

## **List of All Patents**

Baqai Medical University, through its Office of Research, Innovation and Commercialization (ORIC), drives impactful innovation by transforming groundbreaking ideas into practical solutions. ORIC fosters research excellence, industry collaboration, and patent development, positioning the university as a hub of scientific advancement, entrepreneurship, and societal impact in Pakistan's healthcare and biomedical landscape.

### **1. Photochemical Process for Preparation of Riboflavin-Conjugated Silver Nanoparticles**

- **Description:** A method for creating silver nanoparticles conjugated with Riboflavin (Vitamin B2) using a photochemical process.
- **Authors:** Zubair Anwar, Iqbal Ahmad
- **Filing Date:** December 18, 2017

### **2. Composition of a Topical Tolfenamic Acid Gel and the Process of Making Thereof**

- **Description:** The formulation and manufacturing process for a stable gel containing Tolfenamic acid for topical application.
- **Authors:** Syeda Ayesha Ahmedun Nabi, Muhammad Ali Sheraz, Sofia Ahmed
- **Filing Date:** March 17, 2021

### **3. The Composition of Rutin Trihydrate Facial Serum and the Process of Making Thereof**

- **Description:** The formulation and process for creating a stable anti-aging facial serum containing Rutin Trihydrate.
- **Authors:** Nimra Khan, Sofia Ahmed, Muhammad Ali Sheraz, Zubair Anwar, Iftikhar Ahmed Siddiqui
- **Filing Date:** March 17, 2021

### **4. Formulation of an Ionic Solution of Diclofenac Sodium for Iontophoresis**

- **Description:** Development of an ionic solution of Diclofenac Sodium suitable for administration via iontophoresis.
- **Authors:** Hasnan Ali, Muhammad Ali Sheraz, Sarmad Shams, Sofia Ahmed, Fahad Ahmed Siddiqui, Muhammad Safwan, Areeb Ahmed
- **Filing Date:** September 8, 2021

### **5. Formulation and Stability of Collagenase in Gel Formulations**

- **Description:** The development and stability assessment of gel formulations containing the enzyme Collagenase.
- **Authors:** Syeda Yanma Zia, Sofia Ahmed, Syed Abid Ali, Mehvish Perveen, Nimra Khan, Muhammad Ali Sheraz
- **Filing Date:** September 8, 2021

## **6. Composition of Stable Ascorbic Acid Nanosponges and the Process Thereof**

- **Description:** A composition and method for creating stable nanosponge carriers for Ascorbic Acid (Vitamin C).
- **Authors:** Sadia Ahmed Zuberi, Muhammad Ali Sheraz, Syed Abid Ali, Muhammad Raza Shah, Sofia Ahmed
- **Filing Date:** January 14, 2022

## **7. Composition and Physical Stability of Calendula Hydroalcoholic Gel**

- **Description:** The formulation and study of the physical stability of a hydroalcoholic gel containing Calendula.
- **Authors:** Syeda Ayesha Ahmed un Nabi, Muhammad Ali Sheraz, Sofia Ahmed
- **Filing Date:** January 14, 2022

## **8. A Process for the Formulation of Dapagliflozin Orodispersible Tablets**

- **Description:** A method for manufacturing orodispersible tablets containing the drug Dapagliflozin.
- **Authors:** Talha Mahmood, Muhammad Ali Sheraz, Sofia Ahmed
- **Filing Date:** June 8, 2022

## **9. Development of Stable Rapid Disintegrating Tablets of Simvastatin and the Process Thereof**

- **Description:** The formulation and process for creating rapidly disintegrating tablets of Simvastatin with enhanced stability.
- **Authors:** Nazish Kanwal, Muhammad Ali Sheraz, Syed Furqan Ahsan, Sofia Ahmed, Syeda Ayesha Ahmed un Nabi
- **Filing Date:** July 6, 2022

## **10. A Validated Stability-Indicating HPLC Method for the Quantitative Determination of Tolfenamic Acid**

- **Description:** A validated High-Performance Liquid Chromatography (HPLC) method to quantitatively determine Tolfenamic acid and its stability.
- **Authors:** Sadia Hafeez Kazi, Muhammad Ali Sheraz, Sofia Ahmed
- **Filing Date:** July 6, 2022

## **11. Composition of Novel Ascorbic Acid Loaded $\beta$ -Cyclodextrin Nanosponges in Carboxymethylcellulose Hydrogels and the Process Thereof**

- **Description:** A composition involving Ascorbic Acid-loaded nanosponges incorporated into a carboxymethylcellulose hydrogel and its manufacturing process.
- **Authors:** Sadia Ahmed Zuberi, Muhammad Ali Sheraz, Sofia Ahmed, Syed Abid Ali
- **Filing Date:** August 18, 2022

## **12. Stability-Indicating Spectrofluorimetric Process for the Quantification of Donepezil HCl**

- **Description:** A stability-indicating spectrofluorimetric method for quantifying the drug Donepezil HCl.
- **Authors:** Zubair Anwar, Tooba Khan, Muneeba Usmani
- **Filing Date:** September 8, 2023

## **13. Stability-Indicating High Performance Liquid Chromatographic (HPLC) Process for the Quantification of Vorticostiene HBr**

- **Description:** A stability-indicating HPLC method for the quantitative analysis of Vorticostiene HBr.
- **Authors:** Saba Sabir, Zubair Anwar, Muneeba Usmani
- **Filing Date:** September 18, 2023

## **14. HPLC Process for the Quantitative Determination of Riboflavin (Vitamin B2)**

- **Description:** An HPLC method developed for the quantitative determination of Riboflavin (Vitamin B2).
- **Authors:** Aisha Noreen, Zubair Anwar, Muhammad Ahsan Ejaz, Tania Mirza
- **Filing Date:** September 18, 2023

## **15. Analytical Process of HPLC for the Quantitative Estimation of Riboflavin (Vitamin B2)**

- **Description:** An analytical HPLC process for the quantitative estimation of Riboflavin.
- **Authors:** Aisha Noreen, Zubair Anwar, Sofia Ahmed, Muhammad Ali Sheraz
- **Filing Date:** September 8, 2023

## **16. Analytical Process for the Determination of Ascorbic Acid (Vitamin C) Using High-Performance Liquid Chromatographic (HPLC)**

- **Description:** An HPLC method for the quantitative determination of Ascorbic Acid (Vitamin C).
- **Authors:** Aisha Noreen, Zubair Anwar, Muhammad Ali Sheraz, Sofia Ahmed
- **Filing Date:** September 8, 2023

## **17. The Composition of Alginic Acid-Based Orodispersible Tablets of Lorazepam**

- **Description:** A composition for creating orodispersible tablets of Lorazepam using Alginic Acid.
- **Authors:** Zoya Amin, Sofia Ahmed, Muhammad Ali Sheraz, Zubair Anwar
- **Filing Date:** September 25, 2023

## **18. Composition of Crosscarmellose Sodium Mediated Rapid Disintegrating Oral Tablets of Lorazepam**

- **Description:** A composition for rapid-disintegrating oral tablets of Lorazepam using Crosscarmellose Sodium.
- **Authors:** Zoya Amin, Sofia Ahmed, Muhammad Ali Sheraz, Zubair Anwar
- **Filing Date:** September 25, 2023

#### **19. The Composition of Self-Emulsifying Emulgel of Ketoprofen and the Process Thereof**

- **Description:** The composition and process for creating a self-emulsifying emulgel for the drug Ketoprofen.
- **Authors:** Raahim Ali, Muhammad Ali Sheraz, Sofia Ahmed
- **Filing Date:** October 13, 2023

#### **20. Stability-Indicating High-Performance Liquid Chromatographic (HPLC) Process for the Quantitative Estimation of Pursuitianine (a Prodrug of Thiamine)**

- **Description:** A stability-indicating HPLC method for quantifying Pursuitianine, a prodrug of Thiamine (Vitamin B1).
- **Authors:** Muhammad Ahsan Ejaz, Zubair Anwar, Aisha Noreen, Muneeba Usmani
- **Filing Date:** September 8, 2023

#### **21. Quantitative Process for the Determination of Thiamine Hydrochloride Using High-Performance Liquid Chromatography (HPLC)**

- **Description:** An HPLC-based quantitative method for determining Thiamine Hydrochloride (Vitamin B1).
- **Authors:** Muhammad Ahsan Ejaz, Zubair Anwar, Muneeba Usmani
- **Filing Date:** September 8, 2023

#### **22. HPLC Quantitative Process for the Determination of Pyridoxine HCl (Vitamin B6)**

- **Description:** An HPLC method for the quantitative determination of Pyridoxine HCl (Vitamin B6).
- **Authors:** Aisha Noreen, Zubair Anwar
- **Filing Date:** September 8, 2023

#### **23. Composition of a Stable Antiaging & Skin Moisturizing Facial Serum of Gloconolactone**

- **Description:** A composition for a stable facial serum with anti-aging and moisturizing properties containing Gloconolactone.
- **Authors:** Safoora Tariq, Warisha, Muhammad Ali Sheraz, Sofia Ahmed
- **Filing Date:** March 28, 2024

#### **24. A process and Composition for the Development of a Biodegradable Chitosan Based Oral Chip of Chlorhexidine Gluconate for Periodontal Infection**

- **Description:** A process and composition for creating a biodegradable oral chip made from chitosan for delivering Chlorhexidine Gluconate to treat periodontal infections.
- **Authors:** Saima Afzal, Muhammad Ali Sheraz, Sofia Ahmed, Zubair Anwar
- **Filing Date:** March 28, 2024

## **25. The Process and Composition of Acetic Acid based PEGylated Biodegradable Xerogels of Chitosan for sustained release of Doxycycline Hyclate in Periodontal Disease**

- **Description:** A method and composition for creating PEGylated, biodegradable xerogels using acetic acid and chitosan for the sustained release of Doxycycline Hyclate in periodontal disease treatment.
- **Authors:** Farjad Zafar, Maryam Riaz, Muhammad Ali Sheraz, Syed Abid Ali, Sofia Ahmed, Zubair Anwar, Zuneera Akram
- **Filing Date:** May 16, 2024

## **26. The Process and Composition of Acetic Acid based Biodegradable glossy, and tasteless Xerogel of Chitosan loaded with Doxycycline Hyclate**

- **Description:** A process and composition for creating glossy, tasteless, biodegradable xerogels from chitosan using acetic acid, loaded with Doxycycline Hyclate.
- **Authors:** Farjad Zafar, Maryam Riaz, Syed Abid Ali, Muhammad Ali Sheraz, Sofia Ahmed, Zubair Anwar, Zuneera Akram
- **Filing Date:** May 16, 2024

## **27. A Validated Single UHPLC Green Process for the Assay of Doxycycline Hyclate in Pure, Pharmaceutical Dosage Forms, and Biological Samples**

- **Description:** A validated, environmentally friendly Ultra-High-Performance Liquid Chromatography (UHPLC) method for assaying Doxycycline Hyclate in various samples.
- **Authors:** Muneeba Usmani, Muhammad Ali Sheraz, Syed Abid Ali, Sofia Ahmed, Zubair Anwar
- **Filing Date:** June 3, 2024

## **28. Development of an HPLC Process for the Quantification of Riboflavin (Vitamin B2)**

- **Description:** Development of an HPLC method for quantifying Riboflavin.
- **Authors:** Aisha Noreen, Zubair Anwar, Sofia Ahmed, Muhammad Ali Sheraz
- **Filing Date:** June 7, 2024

## **29. Quantitative Simultaneous Process for the Estimation of Riboflavin and Pyridoxine HCl using HPLC**

- **Description:** An HPLC method for the simultaneous quantitative estimation of Riboflavin (B2) and Pyridoxine HCl (B6).
- **Authors:** Aisha Noreen, Zubair Anwar, Sofia Ahmed, Muhammad Ali Sheraz
- **Filing Date:** June 7, 2024

### **30. Simultaneous Quantitative Process for the Determination of Riboflavin and Ascorbic Acid using HPLC**

- **Description:** An HPLC method for the simultaneous quantitative determination of Riboflavin (B2) and Ascorbic Acid (C).
- **Authors:** Aisha Noreen, Zubair Anwar, Sofia Ahmed, Muhammad Ali Sheraz
- **Filing Date:** June 7, 2024

### **31. Composition of Hydrochloric Acid-Based PEGylated Biodegradable Xerogels of Chitosan for Rapid Release of Doxycycline Hyclate in Periodontal Diseases**

- **Description:** A composition for creating PEGylated chitosan xerogels using hydrochloric acid, designed for the rapid release of Doxycycline Hyclate.
- **Authors:** Farjad Zafar, Muhammad Ali Sheraz, Syed Abid Ali, Sofia Ahmed, Maryam Riaz, Zubair Anwar
- **Filing Date:** November 12, 2024

### **32. Composition of Biodegradable Doxycycline Hyclate Loaded Hydrochloric Acid-Based Chitosan Xerogels**

- **Description:** A composition for biodegradable xerogels made from chitosan using hydrochloric acid and loaded with Doxycycline Hyclate.
- **Authors:** Farjad Zafar, Muhammad Ali Sheraz, Syed Abid Ali, Sofia Ahmed, Maryam Riaz, Zubair Anwar
- **Filing Date:** November 12, 2024

### **33. Composition and Preparation Process of Hydroxyapatite-Based PEGylated Biodegradable Xerogels of Chitosan for Sustained Release of Doxycycline Hyclate for the Treatment of Periodontal Diseases**

- **Description:** A composition and preparation process for hydroxyapatite-based, PEGylated chitosan xerogels for the sustained release of Doxycycline Hyclate to treat periodontal diseases.
- **Authors:** Farjad Zafar, Muhammad Ali Sheraz, Syed Abid Ali, Sofia Ahmed, Maryam Riaz, Zubair Anwar
- **Filing Date:** January 13, 2025

### **34. A composition and Performance of Starch Based Oral Impression Material**

- **Description:** A composition and assessment of the performance of a starch-based material for taking oral impressions in dentistry.
- **Authors:** Ayesha Kiran, KahKashan Parveen, Syed Junaid Mehmood, Asaad Javaid, Farhan Khan
- **Filing Date:** June 3, 2025

## **List of Approved Patents**

### **1. The Composition of Rutin Trihydrate Facial Serum and the Process of Making Thereof**

- **Description:** The formulation and process for creating a stable anti-aging facial serum containing Rutin Trihydrate.
- **Authors:** Nimra Khan, Sofia Ahmed, Muhammad Ali Sheraz, Zubair Anwar, Iftikhar Ahmed Siddiqui
- **Filing Date:** March 17, 2021
- **Approved Date:** June 12, 2025 (Notice of Acceptance issued)

### **2. Composition of Stable Ascorbic Acid Nanosplices and the Process Thereof**

- **Description:** A composition and method for creating stable nanosplice carriers for Ascorbic Acid (Vitamin C).
- **Authors:** Sadia Ahmed Zuberi, Muhammad Ali Sheraz, Syed Abid Ali, Muhammad Raza Shah, Sofia Ahmed
- **Filing Date:** January 14, 2022
- **Approved Date:** June 30, 2025 (Notice of Acceptance issued)



**GOVERNMENT OF PAKISTAN**  
**THE PATENT OFFICE**  
**NOTICE OF ACCEPTANCE OF APPLICATION**

All communications should quote the number of this notice and should be addressed to:  
**CONTROLLER**  
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OF DESIGNS,  
THE PATENT OFFICE,  
**KARACHI**

Application No: **21/2022** Sl. No: **144578**

Under section 21 of the Patent ordinance 2000, notice is hereby given that the application for a Patent made by **Baqai Institute of Pharmaceutical Sciences (whose legal address is Baqai Medical University, Karachi, Pakistan)** and numbered as above was accepted on **06/08/2025**. The application, specification and drawings (if any) are open to public inspection. You are directed to send a copy of the abstract of the complete specification "as accepted" to the institutions at the address mentioned in the 4<sup>th</sup> schedule of Patent Rules 2003 within 30 days from the receipt of this notice. The acceptance will be Published in the Patents' Journal in the next issue after the date of issue of this Notice of Acceptance and the printed specification and drawings (if any) will be available to any person in due course at the prescribed fee. Furthermore, any person may, under section 23 of the Patent Ordinance 2000, within four months of the date of the- Publication in the Patents' Journal, give notice of opposition to the grant of the patent. If there is no opposition, or in case of opposition, if the determination is in favor of the grant of a patent, and if the applicant desires a patent to be sealed, he shall file his request on form P-10 at the prescribed fee in accordance with rule 21 (1) of the Patents Rules, 2003.

Date of issue 27 AUG 2025, 2025

  
for Controller of Patents and  
Registrar of Designs

To M/s. **Prof. Dr. Muhammad Ali Sheraz, Director, Baqai Institute of Pharmaceutical Sciences, Baqai Medical University, 51 Deh Tor. Gadap Road, Super Highway, Karachi, Pakistan.**



2025/4808



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