



Rana Abutaima (PhD, AFHEA)

Faculty of Pharmacy
Zarqa University
Zarqa, Damascus Road
Tel: +96253821100. Ext 1453
ZIP/P.O: 13110, 2000
rabutaima@zu.edu.jo

Personal Statement

A dedicated and innovative Assistant Professor of Pharmacology with a strong passion for research in pharmacokinetics, pharmacogenetics, and drug interactions. My primary research focus includes investigating drug-drug and drug-plant interactions using *in vitro*, *in vivo*, and *in silico* approaches, with a specific emphasis on physiologically-based pharmacokinetic (PBPK) modeling. I am particularly interested in exploring genetic polymorphisms in drug metabolism and their implications for personalized medicine, with notable work in the Jordanian population.

My PhD research at the University of Liverpool centred on the inter-individual variability in the pharmacokinetics of oral and long-acting injectable antiretroviral drugs for HIV-1 therapy. I developed and validated high-performance liquid chromatography (HPLC) methods and utilized PBPK modeling to study drug interactions and optimize dosing regimens, contributing to reducing the pill and injection burden for HIV patients.

With extensive experience in bioanalytical techniques, pharmacokinetic modeling, and statistical analysis, I have a proven track record of presenting research at national and international conferences and publishing in peer-reviewed journals. I have also mentored and trained students in advanced laboratory techniques, reinforcing my commitment to academic excellence and capacity-building in scientific research.

In addition to my research achievements, I bring a strong dedication to community impact and pharmacy practice research, aiming to bridge the gap between theoretical pharmacology and practical applications that improve public health and well-being.

Current Role

**Pharmaceutical Research Centre at Zarqa University (Zarqa, Jordan), Biological Research Manager
September 2023 – present**

As a seasoned Biological Research Manager, I excel in driving innovative research initiatives from concept to completion. My expertise encompasses designing, implementing, and reporting research projects while spearheading business development in both animal research facilities and cell culture laboratories. I lead a dynamic team of researchers, assistants, and supervisors, ensuring seamless execution of projects aligned with Good Laboratory Practice (GLP) standards.

In collaboration with the Quality Assurance (QA) department, I play a pivotal role in developing and refining standard operating procedures (SOPs) and associated documentation to maintain rigorous

GLP compliance. My leadership combines technical acumen with strategic oversight, ensuring excellence in research outcomes and fostering a culture of quality and innovation.

Zarqa University (Zarqa, Jordan)

Assistant Professor

September 2018 – present

As a faculty member at the Faculty of Pharmacy, Zarqa University, I am actively involved in delivering undergraduate and postgraduate courses, conducting impactful research, and contributing to the academic and administrative functions of the institution. My administrative responsibilities include chairing various faculty committees, providing academic guidance and counseling to students, and handling additional tasks assigned by the management. These roles reflect my commitment to excellence in education, research, and institutional development.

PhD Research

University of Liverpool (Liverpool, UK)

PhD Student

October 2014 – August 2018

Thesis (*In vitro*, *in vivo* and *in silico* approaches to investigate pharmacokinetics and pharmacogenetics in HIV therapy).

My PhD work investigated the pharmacogenetics of both oral and long-acting (nanomedicine) antiretroviral drugs to treat HIV. Clinical samples of HIV infected patients as well as physiologically-based pharmacokinetic modelling were used for this purpose. The second part of the PhD investigated the drug-drug interactions among co-administered HIV therapies. The experiments involved *in vitro* and *in vivo* work in which samples were analysed using a high-performance liquid chromatography (HPLC) method that I developed during my PhD and radiolabelled material to detect intracellular accumulation of the drug tracer.

Skills and responsibilities

- Experimental design
- Excellent experience in statistical analyses using different software (*e.g.* SPSS, Graphpad)
- Survey development
- Extensive experience of bioanalytical analysis using HPLC
- Facilitating workshops
- Extensive experience of DNA extraction techniques using commercially available kits
- Extensive experience of western blotting techniques
- Extensive experience of real-time PCR
- Extensive experience of *in vitro* mammalian cell culture
- Experience of design and completion of *in vivo* pharmacokinetic rodent models
- Presentation of experimental data at international and national conferences
- Responsible for supporting visiting PhD students, including training and mentoring
- Excellent use of Microsoft Office applications and SPSS
- Excellent use of Opticon (Biorad) and Simbiology (Product of MatLab)
- Extensive experience of PBPK modelling
- Good understanding of population pharmacokinetics
- User of Simulation plus® tools

Professional Experience

Jordan Food and Drug Administration (Amman, Jordan)

Oct 2022- Present

Consultant in Bioequivalence Studies

- Reviewing Module 5 documents
- Review Pharmacokinetic and statistical analyses that were performed based on clinical data
- Preparing reports of data assessment

Jordan Pharmacists Association (Amman, Jordan)

Sep 2022- Present

Member of the Scientific Committee

- Planning of Scientific events
- Speaker in Scientific days
- Moderator

Zarqa University (Zarqa, Jordan)

Sep 2018- Present

Assistant Professor in Molecular and Clinical Pharmacology, Faculty of Pharmacy

- Responsible for teaching Biopharmaceutics and Pharmacokinetics modules and **Biostatistics** for both undergraduate and postgraduate levels. As well as Biochemistry, Clinical Biochemistry and Parapharmaceutics
- Taking part in administrative committees at the Faculty of Pharmacy as well as Business incubator
- Responsible for students' academic guidance
- Conducting scientific research
- Collaborating in extracurricular activities
- Radio presenting at the University's radio
- Policy and regulations development

University of Liverpool (Liverpool, UK)

May 2017 – Aug 2018

PhD mentor

- Responsible for supporting visiting PhD students, including training and mentoring
- Trained the PhD students to DNA extraction, PCR, bioanalysis using HPLC, statistical analysis using SPSS and Graphpad and PBPK model development using MatLab®
- Two research publications have been released for the research work that was conducted during the mentorship period

University of Liverpool (Liverpool, UK)

April 2015 – May 2018

Demonstrator

- Supported the running of Pharmacology practicals as part of the Life234 module
- Assisted undergraduate students during practical sessions
- Marked reports according to a strict marking scheme

Zarqa University (Zarqa, Jordan)

September 2013 – October 2014

Teaching assistant

- Running of Microbiology and Pharmacology practicals for Pharmacy undergraduate students
- Designing of experiments for undergraduate students to investigate *in vitro* and *in vivo* pharmacodynamics of anti-microbial and sympathomimetic agents

Pharmacy one (Zarqa, Jordan)

July 2010 – February 2012

Senior Retail Pharmacist

- Drug dispensing, patient counselling and advice
- Financial and regulatory affairs
- In house stock management
- Setting up new community pharmacies branches
- Designing training programmes for pharmacy trainees

Presentations

In vivo assessment of black seed oil single dose on prednisolone pharmacokinetics. (Talk presentation, Alzaytoonah International Pharmaceutical Conference, 2024, Amman, Jordan)

Development of a Physiologically-Based Pharmacokinetic Model to Predict Empagliflozin-Metoclopramide Interaction in Gastroparesis, (Poster presentation, Alzaytoonah International Pharmaceutical Conference, 2024, Amman, Jordan)

Development of a Physiologically-Based Pharmacokinetic Model to Predict Empagliflozin-Metoclopramide Interaction in Gastroparesis, (Accepted Poster, DMDG 50th open meeting, 2024, York, United Kingdom)

Cross-Sectional Assessment of Pharmacy Students' Knowledge and Perception of Drug-Drug Interactions with Over the Counter Products (Talk presentation, the 16th Jordanian Pharmaceutical Conference, 2023, Amman, Jordan)

Pharmacists' Role in the Management of Drug-drug Interactions: Case Studies (Talk presentation, Jordan Pharmacists' Association 8th Scientific Day, 2023, Amman, Jordan)

In vitro investigation of putative interactions between rilpivirine and dolutegravir (Poster presentation, 8th International Pharmaceutical Conference 2022 (ZIPC2022), Amman, Jordan)

In Silico Simulation of The Impact of Genetic Polymorphisms on Long-Acting Injectable Medicines (talk presentation, Mutah University 2021, Karak, Jordan)

In Silico Simulation of The Impact of Genetic Polymorphisms on Long-Acting Injectable Medicines (Poster presentation at the British Society of Pharmacology annual meeting 2017, London, UK)

*Effect of CYP3A4*2 2on Oral Rilpivirine Plasma Concentrations* (poster presentation at the Conference on Retroviruses and Opportunistic Infections (CROI) 2017, Seattle, WA)

Training

- PKanalix Spring School virtual course for the non-compartmental analysis, bioequivalence and beyond 2022, Lixoft, France
- Pharmacometrics Spring School 2022, Lixoft, France
- Training of trainers (ToT), Spark in collaboration with Zarqa University Business Incubator 2021, Zarqa, Jordan
- The Advanced Training for Faculty Development and Quality Assurance Centres 2018-2019, British Council, Jordan
- Writing Research Grant Proposal, Liverpool, UK
- Associate fellow of the Higher Education Academy (UK)
- Pharmacokinetics in Drug Discovery, DMDG, Loughborough, UK
- Statistical analysis of animal experiments, University of Liverpool
- Liverpool Centre for Cell Imaging (CCI) Annual Imaging Workshop, University of Liverpool
- Introduction to Project Management, University of Liverpool
- Home Office Personal license holder (modules 1-3), University of Liverpool
- ITM Macrophages workshop, University of Liverpool
- How to get your paper published workshop, Elsevier, University of Liverpool
- Enterprise is the future, University of Liverpool
- Public engagement course, NHS
- Human tissue act training session, University of Liverpool
- Radiation Protection and Working Safely with Radioactivity, University of Liverpool
- Good Clinical Practice, NHS
- First year development workshop, University of Liverpool
- Design and analysis of laboratory-based studies and Logistic Regression, University of Liverpool
- Certified Healthcare Quality Practitioner training programme, HCAC, Jordan

Education

University of Liverpool (Liverpool, UK)	2014 - 2018
PhD in Pharmacology	
Jordan University of Science and Technology (Irbid, Jordan)	2004 - 2009
BSc in Pharmacy (GPA 83.4)	
Jordanian High School Exam (Zarqa, Jordan)	2003-2004
Scientific stream (Score 92.9/100)	

Voluntary work

- Radio presenter, Leqaa FM (Zarqa, 2019)
- Think pink activity moderator in collaboration with the Jordan Breast Cancer Program (Zarqa University, 2018)
- PhD students mentoring (Liverpool, 2017)
- British Society for Nanomedicine member's profile improvement (Liverpool, 2016)
- Medical Research Council public engagement event (Meet the Scientist, Liverpool, 2016)

- Library focus group (University of Liverpool, 2015)
- Outreach campaign volunteer at Arab Innovation Network (Liverpool, 2015)

Conference attendance

- Prospects and future of the value-added pharmaceutical industry in Arab countries. Arab Pharma Expo. July, 2024
- OSCE: faculty workshop orientation. August 2024
- Coding with MedDRA: Middle East University. July 2024
- ZIPC 2024, Amman, Jordan
- Bioequivalence, Biowaiver and in vitro release regulations in Jordan. Jordan Food and Drug Administration (organizing committee), Amman, Jordan. September 2023
- 16th Jordanian Pharmaceutical Conference
- Enhancing Paediatric Health: Nutritional Supplements for Prevention and Treatment, JPA's Scientific Committee. Amman, Jordan. August 2023
- Selected Topics in Drug Interactions, Speaker. , JPA's 8th scientific event. Amman, Jordan. July 2023
- Drug information: Resources, Practice and Centres in Jordan. October 2022, JPA's 1st Scientific event (Organizing Committee). Amman, Jordan. October 2022
- 8th International Pharmaceutical Conference 2022 (ZIPC2022)
- The seventh scientific day at the Faculty of Pharmacy - Zarqa University. "Covid-19: Prospects and Challenges". (17th March 2022)
- Erasmus Info day. Yarmouk University. Irbid, Jordan. December 2021
- Erasmus+ CBHE Virtual Fair. October 2021
- Pharmacovigilance awareness webinar. Boehringer Ingelheim. August 2021
- Pharmacists' Role in Reducing Addiction of Drugs, Tobacco and Alcohol: November 2019, Grand millennium, JPA's 8th Scientific event
- Academic induction training: scientific research methodologies, promotion requirements, e-learning and digital teaching techniques, and skills for managing lectures and preparing study plans. It also included university teaching methods, pedagogical strategies, ethics in academic work, and quality assurance practices in higher education. September 2018
- British Pharmacological Society Meeting (London, 2017)
- The 2nd Symposium on Transporters in Drug Discovery and Development (London, 2017)
- European Nanomedicine meeting (London, 2017)
- Conference on Retroviruses and Opportunistic Infections (CROI) 2017, Seattle, WA)
- British Society for Nanomedicine Early Career Researchers meeting (Swansea, 2016)
- Pharmacogenetics and Stratified Medicine Meeting (London, 2016)

Publications

Conference abstracts

Rana Abutaima, Abdallah Alnabelsi. *Development of a Physiologically-Based Pharmacokinetic Model to Predict Empagliflozin-Metoclopramide Interaction in Gastroparesis*. BPS 2024. December 2024, Harrogate, United Kingdom

Rana Abutaima, Rana Abufarha, Samar Thiab, Hamza Alhamad, Fares Albahar, *Cross-Sectional Assessment of Pharmacy Students' Knowledge and Perception of Drug-Drug Interactions with Over the Counter Products*. 16th Jordanian Pharmaceutical Conference. September 2023, Amman, Jordan

Rana Abutaima, Rajith Kumar Reddy Rajoli, Andrew Owen, Marco Siccardi. *In silico* simulation of the impact of genetic polymorphisms on long-acting injectable medicines. British Pharmacology Society Meeting 2017, London, UK; December 11 - 13, 2017. Abstract number PB006.

Rana Abutaima, Marta Boffito, Andrea Calcagno, Jessica Cusato, Antonio D'Avolio, Laura Else, Chris Higgs, Saye Khoo, Marco Siccardi, Andrew Owen. Effect of *CYP3A4**22 on oral rilpivirine plasma concentrations. The 24th Conference on Retroviruses and Opportunistic Infections (CROI). Washington State Convention Centre, Seattle, USA; February 13 - 16, 2017. Abstract number 416.

Research articles

Rana Abutaima, Muna Barakat, Hana Abu Sawan, Shatha Alomari, Nizar Mhaidat. *Knowledge, Attitudes, and Practices towards the Use of GLP-1 Receptor Agonists for Weight Loss among the General Population in Jordan; A Cross-sectional Study*. Plos one 2024.

Hana Sawan; Wejdan Shroukh; **Rana Abutaima**; Shatha Al Omari; Derar Abdel-Qader; Reem Binsuwaitan. *Impact of Jordanian Pharmacists' knowledge of the human microbiome: Has the practice of antibiotics and probiotics dispensing been affected? A cross-sectional study*. Infection and Drug Resistance, 2024

Deema Jaber, Hisham E Hasan, **Rana Abutaima**, Hana M Sawan, Samaa Al Tabbah. *The impact of artificial intelligence on the knowledge, attitude, and practice of pharmacists across diverse settings: A cross-sectional study*. International Journal of Medical Informatics, 2024.

Rana Abutaima, Yousef Al-Ebini, Ahmad Alkofahi, Anas Alshishani, Samar Thiab, Kumarappan C Alagammai, Mohammad Khalid. *In vivo assessment of black seed oil single dose on prednisolone pharmacokinetics*. Journal of Pharmacy and Pharmacology, 2024.

Samar Thiab, Muna Barakat, Razan I Nassar, **Rana Abutaima**, Asem Alsughaier, Faten Odeh, Wael Abu Dayyih. *Knowledge, attitude, and perception of energy drinks consumption among university students in Jordan*. Journal of Nutritional Science, 2023.

Samar Thiab, Safa Daoud, **Rana Abutaima**, Muna Barakat, May Abu Taha. *Natural products and burns: a tough case to crack*. Natural Products for Skin Diseases: A Treasure Trove for Dermatologic Therapy. Bentham Science Publishers. 2023

Rana Abutaima, Rana Abufarha, Samar Thiab, Hamza Alhamad, Fares Albahar. Pharmacy Practice December 2023. *Cross-Sectional Assessment of Pharmacy Students' Knowledge and Perception of Drug-Drug Interactions with Over the Counter Products*. Pharmacy Practice (Granada), 2023

Samar Thiab, **Rana Abutaima**, Muna Barakat, Safa Daoud, May Abu-Taha, Reem Abutayeh. *Khella (Ammi visnaga): Molecular and Cellular Aspects and Potential in Biomedicine*. CRC July 2023

Ala'a B Al-Tammemi, Asma Nadeem, Laila Kutkut, Manal Ali, Khadijah Angawi, Maram H Abdallah, **Rana Abutaima**, Rasha Shoumar, Rana Albakri, Malik Sallam. *Are we seeing the unseen of human trafficking? A retrospective analysis of the CTDC k-anonymized global victim of trafficking data pool in the period 2010–2020*. PLoS one April 2023.

B Ala'a, Malik Sallam, Asem Rebhi, Laarni Soliman, Lina Al Sarayrih, Zeinab Tarhini, **Rana Abutaima**, Musheer A Aljaberi, Muna Barakat. *The outbreak of Ebola virus disease in 2022: A spotlight on a re-emerging global health menace*. Narra J December 2022

Samar H Thiab, Muna M Barakat, Rajaa A Al-Qudah, **Rana Abutaima**, Rahma Jamal, Philip Riby. *The Perception of Jordanian Population towards Concomitant Administration of Food, Beverages and Herbs with Drugs and Their Possible Interactions: A Cross Sectional Study*. International Journal of Clinical Practice Oct 2020.

Adebanjo Jonathan Adegbola, **Abutaima Rana**, Babatunde Ayodeji Adeagbo, Rahman A Bolarinwa, Adeniyi Ebenezer Olagunju, Marco Siccardi, Andrew Owen, Oluseye Oladotun Bolaji. *Influence of selected polymorphisms in disposition genes on lumefantrine pharmacokinetics when coadministered with efavirenz*. Pharmacogenetics and Genomics Jul 2020.

Adebanjo Adegbola, **Rana Abutaima**, Adeniyi Olagunju, Omotade Ijarotimi, Marco Siccardi, Andrew Owen, Julius Soyinka, and Oluseye Bolaji. *Effect of pregnancy on the pharmacokinetic interaction between efavirenz and lumefantrine in HIV-malaria co-infection*. Antimicrobial agents and chemotherapy Oct 2018.

Manuscripts in preparation

Development of a Physiologically-Based Pharmacokinetic Model to Predict Empagliflozin-Metoclopramide Interaction in Gastroparesis.

Submitted Manuscripts

Magnesium Matters: A Cross-Cultural Analysis of Knowledge, Attitudes, and Practices in Arab Communities. *European Journal of Public Health*. Authors: **Rana Abutaima**, Muna Brakat, Samar Thiab, Hana M. Sawan, Malak Amer, Reem Alzayer, Doaa H Abdelaziz, Noha O. Mansour, Fatima Saleh, Wael Abu Dayyih.

Bridging the Gap in Understanding Viral-Induced Wheezing between Parents and Healthcare Professionals: A Public Health Perspective. *Journal of Tropical Medicine*. Authors: Shatha Alomari, Muna Brakat, Hana M. Sawan, **Rana Abutaima**.

Significance of the Clinical Pharmacist Role in Identification, Classification and Management of Medication Errors in Neonatal Intensive Care Unit. *Advances in Neonatal Care*. Deema Jaber, Sukaina Al-Shihadeh, **Rana Abutaima**.

Exploring Glucagon-Like Peptide-1 Receptor Agonists Usage among Non-Diabetic Healthcare Providers: A Multi-Country Study. Health Science Reports. Nashwan, Abdulqadir; Abukhadijah, Hana J.; Karavadi, Vidusha; Aqtam, Ibrahim; Ibraheem, Anas; palanivelu, prakash; Khedr, Mahmoud A.; Agga, Abdulkarim O.; Rehman, Obaid Ur; Fatima, Eeshal; Asal, Mohammad A. Abu; **Abutaima, Rana**; Shaban, Marwa M.; Shaban, Mostafa; Barakat, Muna; Aldosari, Nasser M.; Alomari, Albara M.; A.Aljariri, Adham; Allobaney, Nabeel; Othman, Mutaz I.; Abujaber, Ahmad; Bastaki, Kholoud.

Assessment of knowledge, attitude, and practices towards the usage of antidiabetic drugs for weight loss among Lebanese population. Nature Scientific Reports. Fatima Saleh, **Rana Abutaima**, Samer Alkharoubi.

Distinctive expression of pro-inflammatory genes after doxorubicin administration on human liposarcoma tumors reveals critical pathways and networks/ involvement of TGFB1, TNF and SMARCA4 regulators; bioinformatics analysis using Ingenuity Pathway Analysis Tool. Cancer Genetics. Anas khaleel, **Rana Abutaima**; Hani Omar; Abdallah Elbakkoush; Wael Abu Dayyih

Funds

Funded research: Investigating molecular mechanisms of possible plant-drug interactions perpetrated by *Salvia triloba*. Funded by Zarqa University, Jordan

Funded research: Determination of selected antihypertensive in rat plasma using high performance liquid chromatography (HPLC) and the study of the possible effects of single dose and short-term administration of apple juice and blueberry juice on their pharmacokinetics. Funded by Applied Science Private University (DRUGS-2019-2020-86).

Funded research: *In vivo* Assessment of Black Seed Oil Single Dose on Prednisolone Pharmacokinetics. Funded by King Khaled University, Kingdom of Saudi Arabia (RGP2/195/44).

Editorial Board Membership

Member of the editorial board of Jordan Journal of Applied Science.

Peer-reviewing activities

- Plos one
- Heliyon
- Saudi Pharmaceutical Journal
- Saudi Journal of Clinical Pharmacy
- Journal of Pharmaceutical Health Services Research
- Drug Development and Industrial Pharmacy
- Currents in Pharmacy Teaching and Learning
- Jordan Journal of Pharmaceutical Sciences
- Stem Cells International

- ACOP 2024 conference, abstracts reviewer

Examining Experience

Internal examiner:

- OSCE exam: Faculty of Pharmacy, Zarqa University
- Sukaina Alshehada. Clinical Pharmacist Role in Identification, Classification and Management of Medication Errors in Neonatal Intensive Care Units. Zarqa University. Master's degree
- Tamadur Mohammad Olaimat. Galactagogue effect of selected medicinal plant extracts on milk production in female wistar rats. Zarqa University. Master's degree.
- Rouzan Akram Alfarahteh. Pharmacy Students' and Examiners' Views on OSCE Exam Clinical Skills and Competencies Assessment. Zarqa University. Master's degree
- Teeba Omar. Formulation and evaluation of nanoparticle loaded in situ gel for nasal drug delivery of imipramine hydrochloride to the brain. Zarqa University. Master's degree
- Teeba Omar: Formulations and evaluation of nanoparticle - loaded in situ gel for nasal drug delivery of imipramine hydrochloride to the brain, Zarqa University. Master's degree

External examiner:

- Tarini A/P Veerappan: A Study Investigating The Effect of Mesenchymal Stromal Cells Derived Secretome In Regulating The Phenotypic Switching Of Monocyte Differentiated Macrophage, University of Malaya, Malaysia

Services

- 2024-present: Chair of the academic guidance committee, Zarqa University
- 2024-present: Member of the curriculum committee, Zarqa University
- 2022-present: Member of the Bioequivalence studies assessment committee, Jordan Food and Drug Administration
- 2022-2024: member of the scientific committee- Jordanian Pharmaceutical Association.
- 2022-2024: Chair of the academic programs committee, Zarqa University
- 2023-2024: Member of the website committee, Zarqa University
- 2022-2023: Chair of the academic exchange committee, Zarqa University
- 2022-2023: Chair of the Qualification placement committee, Zarqa University
- 2022-2023: Member of the exam committee, Zarqa University
- 2022-2023: Member of the quality assurance committee, Zarqa University
- 2021-2022: Business incubator liaison officer, Business incubator, Zarqa University
- 2021-2022: Member of the Library committee, Zarqa University
- 2021-2022: Member of the students' affairs committee, Zarqa University
- 2021-2022: Member of the academic programs committee, Zarqa University
- 2020-2021: Chair of the library committee, Zarqa University
- 2020-2021: Chair of the exam committee, Zarqa University
- 2019-2020: Chair of the academic guidance committee, Zarqa University
- 2018-2019: Chair of the website committee, Zarqa University
- 2018-2019: Chair of the international relations committee, Zarqa University

Professional Memberships

- Jordanian Pharmacists Association- Jordan
- International Society of Pharmacometricians (ISOP)- USA
- Higher Education Academy

References

Excellent references are available upon request.