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Taskeen Ali Khan

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WORK EXPERIENCE

Research Assistant

Government Paramedical Institute of Medical Technologies [01/09/2022 – Current]

City: Saidu Sharif Swat, | **Country:** Pakistan

- **Focus areas:** Biochemistry, Molecular Medicine, Pathology and Microbiology Lab Work.
- Contributing to the development of future healthcare professionals.
- Bridging the gap between fundamental science and practical applications in medicine.
- Plays a vital role in understanding human health and disease.
- Develop new drugs, diagnostics, and treatments for a variety of medical conditions.
- Uses techniques from molecular biology, genetics, microbiology and biochemistry to understand the genetic and molecular basis of disease.
- Aims to develop new therapies that target the underlying causes of disease, rather than just the symptoms.
- Conducted hands-on lab activities, guiding students through experiments and analysis.

Lecturer

Riphah international University Pakistan Swat campus (Part time) [01/08/2022 – 01/08/2023]

City: Saidu sharif swat | **Country:** Pakistan

- **Courses taught:** Microbiology, Medical Instrumentation
- **Responsibilities:** Empowering future healthcare professionals.
- Guiding students through laboratory practicals, Microbiology and pathology labs.
- Bridging the gap between scientific knowledge and its medical application.
- Development of new therapies, such as targeted therapy and immunotherapy.

EDUCATION AND TRAINING

MASTER'S OF PHILOSOPHY IN MEDICAL MICROBIOLOGY (M.PHIL.)

Quaid-i-azam University, Islamabad, Pakistan. [13/02/2020 – 02/11/2022]

Field(s) of study: Medical Microbiology | **Final grade:** 3.9/4.0 | **Thesis:** Master's (2 years).

Thesis Title: Title “Biosynthesis of silver nanoparticles from novel Bischofia Javanica plant loaded chitosan hydrogel: as antimicrobial and wound healing agent”

Thesis Summary: The current study aimed to develop a new anti-bacterial approach that would surpass antibiotics in therapeutics and will efficiently deal with diverse nature of microbes. The study comprised of synthesis of Ag nano particles using green synthesis technology and its characterization by **XRD, FTIR** and **SEM.** Biochemical identification of bacterial species, anti-microbial susceptibility profile, anti-biofilm assay and application of Ag nano particles on wound healing in rat model. NPs were applied on burnt wound of rat model and its activity was recorded up to 21 days. A good epithelialization was achieved, as well as a strong wound closure. In comparison to chitosan, silver nanoparticles incorporating membranes demonstrated a high amount of angiogenesis and speedy wound healing.

DOI: 10.1007/s13399-022-02960-w

BACHELOR OF SCIENCE IN MICROBIOLOGY

Shaheed Benazir Bhutto women university, Peshawar, Pakistan. [10/10/2013 – 16/04/2018]

Field(s) of study: Microbiology | **Final grade:** 3.21/4.0 | **Thesis:** Bachelor's (4 years).

Thesis Title: Title " Molecular detection of Active HCV in Peshawar (April-Dec 2017)".
Thesis Summary: Hepatitis C virus (HCV), a blood-borne virus that infects the liver, affects an estimated 4 million Americans, with 3.2 million chronically infected. A study looking at HCV prevalence among 221 people (mostly men) aged 18-80 found a higher infection rate in males (11%) compared to females (8%). The study also showed the highest infection rate (16.41%) in those aged 41-60, with no infections detected in the 10-20 age group. These findings highlight the need for an HCV vaccine to prevent infection, especially considering that behaviors like unsafe drug use and unclean medical instruments can spread the virus.

LANGUAGE SKILLS

Other language(s):

English

LISTENING C2 **READING** C2 **WRITING** C2

SPOKEN PRODUCTION C2 **SPOKEN INTERACTION** C2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

DIGITAL SKILLS

SPSS and SAS / Matlab/Simulik / Graph Prism / Microsoft Office (Outlook, Excel, Word, PowerPoint)

PUBLICATIONS

Biosynthesis of silver nanoparticles from novel Bischofia javanica plant loaded chitosan hydrogel: as antimicrobial and wound healing agent **Khan, T.A.** *et al.* Biosynthesis of silver nanoparticles from novel *Bischofia javanica* plant loaded chitosan hydrogel: as antimicrobial and wound healing agent. *Biomass Conv. Bioref.* **13**, 15531–15541 (2022).
https://doi.org/10.1007/s13399-022-02960-w

PROJECTS

Research Assistant
Biosynthesis of silver nanoparticles from novel Bischofia Javanica plant loaded chitosan hydrogel: as antimicrobial and wound healing agent (Quaid-i-azam university, Islamabad, Pakistan, Feb 2020- March 2022).

- Worked on Bio-synthesis of novel nanomaterials as Antimicrobial, Anticancer and wound healing agent.
- Developing metallic nanoparticles (Ag, Fe, Cu) for diverse applications.
- The current study has made a solution to antibiotic resistance by determining the individual and combined efficacies of nanoparticles and antibiotics.
- The study has found that nanoparticles or their combination with antibiotics is a potential alternative way to solve microbial resistance problems.
- In addition, mixing a hydrogel matrix with AgNPs provides considerable wound-healing and antimicrobial activity.
- Concluded that AgNPs should be a selective therapeutic in the field of medicine.
- Expected results were obtained from experiments that were performed.

- Published research findings and presented at conferences .
- Presented at I**nternational Science seminar organized by Dr Zyta Ziora (The university of Queensland Australia) 28 March 2024.**

Molecular detection of active HCV:

- This molecular study was carried out on active Hepatitis C Virus infection in Peshawar region between April-December 2017.
- The present study was conducted at GENE Tech Diagnostic and Research Laboratory Peshawar, Pakistan.

Project on HCV in the lab of Peshawar Medical Collage (Oct-December 2017).

Internship as microbiologist in Khyber Teaching Hospital (December 2017-Feb 2018).

HONOURS AND AWARDS

Received Excellent student school award 2008-2010.
School topper award in matric 2010.
Laptop from the Government of Pakistan for talented students Scheme.(2014).
Funding Member of Shaukat Khanum Memorial Hospital Peshawar (2011-2017).
Govt.Paramedical Institute of Medical Technologies Swat Best Lecturer performance Award by **DG health, KPK** (2024).

LAB EXPERIENCE

Key skills

Spectrophotometry / FTIR / EDX / UV-Vis Spectroscopy / SEM / HPLC / SDS-PAGE / Gel-electrophoresis / ELIZA DNA, RNA extraction / PCR / Gel Doc / NANODROP / Enzyme kinetics / Chromatography / Gram staining / Microscopy / Microbial isolation, culturing and identification / Autoclave / Antioxidant assays / Gram staining / Synthesis and characterization of Nanoparticles / Production of bioplastic (PLA) / Fermentation / Instrumental analysis / Plant Stress/ Antibiotics Characterization/ Antibacterial peptides Characterization.

SEMINAR AND ACTIVITIES

Certificates and Participations

- Certified Professional in awareness seminar on tuberculosis (9th April 2015).
- Certified professional in World Ozone prevention day on 16th of September 2016.
- Certified in career counselling workshop for female students held on 23-24 May 2016.
- Certified in GENDER SENSITIZATION WORKSHOP FOR MEDIA STUDENTS.
- Certified Professional with relief international on BIORISK MANAGEMENT (5-9 Sep 2016).
- International training in randomized controlled trails at COMSTECH, Islamabad.
- Inclusive Science Technology and Innovation policy for OIC member states at COMSTECH, Islamabad.
- Basic plant tissue culture techniques at COMSTECH, Islamabad.
- Member of Blood Donor Society Islamia College, Peshawar (2011-12).
- Funding Member of Shaukat Khanum Memorial Hospital Peshawar (2011-2016).
- Attended awareness seminar on tuberculosis (9th April 2015).
- Participate in World Ozone prevention day on 16th of September 2016.
- Participate in career counselling workshop for female students held on 23-24 May 2016.
- Five days' work with relief international on BIORISK MANAGEMENT (5-9 September2016).
- Participate in GENDER SENSITIZATION WORKSHOP FOR MEDIA STUDENTS.

REFEREES