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School of Pharmacy Newsletter

Volume 3, Issue 1, January-March 2024

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MESSAGE FROM EDITOR-IN-CHIEF

We are pleased to share the First issue of Third volume (January- March 2024) of the School of Pharmacy (SPH) quarterly newsletter. This newsletter provides an insight into the recent activities and achievements of SPH. It also highlights the trainings held for SPH faculty under faculty development program. Industry Academia Linkages presents research collaboration initiative with Vaccine Research Institute (VRI) and (Foot and Mouth Disease Research Center (FMDRC) and signing of MOU with Evercare Hospital. The student corner showcases the community pharmacy activities conducted by SPH students. Health corner includes awareness about healthy eating during Ramadan
I hope you will enjoy this issue thoroughly.

Dr Ejaz Ullah Cheema
Founding Dean SPH

News in Brief

- UMT School of Pharmacy is pleased to share the excellent achievment of two SPH students Ms. Javeria Rasheed and Mr. Muhammad Maaz Imran from 6th semester in successfully securing the prestigious and highly competitive Global UGRAD scholarship (Spring 2025 semester) .
- SPH has published 2nd issue of CPR (Currents in Pharmaceutical Research) Journal and is currently inviting papers for June 2024 issue.
- SPH has signed a Memorandum of Understanding with Evercare hospital Lahore (EHL), a modern, state of the art, multi-disciplinary hospital in Lahore.
- SPH has started a series of monthly research symposiums. This activity aims to provide a platform to faculty members and researchers to present their research work and serves an opportunity for them to sit together, explore research collaborations and revive research passion by engaging in insightful discussions.

SPH Activities

IPE Workshop titled "Diabetes management: an interdisciplinary approach"

UMT School of Pharmacy in collaboration with school of health sciences organized an interpersonal (IPE) workshop for healthcare students. The workshop titled "Diabetes management: an interdisciplinary approach" brought together students and faculty members from various disciplines including Pharmacy, Physiotherapy, Medical Lab technology and Nutrition sciences.

The IPE workshop was aimed to promote collaborative learning and make each other understand about their roles within multidisciplinary healthcare teams. IPE has an important role in preparing graduates for the delivery of high quality patient-centered care.

Unlocking Knowledge: Hands-on Workshop on Extracting Insights from Textbooks."

This workshop titled "Extraction from Books" hosted by Dr. Amber Sharif, was designed to equip the students with practical skills to extract valuable insights from textbooks effectively. This was a 2nd workshop for the series of "Extraction from Books". During this immersive hands-on session, participants learnt essential techniques for navigating through textbooks, identifying key information, and synthesizing it for research purposes. Participants were engaged in interactive exercises and received personalized feedback from the facilitator to enhance their skills in extracting insights from textbooks.

Key Workshop Highlights:

- Tips and techniques for efficient textbook navigation
- Strategies for identifying and extracting key information
- Hands-on practice sessions to apply extraction techniques
- Introduction to digital tools and library resources for enhanced extraction
- Techniques for synthesizing extracted insights into research projects
- Q&A and open discussion for peer exchange and insights

Seminar on preventing plagiarism and fostering academic integrity

SPH hosted an insightful seminar titled "Preventing Plagiarism and Fostering Academic Integrity," led by Dr. Zaheer Ahmad, Chief Library Officer and Head of the Learning Resource Center (LRC) at UMT. Dr. Ahmad's presentation delved into the detrimental effects of plagiarism on scholarly discourse and emphasized the importance of upholding academic integrity. Through interactive activities and discussions, attendees gained practical strategies for identifying and avoiding plagiarism while fostering a strong commitment to ethical scholarship. Additionally, the announcement of three students as Ambassadors for Academic Integrity highlighted the institution's proactive approach in promoting ethical conduct among students. This seminar not only equipped participants with valuable insights but also reinforced UMT SPH's commitment to maintaining the highest standards of academic excellence and integrity.

Session on opportunities for Pharmacists in Australia

UMT consistently provides students with opportunities to broaden their horizons, refine their skills, and acquire the necessary knowledge for real-world application. We express gratitude to Dr. Asad Mahmood, a registered pharmacist in Australia, for visiting our campus. He engaged with SPH students, discussing the KAPS exam and highlighting the potential opportunities for pharmacists in Australia.

Industry Academia Linkages

Research collaboration initiative with VRI and FMDRC

The UMT President's Office coordinated a visit to the VRI and FMDRC, with 19 UMT faculty members and Deans from SPH, SHS, SSC, and SFAS. DG Research Dr. Sajjad along with all senior management of center welcomed the UMT delegates
UMT and VRI discussed and explored various opportunities on collaborative research projects, faculty training and curriculum development.
SPH is thankful to President UMT Mr. Ibrahim Murad for organizing this activity.

MOU with Evercare Hospital (EHL) Lahore

UMT School of pharmacy has signed a Memorandum of Understanding with Evercare hospital Lahore (EHL), a modern, state of the art, multi-disciplinary hospital in Lahore. This collaboration has been signed to create strategic alliance and seamless linkage with EHL in the areas of clinical clerkship/internship, research and community pharmacy service program.They plan to aid more with Iftar and Eid Drives to provide the needy with the necessities with much-needed cheer. The students plan to set up medical camps in areas that lack healthcare awareness and facilities. This is a bright chance for the students to learn their specific roles as healthcare workers in our society as well as benefit the people by giving them healthcare facilities such as blood tests and checkups.
This group of enthusiasts is a guiding light to all the students of the School of Pharmacy. These students keep the spirit of charity alive and strive to be a valued part of our society today.

Faculty Development Program

Seminar on Ethics

UMT School of Pharmacy hosted a thought-provoking seminar on "What is Ethics?" led by Prof. Dr. Ejaz Cheema, Founding Dean of SPH. The seminar garnered significant attention from both faculty members and students alike.

The seminar commenced with an exploration of the concept of ethics, tracing its roots through historical perspectives and elucidating its relevance in modern society. One of the focal points of the seminar was the examination of medical ethics, shedding light on the ethical considerations and dilemmas encountered in the field of healthcare. The seminar served as a platform for fostering a deeper understanding of ethics and its implications in shaping a fair, just, and compassionate society.

Seminar on Ethical Models

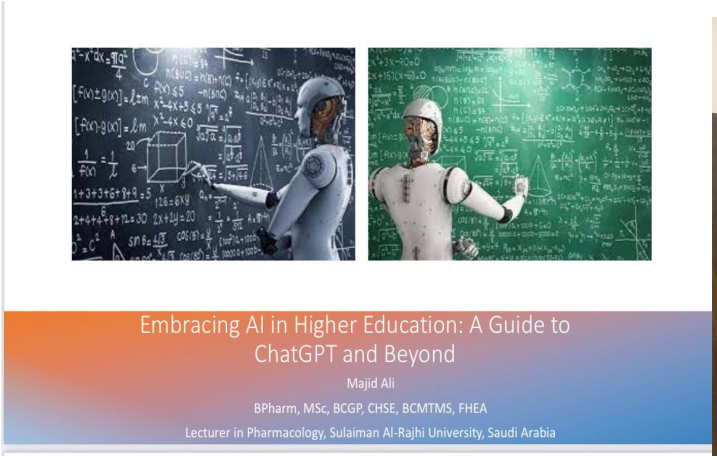
SPH hosted a stimulating seminar delving into the intricacies of "Ethical Models." Prof. Dr. Ejaz Cheema spearheaded the session, drawing upon his expertise to elucidate the diverse array of ethical frameworks and models. He provided an overview of ethical models, exploring various theoretical constructs and methodologies employed in ethical reasoning and decision-making, providing attendees with a nuanced understanding of each model's principles and applications. Throughout the session, participants were encouraged to critically examine the strengths and limitations of different ethical models, engaging in lively discussions and debates to deepen their comprehension and refine their analytical skills

Workshop on OSCE

Faculty development is key to foster the learning environment and enhance the academic performance of both students and faculty members. UMT School of Pharmacy conducted a faculty development workshop with an aim to develop a comprehensive understanding of the Objective Structured Clinical Examination (OSCE), its need and its significance in pharmacy and health education. Faculty members were guided through the process of developing OSCE stations in line with the curriculum and real-world practice. Participants of the workshop had the opportunity to learn about the best practices and innovative approaches for integrating OSCE into education, feedback strategies, logistical considerations and resource allocation.

Faculty development workshop on "Embracing AI in higher education: A guide to chat GPT and beyond"

The workshop titled "Embracing AI in higher education: A guide to chat GPT and beyond" was arranged at SPH. The facilitator Dr Majid Ali focused on the use and application of AI in academic settings and its impact on education. The workshop was informative and interactive.



STUDENT CORNER

Reflections of students selected for UGRAD Program

Seize the moment; opportunities await the seekers, not the spectators. The UGRAD (Undergraduate Exchange) program offers a transformative educational experience for undergraduate students from around the world. Designed to foster cross-cultural understanding and academic excellence, UGRAD provides participants with the opportunity to study at accredited U.S. universities for one academic semester. It is a fully funded exchange program offered by USEFP.

Discovering the UGRAD opportunity through an email from the Office of Internationalization at UMT sparked a journey filled with anticipation and excitement The initial steps of completing the application and crafting a Statement of Purpose were guided by insights shared by UGRAD alumni on social media. After months of eager waiting, a sudden call in January 2024 brought the unexpected joy of being selected for an interview. With February marked for the interview, I immersed myself in preparation, absorbing wisdom from diverse UGRAD alumni videos. Finally, the awaited day arrived, brimming with nerves and excitement. The interview proved to be a transformative experience, teaching me invaluable lessons and leaving a lasting impression on my journey.

UGRAD provides students with opportunities for academic growth, cultural exchange, personal development, networking, language proficiency, global perspectives, and career advancement. I'm proud of being selected for this exchange program and I believe it will offer me a chance to explore my identity, acquire valuable skills, and gain experiences that will undoubtedly benefit my professional journey.

By: Javeria Rasheed

Try, try till you succeed" & "Hard work pays off" are the lines that kept me motivated at every step of my life. UMT provided me a platform to groom myself and also helped me to hunt the various opportunities. If I go back in September 2023, I came to know about GLOBAL UGRAD. UGRAD basically is an undergraduate scholarship program offered by the US Department of states. It is a fully funded Scholarship program which covers all expenses like transportation, air fare, living expenses and apart from this stipend is also provided to candidates to meet their basic needs. So to grab this promising scholarship. The procedure of application is quite long and it takes almost 4-5 months. One day during my practical exam I was informed through a telephonic call that I had been short listed. It was an astonishing second for me because I was selected among thousands of candidates. My interview was scheduled for which my teachers encouraged me and also played an important part in this.

One of my Sir gave me a few possible questions that might be asked in the interview. Further, I saw different videos on YouTube and followed various pages on different social media platforms for interview preparation. Finally the day came and I reached my test center with all the required documents. There was a written test followed by interview. The panelists inquired about my field and the community work that I had done. On 19 March 2024, I got my final selection email and it was a proud moment for me because it's a great achievement to be among the shortlisted candidates of this prestigious scholarship. I will always look forward to do such things that will make my parents, my teachers, my institute and my country feel proud.for ailments, their pathological actions, dosage and the method of administration. It was written as a guidebook for pharmacists.

By: Muhammad Maaz Imran

Session on Seerat un Nabi

Pharmacy Student Society of SPH organized a seminar with the theme "The Biography of the Prophet (PBUH)". The seminar commenced with recitation from the Holy Quran, followed by heartfelt praises of our beloved Prophet Muhammad (PBUH) in the form of poetry. The speaker Mr. Kashif Hussain Mustafai mentioned many aspects of the Prophet's biography filling the atmosphere with the fragrance of remembrance of the Prophet (PBUH). The gathering ended with a prayer leaving a spiritual impact on all attendees.

Gift Packing For Orphans at Alkhidmat Foundation

UMT SPH dedicated students have been actively engaged in volunteering activities to make a meaningful difference in our community. From organizing health awareness camps to reaching out those in need, their efforts have been truly inspiring. With hearts full of compassion, SPH students in collaboration with Alkhidmat foundation, meticulously packed gifts to bring smiles to the recipients' faces. Each student poured their love and care into every package, knowing that their efforts would make a difference in someone's life.
Together, we can make a positive impact and create a brighter future for all.

Alkhidmat Foundation Grand Iftar Dinner 2024

Pharm-D department students volunteered at the Grand Iftar Dinner organized for orphans, widows, and old home residents at the UMT Main campus in collaboration with Alkhidmat Foundation. The students actively contributed to the event by assisting in organizing, serving food, and engaging with the attendees to ensure they felt welcomed and cared for during the Iftar.

Research Corner

Research symposium titled validation of folkloric claim of thick leaf salt bush in the management of pain and inflammation

A successful and informative research symposium was held at SPH. Dr. Sarah provided valuable insights into ongoing research and its prospective outcomes. The session was accompanied by engaging discussions, revitalizing research knowledge and inspiring new ideas among participants

Research symposium titled" Alleviating high fructose-induced oxidative stress and metabolic disruption: A multifaceted approach with Ranunculus scleratus Linn"

The second successful Symposium conducted at SPH included interactive sessions, discussions, informative talks on research expertise, innovative ideas, and future prospects presented by Dr. Amber Sharif who provided valuable insights into the realm of research.
Thankful to Dean SPH Prof. Dr. Ejaz Cheema for such initiatives and for providing opportunities to explore the depths of the research world.

Abstracts from publications of SPH faculty members

We are pleased to share the abstracts from recent publications of esteemed SPH faculty.

Gender Bias in Diagnosis, Prevention, and Treatment of Cardiovascular Diseases: A Systematic Review

Abdullah Al Hamid, Ejaz Cheema ..... Sulaf Assi

Abstract

Cardiovascular disease (CVDs) has been perceived as a 'man's disease', and this impacted women's referral to CVD diagnosis and treatment. This study systematically reviewed the evidence regarding gender bias in the diagnosis, prevention, and treatment of CVDs. Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) guidelines were followed. We searched CINAHL, PubMed, Medline, Web of Science, British Nursing Index, Scopus, and Google Scholar. The included studies were assessed for quality using risk bias tools. Data extracted from the included studies were exported into Statistical Product and Service Solutions (SPSS, v26; IBM SPSS Statistics for Windows, Armonk, NY), where descriptive statistics were applied. A total of 19 studies were analysed. CVDs were less reported among women who either showed milder symptoms than men or had their symptoms misdiagnosed as gastrointestinal or anxiety-related symptoms. Hence, women had their risk factors under-considered by physicians (especially by male physicians). Subsequently, women were offered fewer diagnostic tests, such as coronary angiography, ergometry, electrocardiogram (ECG), and cardiac enzymes, and were referred to less to cardiologists and/or hospitalisation. Furthermore, if hospitalised, women were less likely to receive a coronary intervention. Similarly, women were prescribed cardiovascular medicines than men, with the exception of antihypertensive and anti-anginal medicines. When it comes to the perception of CVD, women considered themselves at lower risk of CVDs than men. This systematic review showed that women were offered fewer diagnostic tests for CVDs and medicines than men and that in turn influenced their disease outcomes. This could be attributed to the inadequate knowledge regarding the differences in manifestations among both genders.

Ameliorative effects of Atriplex crassifolia (C.A.Mey) on pain and inflammation through modulation of inflammatory biomarkers and GC-MS-based metabolite profiling

Sarah Rehman, Saiqa Ishtiaq..... Sairah Hafeez Kamran

Abstract

Atriplex crassifolia (A. crassifolia) is a locally occurring member of Chenopodiaceae family that has been used in folk medicine for the treatment of joint pain and inflammation.

The present study was focused to determine the analgesic and anti-inflammatory potential of the plant. n-hexane (ACNH) and methanol (ACM) extracts of A. crassifolia were evaluated for in vitro anti-inflammatory potential using protein denaturation inhibition assay. In vivo anti-inflammatory potential was determined by oral administration of 250, 500, and 1000 mg/kg/day of extracts against carrageenan and formalin-induced paw edema models. Inflammatory mediators such as TNF-alpha, IL-10, IL-1B, NF-kB, IL-4, and IL-6 were estimated in blood samples of animals subjected to formalin model of inflammation. Analgesic activity was determined using acetic acid-induced writhing and tail flick assay model. Phytochemical profiling was done by GC-mass spectrophotometer. The results of in vitro anti-inflammatory activity revealed that both ACNH and ACM displayed eminent inhibition of protein denaturation in concentration-dependent manner. In acute in vivo carrageenan-induced paw edema model, both extracts reduced inflammation at 5th and 6th hour of study ($p < 0.05$). A. crassifolia extracts exhibited significant inhibition against formalin-induced inflammation with maximum effect at 1000 mg/kg. ACNH and ACM significantly augmented the inflammatory mediators ($p < 0.05$). Levels of TNF-alpha, IL-6, IL-1B, and NF-kB were reduced, while those of IL-4 and IL-10 were upregulated. ACNH displayed maximum analgesic effect at 1000 mg/kg, while ACM showed potent activity at 500 and 1000 mg/kg. The extracts restored the CBC, TLC and CRP toward normal. GC-MS analysis revealed the presence of compounds like n-hexadecanoic acid, Phytol, (9E,11E)-octadecadienoic acid, 2-hydroxy-1-(hydroxymethyl) ethyl ester, 1-hexacosene, vitamin E, campesterol, stigmasterol, gamma sitosterol in both extracts. These compounds have been reported to suppress inflammation by inhibiting inflammatory cytokines. The current study concludes that A. crassifolia possesses significant anti-nociceptive and anti-inflammatory potential owing to the presence of phytochemicals.

HPLC profiling for the simultaneous estimation of antidiabetic compounds from Tradescantia pallida

Fariha Imtiaz, Muhammad Islam,.....Romia Javaid Saddiqui,

Abstract

Diabetes is a long-term metabolic disease epitomized by postprandial hyperglycemia. The prolonged use of synthetic drugs renders distinct side effects, necessitating the development of safe and cost-effective substitutes. The aim of the current study is to isolate, evaluate the antidiabetic potential and HPLC method development for simultaneous estimation of antidiabetic compounds from the leaves of Tradescantia pallida. The leaves were extracted, fractionated and subjected to column chromatography. The isolated compounds' antidiabetic potential was evaluated using amylase and glycosylation of hemoglobin assays. The study employed molecular docking to scrutinize interactions between antidiabetic compounds and human amylase and hemoglobin protein.
Prime MM-GBSA calculations determined binding energies of ligand–protein complexes. Further analysis of morin and catechin involved exploring dynamic and thermodynamic constraints through molecular dynamics simulations under specific biological conditions. A rapid HPLC method was developed and validated for the simultaneous estimation of isolated compounds. The column chromatography culminated in the isolation of four antidiabetic compounds (syringic acid, catechin, p-coumaric acid and morin). The in vitro analyses revealed that morin and catechin exhibited 72.67 % and 78 % amylase inhibition and 67 % and 71.66 % inhibition of hemoglobin glycosylation, respectively. In silico studies substantiated the in vitro assay, confirming the stability of catechin and morin complexes via root mean square deviation analysis. Interactions, encompassing hydrophilic, hydrophobic, water bridges, and ionic interactions, identified key residues involved in these processes. The validated HPLC method exhibited excellent correlation coefficients ranged from 0.9909 to 0.9997. The antidiabetic compounds were quantified from the extract in the range of 0.072 – 0.160 µg/mL. The study concluded that the isolated compounds from Tradescantia pallida have remarkable antidiabetic activity, and the developed method can be successfully used for the identification and quantification of phenolic compounds in Tradescantia pallida and other plant-derived matrix.

Graphitic-carbon nitride and polyvinylpyrrolidone capped barium oxide nanocomposites served as dye degrader and bactericidal potential: A molecular docking study

Fiaz Ahmad, Ali Haider, Iram Shahzadi.....Muhammad Ikram

Abstract

The removal of cationic dyes from wastewater and inactivation of bacterial pathogens in mastitic milk attracted significant attention from researchers to overcome their impact on the environment and ecosystem challenges. In recent research work, the synthesis of BaO nanorods (NRs) capped with 3 wt% polyvinylpyrrolidone (PVP) and varying quantities (2 and 4 wt%) of graphitic-carbon nitride (g-C3N4) was carried out using an eco-friendly, lowcost co-precipitation approach. The primary objective of this study is to explore the potential application of a ternary system for the disinfection of contaminated water besides investigating its antibacterial capabilities.
Adding g-C3N4 and PVP to BaO enhances morphological and chemical stability, suppresses the population of charge carriers, facilitates dye degradation, and exhibits notable efficacy in antibacterial activity owing to its reduced bandgap energy. The higher concentration of g-C3N4/PVP- BaO ascribed notable results of Rhodamine B (RhB) degradation (19.3–100 %) in a basic medium rather than acidic and neutral media. A high concentration of g-C3N4 nanocatalyst represents the remarkable antimicrobial efficacy (0–3.05mm) against Staphylococcus
aureus (S. aureus). The findings from molecular docking investigation indicate g-C3N4/PVP-BaO NRs suppressive effects for DNA gyraseS. aureus, which is comparable with their reported bactericidal efficacy.

Efficient Dye Degradation and Antimicrobial Behavior with Molecular Docking Performance of Silver and Polyvinylpyrrolidone-Doped Zn-Fe Layered Double Hydroxide

Wakeel Ahmad, Iram Shahzadi, Ali Haider.....Muhammad Ikram

Abstract

Zn-Fe layered double hydroxide (LDH) was synthesized through the low-temperature-based coprecipitation method. Various concentrations of Ag (1, 3, and 5 wt %) with a fixed amount (5 wt %) of polyvinylpyrrolidone (PVP) were doped into LDH nanocomposites. This research aims to improve the bactericidal properties and catalytic activities of doping-dependent nanocomposites.
Adding Ag and PVP to LDH enhanced oxygen vacancies, which increased the amount of hydroxide adsorption sites and the number of active sites. The doped LDH was employed to degrade rhodamine-B dye in the presence of a reducing agent (NaBH4), and the obtained results showed maximum dye degradation in a basic medium compared to acidic and neutral. The bactericidal efficacy of doped Zn-Fe (5 wt %) showed a considerably greater inhibition zone of 3.65 mm against Gram-negative (G-ve) or Escherichia coli (E. coli).
Furthermore, molecular docking was used to decipher the mystery behind the microbicidal action of Ag-doped PVP/Zn-Fe LDH and to propose an inhibition mechanism of ketoacyl-acyl carrier protein synthase IIE. coli (FabH) and deoxyribonucleic acid gyrase E. coli behind in vitro results.

Health Corner

Healthy Eating During the Holy Month of Ramadan

By Dr Rabia Altaf
Associate Professor, SPH

Millions of Muslims around the globe meditate and focus on inner reflection during "the Sultan of 11 months", the holy month of Ramadan. Fasting during Ramadan from dawn to dusk slows down the metabolism of your body causing a series of changes in our biological clock. A healthy mind is followed by a healthy body ultimately witnessing the intake of healthy food.

To capture the spirit of Ramadan and to enjoy your fasting, you may keep your conscious at suhoor and iftar timings for a healthy diet and proper hydration. Although the duration of fasting according to your global location and varying climatic conditions may affect your routine and diet intake, still one can maintain a balanced food intake for the best outcome.

Maintaining a healthier Ramadan routine and diet:

1. Never skip a pre-dawn meal (suhoor)
2. Avoid overeating during iftar
3. Avoid eating fried foods, salty foods and high-sugar foods
4. Keep yourself hydrated
5. Avoid athletic exercises of physical exertion unnecessarily that may deplenish your energy levels.
6. Aid your cardiovascular and digestive system by proper chewing of your food and a walk an hour or two after iftar.
7. Try to have grilled, boiled, or steamed meat, chicken, or vegetable dishes to maintain your nutritious needs.

Making the right choices and healthy routines may help one to observe fasting keeping your energy levels high and body nourished. This is the most joyous month of the year! Enjoy meals with others, exercise goodwill, and be patient with your body and with others.