk. The prevention and regression within heart leading to failure may be prevented by good hydration.



H₂...OH REALLY?

THIRST
Thirst is a useful indicator of daily fluid requirements. Unfortunately, it's not fully reliable since the body is already mildly dehydrated by the time an average person starts to notice thirst.¹

SKIN
Dehydration results in dry skin and wrinkles.²

KIDNEYS
Higher water intake is shown to have a protective impact on the kidneys, and there is initial evidence that CKD (Chronic Kidney Disease) may be inversely related to higher water intake.³
A study by Dai et al found a strong protective effect of fluid intake in preventing kidney stone formation in men.⁴

PHYSICAL
Studies have shown that the modest level of dehydration (2% of body mass) can result in around a 20% decrease in physical performance levels in temperate climates and up to a 40% decrease in hot temperatures.⁵

MENTAL
Dehydration can degrade specific aspects of cognitive performance including visual vigilance, tension, anxiety, fatigue and visual working memory. Dehydration was also linked to negative mood rating, impaired motor performance and short-term memory.⁶

DEHYDRATION
A 1% loss of body mass due to fluid loss is defined as dehydration.⁷

WEIGHT LOSS
Opting for water instead of sugary drinks can help reduce body weight and fat levels. According to "Stookey", just drinking 500 ml (17 oz) of water increases energy expenditure by 100kJ. Findings in the same study indicate that an absolute increase in drinking water to to \approx 1l (34 oz)/day was associated with \approx 2 kg or 5 lbs weight loss over 12 months.⁸

***WATER**
Water plays crucial roles, in transporting nutrients and waste products between our major organs and helping regulate temperature.⁹

WATER makes up to 60% of your body weight

caktus
www.caktus.me

1. American Dietetic Association. (2002). Dehydration. Retrieved from https://www.eatright.org/health/weight-loss/weight-loss-101/weight-loss-101-101.aspx
2. American Dietetic Association. (2002). Dehydration. Retrieved from https://www.eatright.org/health/weight-loss/weight-loss-101/weight-loss-101-101.aspx
3. American Dietetic Association. (2002). Dehydration. Retrieved from https://www.eatright.org/health/weight-loss/weight-loss-101/weight-loss-101-101.aspx
4. American Dietetic Association. (2002). Dehydration. Retrieved from https://www.eatright.org/health/weight-loss/weight-loss-101/weight-loss-101-101.aspx
5. American Dietetic Association. (2002). Dehydration. Retrieved from https://www.eatright.org/health/weight-loss/weight-loss-101/weight-loss-101-101.aspx
6. American Dietetic Association. (2002). Dehydration. Retrieved from https://www.eatright.org/health/weight-loss/weight-loss-101/weight-loss-101-101.aspx
7. American Dietetic Association. (2002). Dehydration. Retrieved from https://www.eatright.org/health/weight-loss/weight-loss-101/weight-loss-101-101.aspx
8. American Dietetic Association. (2002). Dehydration. Retrieved from https://www.eatright.org/health/weight-loss/weight-loss-101/weight-loss-101-101.aspx
9. American Dietetic Association. (2002). Dehydration. Retrieved from https://www.eatright.org/health/weight-loss/weight-loss-101/weight-loss-101-101.aspx

Image courtesy: <https://www.yeetmagazine.com/content/Images/2022/01/Image-3.png>

Fluid intake and serum sodium can simply be measured in medical assessments and benefit doctors to recognize patients who may benefit from learning about ways to stay hydrated. Body functioning such as heart pumping blood, blood vessel functions and orchestrating circulation is based on the fluid intake. The normal range of daily fluid intake was found to be 2-3 litres for men and 1.5-2.1 litres for women according to the researcher's suggestion.

REFERENCES:

Dmitrieva, N.I., Liu, D., Wu, C.O. and Boehm, M., 2022. Middle Age Serum Sodium Levels in The Upper Part of Normal Range and Risk of Heart Failure. *European Heart Journal*, 43(35), pp.3335-3348.

RM, M.G., Al, J.O., Lorenzo-Mora, A.M. and Bermejo, L.M., 2022. Importance of hydration in cardiovascular health and cognitive function. *Nutricion Hospitalaria*, 39(3), pp.17-20.

BENEFITS OF DRINKING WATER

WATER IS YOUR FRIEND

BODY 70% WATER

BOOST BRAIN POWER

HELP YOUR LUNGS

HELP YOUR STOMACH

HEALTHY HEART

BOOST ENERGY

BLOOD NORMALIZER

GOOD MOOD

HEALTHY SKIN

Image courtesy: <https://punchng.com/hydration-may-reduce-long-term-risks-of-heart-failure-report/>



Mr. Folitartha Roy
Drug Safety Associate
Novo Nordisk

About Folitartha Roy

Mr. Folitartha Roy completed his B.Pharm from T. John College of Pharmacy & Master's program in the Department of Pharmacology from the Faculty of Pharmacy, RUAS in the academic year 2021. His research interest includes drug repurposing for Myocardial Infarction and Antiplatelet Aggregation Activity.

PADMA BHUSHAN DR. BISHNUPADA MUKERJEE



The Indian Pharmacologist, Bishnupada Mukerjee (1903-1979) is notable for his obligations in the fields of pharmacological review and standardization of medications in India. The Government of India regarded him in 1962, with the honour of Padma Shri, the fourth most noteworthy Indian civilian award for his administrations to the country.

Bishnupada Mukerjee was born on first March 1903 at Barrackpore in the North 24 Parganas of West Bengal. He did his primary education at Barrackpore town school and Kolkata. He completed his Intermediate from Scottish Church College, Kolkata. In the University of Calcutta he joined the Calcutta Medical College to get Bachelor of Medicine and he stood out first in pharmacology, maternity care and Gynecology in 1927."

Mukerjee started his profession under Green-Armytage at Eden Hospital for an extensive time frame and moved to Calcutta School of Tropical Medicine, where he worked under Sir Ram Nath Chopra who persuaded Mukerjee to go to research field by leaving his clinical practice. In 1930, he

took up the post of an associate secretary to the Drug Enquiry Commission and aided the commission in setting up a report leading to drug standardization and control.

From 1931 to 1933, he worked at the Calcutta School of Tropical Medicine on the topic 'local drugs'. Lateron, he got a fellowship from the Rockefeller Foundation for Research on Traditional Medications in China, America and Japan. He moved to Peking Union Medical College where he worked under famous pharmacologist, H. B. Van Dyke. In 1936, he got Doctor of Science from University of Michigan, the first doctoral certificate conceded by the school in pharmacology.

Mukerjee continued with his investigations at the University of London under Joshua Harold Burn, at the National Institute for Medical Research, Hampstead under Sir Henry Dale and at the University of Munich under Geheimrat W. Straub. In 1937, he returned to India with Ram Nath Chopra and joined at All India Institute of Hygiene and Public Health in their recently framed Biochemical Standardization Laboratory and was appointed as Supervisor of the association in 1941

at Kolkata and later at Kasauli.

In 1947, he was designated as the supervisor of Central Drugs Laboratory and put forth the possibility of a restrictive lab for drug research. CSIR took it up further to expand as Central Drug Research Institute (CDRI), Lucknow. Mukerjee worked at CDRI till 1963 and moved to Chittaranjan National Cancer Research Center, Kolkata as chief till in 1968. He worked as a scientist at the Department of Biochemistry of the University of Calcutta and as an expert to the Kolkata office of the Ford Foundation during his post retirement period .

Bishnupada Mukerjee's commitments covered the areas of pharmacology, toxicology, endocrinology, physiology, chemotherapy other than his administrative responsibilities. He was credited with attempts in the standardization of prescriptions by introducing current conventions of regular standardization and tests. His undertakings are also known for setting up control measures for controlling the medication foundations.

The Central Drug Research Institute at Lucknow was his brainchild and the association helped in progressing pharmacological investigation in India. He was instrumental in the underpinning of such associations like Indian Brain Research Association, Indian Biophysical Society and Indian Association for Biological Sciences as well as numerous investigation labs. His responsibilities provoked the hand out of Indian Pharmaceutical Codex. He was the manager of the board which distributed the second arrival of Indian Pharmacopeia in 1966.

His investigational work with Ram Nath Chopra drew out the important papers on Sarpagandha (*Rauwolfia serpentina*) and its clinical significance. His assessment on the supportive potential of *Alstonia scholaris*, *Caesalpinia bonducella* and snake poison are evident. His investigation on posterior pituitary hormones and their effects on liver fat helped to begin an assessment

Council for Scientific and Industrial Research through CDRI has instituted an annual lecture, Dr. Bishnupada Mukerjee Memorial Lecture, in honour of the scientist. The Government of India awarded him Padma Bhushan, the third highest Indian civilian award, in 1971

programming at School of Medicine, Toronto University, that figured out the lipotropic exercises of choline, betaine and methionine. He investigated on dextrorotatory hydrocupridine auxiliaries, anterior pituitary concentrates and cyanide poisoning. He brought up procedures for concluding the prothrombin time, for prolongation of insulin influence and for natural standardization of liver concentrates. His assessment revelations were dispersed by means of 300 investigational papers in reputed journals.

Mukerjee performed his duties as board secretary at the Indian Science Congress Association (ISCA) from 1946 to 1952 and dealt with the 49th Congress in 1962. He was a council member in foreign secretary and vice president of the Indian National Science Academy for various residencies.

He managed the Indian Pharmaceutical Association and Indian Pharmaceutical Congress Association and was a part in the expert committee on International Pharmacopeia of the World Health Organization. He was a member for the 1st Pharmacy Council of India when it was established in 1949 and also a member in few government boards of trustees and sub panels connected with general wellbeing. He passed away at 76 of age, on 30 July 1979.



Central Drug Research Institute(CDRI), Lucknow

- He was a fellow member in few science foundations and establishments like Asiatic Society, American Pharmaceutical Association Society of Pharmacognosy, American Society for Pharmacology and Experimental Therapeutics, Physiological Society of India, Institution of Chemists (India) and Indian Pharmaceutical Association.
- Central Drug Research Institute through The Council for Scientific and Industrial Research has organized a yearly talk “Dr.Bishnupada Mukerjee Memorial Lecture”, to pay tribute to the researcher.

Rewards

- In 1938 Mukerjee was honoured with the Griffith Memorial Prize and the Nilmony Brahmachari Gold Medal of the University of Calcutta.
- In 1940, Indian Science Congress Association awarded him with Asutosh Mukerjee Memorial Award and in 1943 he was chosen as a member of Indian National Science Academy.
- In 1951 he was awarded with The Indian Science Congress Medal followed by Barclay Medal of the Asiatic Society in 1954.
- In 1962, the Government of India granted him the civilian award of Padma Shri.
- He was also a beneficiary of the Squibb International Award from Bristol-Myers Squibb in 1962.
- From the Institution of Chemists (India) in 1963 he was awarded with H. K. Sen Memorial Medal and from Indian Pharmaceutical Association in 1976 he was given Acharya P. C. Beam Medal.
- The Indian National Science Academy regarded him with Shree Dhanwantari Medal in 1976.

Timeline

- **1903** – Born in West Bengal, India.
- **1927** – MBBS in Calcutta Medical College.
- **1930** – Assistant secretary in Drug Enquiry Commission, India.
- **1931** – Worked at Calcutta School of Tropical Medicine Calcutta Ballygunge, West Bengal, India.
- **1936** – Doctor of Science, from Michigan University, Michigan, United States to pursue.
- **1941** – Director in Central Drug Research Institute Lucknow, Uttar Pradesh, India.
- **1947** – Director in Central Drug Laboratory
- **1949** – Member in Pharmacy Council of India.
- **1952** – Retired from Indian Science Congress Association
- **1963** – Served at Central Drug Research Institute (CDRI), Lucknow
- **1966** – Manager for 2nd edition of Indian Pharmacopeia.
- **1968** – Director at Chittaranjan National Cancer Research Centre Kolkata, West Bengal, India.
- **1968** – Consultant at Kolkata office of the Ford Foundation, Kolkata, West Bengal, India.
- **1979** – Died on July 30, aged 76.

REFERENCE:

Dhawan, B.N., 2010. History of pharmacy in India & related aspects: Medico – pharmaceutical professionals. *Indian Journal of Medical Research*, 132(6), p.748.



PANPHARMACON STUDENT CLUB



Aspire !! Achieve !! Inspire !!



Panpharmacon Student Club is an extended student wing of Department of Pharmacology, Faculty of Pharmacy, RUAS. The club is named after quarterly E – newsletter of the Department Panpharmacon & was conceptualized with a vision to support and encourage students to thrive beyond academics. Club primarily focuses on three domains: **Education, Research & Social Service**. The Club was installed on 15 August 2022, 75th Independence of India – Azadi Ka Amrit Mahotsav. Installation ceremony had gracious presence of Dr. S. Bharath, Prof. M. Narayana Babu, Prof. B.V. Basavaraj, Prof. R. Deveswaran, Dr. Sundara Saravanan, Dr. Harish Kumar D R, Dr. Ashoka Babu, Dr. Parasuraman P, Dr. Dhrubojyoti Mukherjee. Club is spear headed & maintained solely by students which marks its uniqueness.





CLUB OFFICE BEARERS

Aspire !! Achieve !! Inspire !!



Sameerana H R
President



Girish H L
Vice President



Rajenderaa S
Secretary



Choekyila L
Joint Secretary



Shashank S K
Treasurer



Vismaya Achutha
Director - Events



Aditi H S
Director - Events



Nihal G S
Director
Outreach Programs



Md. Furquan
Director
Virtual Learning



Shreeraksha H S
Director
Alumni Affairs



Sharath S H
Director
Alumni Affairs



Dr. Manisha Devi
Director
Outreach Programs



Akhilesh Vatti
Director
Social Media & Public
Relations



Govardhan K R
Director
Social Media & Public
Relations



Shannon D A
Director
Awards & Achievements



Feminine Hygiene Awareness – 15th August 2022

As a part of community service Panpharmacon Club collaborated with Niine – A leading brand in menstrual and feminine hygiene. This was the first activity post charter installation. Club office bearers educated under privileged community on menstrual health and distributed sanitary napkins. Team also visited an orphanage and spent quality time with children celebrating 75th Independence of India.

World Blood Donor Day – 14th June 2022

Panpharmacon Club took part in World Blood Donor Day, 14th June 2022 and volunteered for blood donation drive organized by NSS RUAS in association with Ramaiah Memorial Hospital. Over 10 units of blood was collected from eligible club members. Club members also pledged to be Stem Cell donors for the sufferers of blood cancer in association with DKMS-BMST Foundation India.



World Environment Day – 5th June 2022

As we celebrate the 100 years birth anniversary of Founder Chairman Karmayogi Dr. M. S. Ramaiah. Panpharmacon Student Club joined hands with Adama Chethana Foundation (ACF) and planted 100 saplings commemorating centennial birth anniversary of Karmayogi on 5th June 2022, also observed as the World Environment day.





EVENTS & CELEBRATIONS



INTERNATIONAL YOGA DAY- 21st June 2022

Team Panpharmacon volunteered in 8th International Yoga Day on 21st June 2022 celebrated by NSS RUAS. Dr. G Gangadharan, Director – Ramaiah Indic Specialty Ayurveda Restoration Hospital enlightened participants on Yoga for well being. Followed by Dr. S. N. Omkar, Chief Research Scientist – Control and Guidance, IISc, demonstrated Yoga.



Har Ghar Tiranga Rally – Azadi Ka Amrit Mahotsav – 15th August 2022

Panpharmacon club participated in Har Ghar Tiranga Rally on the occasion of 75th Independence of India – Azadi Ka Amrit Mahotsav. Club members sold National flag to households, shop keepers & work spaces in and around mathikere vicinity.





EVENTS & CELEBRATIONS



Ganesha Chaturthi & Onam Celebrations 8th September 2022

Team Panpharmacon celebrated Ganesha chaturthi and Onam in department on 8th September 2022. Pookolam was created at the entrance of the department to welcome visitors. Club members savoured onam sadhya and distributed prasadam.



Annual Exemplary Student Award

Panpharmacon club members received "Annual Exemplary Student Award" for stellar performance in co-curricular and extra curricular categories.

From Left to Right
Mr. Harsha, Ms. Evangelene, Mr. Abhilash



World Heart Day E-Quiz Winners

Panpharmacon club members Ms. Harshita Gond & Ms. Liya Biju bagged award in E-Quiz competition during World Heart Day celebration (Theme: Use Heart for Every Heart) on 29th September 2022 organized by Ramaiah International Centre for Public Health Innovations in association with NSS – RUAS, Dept. of Cardiology, Ramaiah Medical College, Ramaiah College of Physiotherapy and Department of Allied Health Sciences, Faculty of Life and Allied Health Sciences. E-quiz on heart health was attempted by over 140 participants.

NEVER STOP LEARNING

Image courtesy: <https://coaching4good.com/wp-content/uploads/2018/07/leaders-never-stop-learning.jpg>



WEBINARS

Watch Us On
You Tube

https://www.youtube.com/channel/UC0a59KlSiloDPmcNDL_U_tw

Department of Pharmacology, FPH, RUAS believes in supporting students and pharma fraternity with sharing knowledge and information apart from regular curriculum. Following were the webinars conducted by the department.

IMPACT OF PCOS ON WOMEN'S LIFE

By Dr. Arun K Soni
Associate Professor & Head
Department of Pharmacology
SSR College of Pharmacy, Silvassa

ENHANCING PATIENT SAFETY WITH PHARMACOGENOMICS

By Dr. Deepak Shankarappa
Director
Medical Scientific Unit, Global Patient Safety and Pharmacovigilance
Teva India Pvt Ltd.

RESEARCH & ENTREPRENEURSHIP IN PHARMACY: THE JOURNEY

By Dr. Ajit Singh
Co-founder & CEO
CliMed Research Solutions – India

LET'S TALK BOLD

Awareness on Menstrual and Feminine Hygiene

By Dr. Riya Mittal
Floren – India



UPCOMING EVENT

Panpharmacon Student Club Presents Webinar on

Understanding the Mechanisms Involved in Cardiac Dysfunction following Myocardial Ischemia - LAD Induced Murine Model

Webinar Highlight

Acute or chronic myocardial infarction (MI) are cardiovascular events resulting in high morbidity and mortality. Establishing the pathological mechanisms at work during MI and developing effective therapeutic approaches requires methodology to reproducibly simulate the clinical incidence and reflect the pathophysiological changes associated with MI. Here, we describe a surgical method to induce MI in mouse models that can be used for short-term ischemia-reperfusion (I/R) injury as well as permanent ligation. The major advantage of this method is to facilitate location of the left anterior descending artery (LAD) to allow for accurate ligation of this artery to induce ischemia in the left ventricle of the mouse heart. Accurate positioning of the ligature on the LAD increases reproducibility of infarct size and thus produces more reliable results. Greater precision in placement of the ligature will improve the standard surgical approaches to simulate MI in mice, thus reducing the number of experimental animals necessary for statistically relevant studies and improving our understanding of the mechanisms producing cardiac dysfunction following MI. This mouse model of MI is also useful for the preclinical testing of myocardial damage following MI



Speaker

Dr. M. Mohamed Shabi
Professor & Head
Department of Pharmacology
Ikon Pharmacy College



15/October/ 2022



11:00 AM – 12:30 PM IST

Event Registration Link
[Microsoft Teams](#)



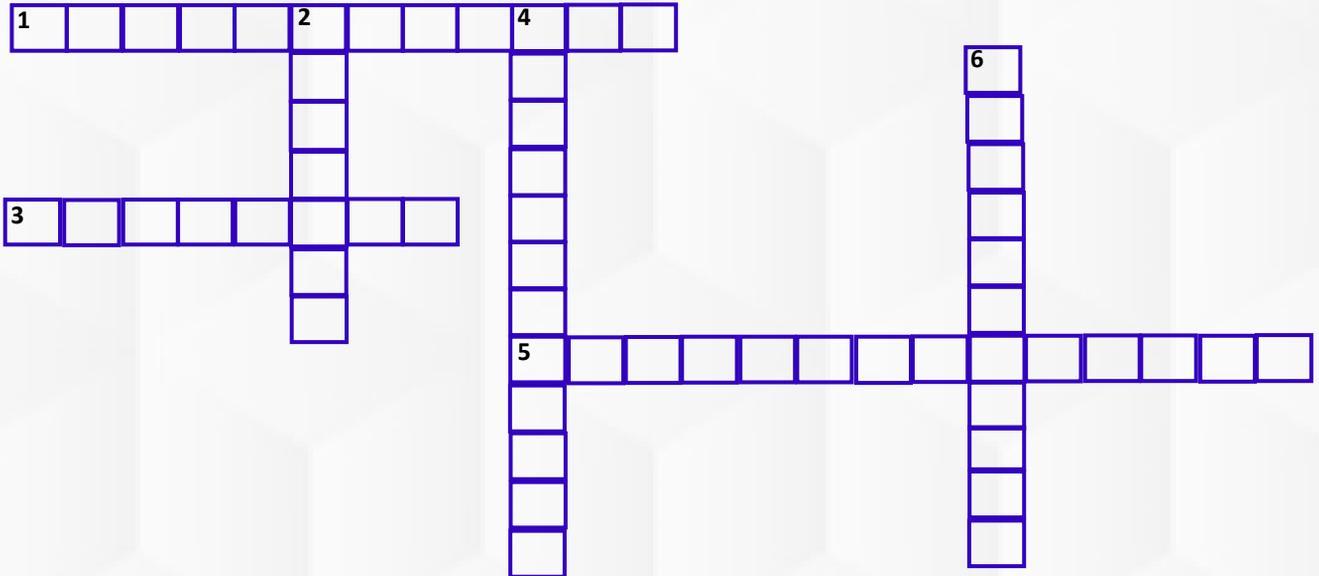
E-Certificate will be provided
for participants



Mind Lab



Solve the Crossword



Across

1. I am an anticancer drug also used for rheumatoid arthritis
3. I am a popular drink which was invented by a pharmacist
5. Food drug interaction of MAO inhibitors

Down

2. Congenital malformation causing intellectual disabilities
4. I can facilitate absorption of oral iron preparation
6. This drug will cause a risk blood dyscrasias

Terms and conditions

- Mind lab – III consists of **Two** segments, Solved answers to be mailed to fphpanpharmacon@gmail.com on or before **15-November-2022**
- It is mandatory to answer both segments to be eligible for availing the prize
- One Winner will be selected by lot system & Editorial board – Panpharmacon reserves all the rights
- Winner details will be announced in the upcoming issue
- Participation is restricted for Indian nationals only



Find the word

T A B V Y U A B A P N A M
B P O P B P C I B I N G O
N A R I S I T A P A V A O
P R A I C N P B B T E P T
S E J I T M C E V M O R O
A C N M M N N E I O H I G
Z O U B B U O P N V S T I
V E O E V B D L R I I I V
E S M A I I S P M R V N E
R I E T X E E C I O J I P
G A Z T S V M I C R L B S
K I A C A B H T A C N O R
R R T E R L I V A Z H R N

Terlivaz, Mounjaro, Cibingo, Spevigo, Omlonti

Winner – Mind Lab V



Varsha Thammshetty

B.Pharm

**Faculty of Pharmacy,
Ramaiah University of Applied Sciences**



ACHIEVEMENTS & RECENT RESEARCH PUBLICATIONS



ACHIEVEMENTS

- ❖ **Dr. Kesha M Desai**, received full waiver on virtual registration charges under oral presentation Virtually for the research entitled “Drug Repositioning for Myocardial Infarction: Computational and Pharmacological Approach” in the “3rd Edition of Cardiology World Conference (Hybrid Event) - Cardio-2022, Paris, France” scheduled during September 14-15, 2022.
- ❖ **Ms. Gouri Nair** received International travel grant (\$1800) for presenting research entitled “Target Fishing and Drug Repurposing for Pancreatic Ductal Adenocarcinoma: An Integrated Bioinformatic and Computational Approach” at 38th International Society for Pharmacoepidemiology and Therapeutic Risk Management (ISPE-2022), Copenhagen, Denmark.
- ❖ **Ms. Gouri Nair** received **ANDREW McAFEE AWARD** for the category - Best Abstract by a researcher from a developing country at the 38th International Society for Pharmacoepidemiology and Therapeutic Risk Management (ISPE-2022) on August 28th 2022 held at Copenhagen, Denmark.
- ❖ **Dr. R. Deveswaran, Dr. J Anbu, Kavitha B** awarded with Indian Patent pertaining to the Invention entitled “**Bandage for Sustained Drug Delivery**”, Patent number: **404047**.
- ❖ **Dr. Manisha Devi** gave an oral presentation on the topic 'Identification of Lead Moiety to Treat Polycystic Ovarian Syndrome from Ganoderma lucidum: A Computational Approach' in an international conference on "Materials and biological researches (ICMBR-2022) organised by Dr. R.K.S. College of arts and science, Kallakurichi.
- ❖ **Dr. Manisha Devi** participated in the 3rd international workshop "computational tools in drug design CTDD" organised by department of pharmaceutical chemistry, faculty of pharmacy, Ramaiah University of Applied Sciences, Bengaluru.



PUBLICATIONS

- ❖ **Gouthami B, Desai Kesha.,** (2022). Review on Major Biochemical and pathways involved in Addiction . *Zeichen Journal.*, 8 (5), pp. 216-224.
- ❖ Ravishankar M., **Nair G.,** Nair A., Daniel J. M., **Haroon H. B.,** Rishav K. J., Gr P., (2022). Hemidesmus indicus var. Pubescens root ameliorates Dextran Sodium Sulfate-induced ethanol augmented Ulcerative Colitis in Rats. *Indian Journal of Pharmaceutical Education and Research.*, 56 (3s), pp. s487-s495.
- ❖ **Gouthami B, Desai Kesha.,** (2022). Review on Neurobiology and Psychiatric Aspect of Depression and its Newer Treatment. *Zeichen Journal.*, 8 (5), pp. 209-215.
- ❖ Aina MS., Nishi P., Venkumahanti C., V Marise LP., **Nair G.,** Viswam S., (2022). Drugs-associated with Red man syndrome: An integrative approach using disproportionality analysis and pharmip. *Journal of Clinical Pharmacy and Therapeutics.* doi: 10.1111/jcpt.13716. Epub ahead of print.
- ❖ Ramya K., **Jayaraman A.,** Moushami B., **Damodar NA.,** 2022.Toxicological Evaluation of fucoidan, a polysaccharide isolated from *Turbinaria conoides*(J .agardh) Kutzing procured from mandapam coastal area, Tamilnadu. *Journal of Medical Pharmaceutical and Allied Sciences.*, 11(2) pp 4629-4635.
- ❖ Palanichamy, C., Pavadai, P., Panneerselvam, T., Arunachalam, S., Babkiewicz, E., Ram Kumar Pandian, S., Shanmugampillai Jeyarajaguru, K., **Nayak Ammunje, D.,** Kannan, S., Chandrasekaran, J. and Sundar, K., 2022. Aphrodisiac Performance of Bioactive Compounds from *Mimosa pudica* Linn.: In Silico Molecular Docking and Dynamics Simulation Approach. *Molecules*, 27(12), p.3799.

The Ramaiah Group, through our Trusts, Gokula Education Foundation (set up in 1963) and Gokula Education Foundation – Medical (set up in 1979), focus on

Healthcare & Education

we seek to move our society towards greater harmony and inclusiveness



Feel Free to Contact



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