

CURRICULUM VITAE

1. PERSONAL DATA

Name: Mo'tasem M. Alsmadi
Date of Birth: 7/1/1985
Place of Birth: Irbid, Jordan
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2. BIOGRAPHY:

Dr. Motasem Alsmadi, an associate professor of biopharmaceutics and pharmacokinetics with a joint appointment between the Nanotechnology Institute and The Pharmaceutical Technology department in the faculty of pharmacy at J.U.S.T. He got his BSc in pharmacy -ranking the first in his batch- from J.U.S.T. in 2009, after which he was sponsored by J.U.S.T. to pursue his graduate studies in the pharmaceutical technology program at The University of Iowa from which he got his Ph.D. degree on December 2014. Then, Dr. Alsmadi worked as an assistant professor of pharmaceutical technology at the Pharmacy School at JUST till September 2020. During that period, Dr. Alsmadi worked as an assistant dean at the Pharmacy School and also as an assistant dean at the Graduate Studies School.

In September 2020, Dr. Alsmadi was promoted to an associate professor. Then, in January 2023, Dr. Alsmadi was appointed as a joint professor in the Nanotechnology Institute. During this joint appointment, Dr. Alsmadi taught graduate-level courses and supervised master's students at the Nanotechnology Institute. This is in addition to Dr. Alsmadi's involvement in teaching undergraduate (B.Sc and Pharm D.) and graduate (MSc, and Ph.D.) courses and supervision of master's students at Pharmacy School. As part of national service, Dr. Alsmadi served as a member of the JFDA Bioavailability and Bioequivalence Committee for two years (10/2019- 10/2021).

Dr. Alsmadi has been involved in research related to the preparation and optimization of novel nano and micro drug delivery systems for pancreas, liver, brain, and lung delivery to treat diseases like COVID-19, cancer, insomnia, diabetes, and hypercholesteremia. Also, Dr. Motasem pursued preclinical and clinical research using physiologically-based pharmacokinetic (PBPK) modeling on anticancer drugs in the presence of modified body physiology induced by cancer, renal impairment, IBS, IBD, and pregnancy. Also, therapeutic drug monitoring of drugs in saliva to optimize dosing regimens was among the research interests of Dr. Alsmadi. This is in addition to Dr. Alsmadi's involvement in the evaluation of newborn safety after intrauterine exposure to maternal opioids used during pregnancy. Overall, Dr. Alsmadi has expertise in *in-vitro*, *in-vivo*, and *in-silico* tools used for safety, biopharmaceutics, toxicokinetics, and pharmacokinetics analysis.

3. ACADEMIC/PROFESSIONAL PARTICULARS

(a) Field of Specialization:

Pharmaceutics/ Biopharmaceutics and Pharmacokinetics.
Nanomedicine and *in vivo* safety and toxicokinetics of drug delivery systems.

(b) Academic Qualifications

Ph.D., Pharmaceutics, 2014, University of Iowa, USA, Dissertation Title: Physiologically based pharmacokinetic (PBPK) model of Ivermectin (IVM), GPA = 3.84

BSc, Pharmacy, 2008, Jordan University of Science and Technology, Jordan, Dissertation Title: NA, GPA = 91.9% (Rank 1st on batch)

(c) Academic Honors and Awards

Ranking 1st in 2003 Batch of BSc. in Pharmacy, Jordan University of Science and Technology, 2003-2008

4. CAREER DETAILS

(a) Academic Positions Held

Associate Professor, Nanotechnology Institute, Jordan University of Science and Technology, Jordan, Period (01/2023- Now)

Associate Professor, College of Pharmacy, Jordan University of Science and Technology, Jordan, Period (09/2020- Now)

Assistant Professor, College of Pharmacy, Jordan University of Science and Technology, Jordan, Period (12/2014- 08/2021)

(b) Professional/Industrial Positions Held

Medical Representative, Gynecology Department, Bayer Schering Pharma, Jordan, Period (01/2008-10/2008)

(c) Administrative Positions Held (Dates: MM/YY-MM/YY)

Vice Dean, Nanotechnology Institute, Jordan University of Science and Technology, Jordan, Period (09/2023- Now)

Assistant Dean, Deanship of Graduate Studies, Jordan University of Science and Technology, Jordan, Period (09/2019- 09/2021)

Assistant Dean, College of Pharmacy, Jordan University of Science and Technology, Jordan, Period (09/2015- 09/2019)

5. TEACHING

(a) Summary of Courses Taught

- Nano 700: Introduction to Nanoscience and Nanotechnology, Taught once, Excellent evaluation
- Phar456, Bio Pharmaceutics and Pharmacokinetics, Taught fourteen times, Excellent evaluation

- Phar 553, Clinical Pharmacokinetics (For Pharm D Students), Taught fifteen times, Excellent evaluation
- Phar401, Pharmaceutical Practical Training, Taught three times, Excellent evaluation
- Phar 402, Community Pharmacy (For Pharm.D Students, Phar 402), Taught twice, Excellent evaluation
- Phar 351, Pharmaceutics 1, Taught once, Excellent evaluation
- Phar 756, Biopharmaceutics and Pharmacokinetics (For Masters students), Taught twice, Excellent evaluation
- Phar 951, Advanced Biopharmaceutics and Pharmacokinetics (For Ph.D. students), Taught twice, Excellent evaluation

(b) Participation in Academic Accreditation

ACPE, Preparation of files needed for ACPE Accreditation, Institution, ACPE, Period (09/2017-09/2019)

(c) Research Students Supervised/Trained

Postdoctoral Fellows: NA
 PhD Students: 6
 Master Students: 15
 Undergraduate Students: 150 students

(d) Participation in Thesis and Oral Examination Committees

Ph.D. Students: 6
 Master Students: 8

(e) Training

- Creative teaching in university education, Jordan University of Science and Technology, Jordan, Period (06/1-2/2015)
- Statistical analysis in scientific research, Jordan University of Science and Technology, Jordan, Period (1/31/2016 – 2/1/2016)
- Statistical analysis Using Minitab, Jordan University of Science and Technology, Jordan, Period (01/16-17/2017)
- Statistical analysis Using R, Jordan University of Science and Technology, Jordan, Period (01/25-26/2017)
- Problem-based learning, Jordan University of Science and Technology, Jordan, Period (01/10-11/2018)

- Applying the matrix of criteria for quality control of the design of electronic courses from Quality Matters Institution, Jordan University of Science and Technology, Jordan, Period (06/1-2/2022)
- Evaluation of the teaching process and scientific research to increase the level of student's success and the mechanisms of activating their participation in large classes, Jordan University of Science and Technology, Jordan, Period (06/1-2/2022)
- Communication skills and their impact on changing behaviors and ideas, developing multiple intelligences, and solving educational problems, Jordan University of Science and Technology, Jordan, Period (08/10-11/2022)
- Effective e-learning design, Jordan University of Science and Technology, Jordan, Period (08/17-18/2022)

6. RESEARCH

(a) Research Interests

- Physiologically-based Pharmacokinetics
- Biopharmaceutics and Pharmacokinetics
- Nanomedicine and *in vivo* safety and toxicokinetics of drug delivery systems.

• (b) Publications/Citations Data

Type of Publication/ Number of Publications

Articles in International Refereed Journals: 17

Conference Papers: 2

Citation Source Number of Citations: Scholar Google: 147 citations

(c) Research Grants

- Local University Fund for Master's Thesis, Principle Investigator, Formulation and evaluation of oral administration of cilnidipine nanocrystals for treatment Hypertension diseases by enhancement solubility and dissolution rate, Jordan University of Science and Technology, (07/2023 – Present), USD 7,700
- Local University Fund for Master's Thesis, Co-Investigator, Physiologically-Based Pharmacokinetics of a Novel Hydroxychloroquine Formulation Prepared Using Supercritical Fluid Technology for Pulmonary Administration, Jordan University of Science and Technology, (08/2021 – 01/2023), USD 8,000
- Local University Fund for Master's Thesis, Principle Investigator, Effect of Inflammatory Bowel Disease and Irritable Bowel Syndrome on The Bioavailability of Statins, Jordan University of Science and Technology, (01/2020 – 01/2022), USD 8,000
- Local University Fund for Master's Thesis, Principle Investigator, The Effect of Acute And Chronic Renal Failure On The Pharmacokinetics of Bexarotene, Jordan University of Science and Technology, (05/2020 – 06/2022), USD 8,000

Updated on 08/23/2023

- Local University Fund for Master's Thesis, Co-Investigator, The development of a population physiologically based pharmacokinetic model for mycophenolic mofetil and mycophenolic acid in humans using data from plasma, saliva, and kidney tissue, University of Petra, (02/2017 – 10/2018), USD 6,000
- Local University Fund for Personal Research, Principle Investigator, The effect of renal impairment on the hepatic metabolism of atomoxetine, Jordan University of Science and Technology, 2017 – 2019, USD 20,000
- Local University Fund for Personal Research, Principle Investigator, The study of the in vitro physiochemical and pharmacokinetic properties of the potent anticancer drug (QNH-558), Jordan University of Science and Technology, 2016 – 2018, USD 20,000

(d) Participation in Regional and International Conferences

2nd International Conference on Pharmacology and Toxicology, Dubai/ United Arab Emirates, 14 /11/2022- 15/11/2022

7. SERVICE

(a) Membership of Institutional, National, or International Scientific Advisory Boards

Bioequivalence Evaluation Committee, Jordanian Food and Drug Administration, Board Member, (10/2019- 10/2021)

(b) Membership of Conference Committees

Conference Scientific Committee, Member, 3rd Pharmacy Conference, Jordan University of Science and Technology, Irbid/ Jordan, 09/2022 - Now
 Conference Scientific and Organizing Committee, Organizer and Head of Committee, Five Minutes Talk Competition for Graduate Students, Jordan University of Science and Technology, Irbid/ Jordan, 09/2021 - 09/2022

(c) Service as Reviewer

- AAPS PharmSciTech, ISSN No. 1530-9932, Springer (since 01/2020)
- International Journal of Pharmaceutics, ISSN No. 0378-5173, Elsevier (since 02/2022)

(d) Membership of Journal Editorial Boards

Guest Editor in Frontiers of Pharmacology, Research Topic: "Saliva vs. Plasma Clinical Studies for Therapeutic Drug Monitoring", ISSN No. 1663-9812, Frontiers Media S.A. (since 06/2022)

(e) Invited Presentations at Scientific Meetings/Workshops

The Use of Salivary Therapeutic Drug Monitoring (TDM) Guided by Physiologically-based Pharmacokinetic (PBPK) Modeling in The Optimization of Pharmacotherapy, 2nd International Conference on Pharmacology and Toxicology, Dubai/ United Arab Emirates, 14 /11/2022- 15/11/2022

(f) University Service

- Jordan University of Science and Technology, Jordan, (09/2023-Now), Member of Graduate Studies School Council (Representative of Nanotechnology Institute)
- Jordan University of Science and Technology, Jordan, (09/22-09/2023), Member of University Council
- Jordan University of Science and Technology, Jordan, (09/17 - 09/2018), Member of Pharmacy School Council
- Jordan University of Science and Technology, Jordan, (09/2021 - 09/2022)
 1. Head of Pharmacy School Quality Control Committee
 2. Member of Pharmacy School Scientific Committee
 3. Member of Pharmacy School Peer Assessment Committee
 4. Member of Pharmacy School General Safety Committee
- Jordan University of Science and Technology, Jordan, (09/2022 - now)
 1. Member of Pharmaceutics Department Peer Assessment Committee
 2. Head of Pharmaceutics Department Pharmacokinetics Focus Group

(g) Service to Profession/Industry

Bioequivalence Evaluation Committee, Jordanian Food and Drug Administration, Board Member, (10/2019- 10/2021)

8. LIST OF PUBLICATIONS IN INTERNATIONAL REFEREED JOURNALS

1. **Alsmadi, M.M.** Evaluating the Pharmacokinetics of Fentanyl in the Brain Extracellular Fluid, Saliva, Urine, and Plasma of Newborns from Transplacental Exposure from Parturient Mothers Dosed with Epidural Fentanyl Utilizing PBPK Modeling. *Eur J Drug Metab Pharmacokinet* (2023). <https://doi.org/10.1007/s13318-023-00842-8>
2. **Alsmadi, M.M., Jaradat, M.M., Obaidat, R.M. et al.** The *In Vitro*, *In Vivo*, and PBPK Evaluation of a Novel Lung-Targeted Cardiac-Safe Hydroxychloroquine Inhalation Aerogel. *AAPS PharmSciTech* **24**, 172 (2023). <https://doi.org/10.1208/s12249-023-02627-3>
3. **Alsmadi, Mo'tasem M., and Nasir Idkaidek.** The Analysis of Pethidine Pharmacokinetics in Newborn Saliva, Plasma, and Brain Extracellular Fluid After Prenatal Intrauterine Exposure from Pregnant Mothers Receiving Intramuscular Dose Using PBPK Modeling. *European Journal of Drug Metabolism and Pharmacokinetics*. Springer Nature (USA). 1-20. **2023**
4. **Alsmadi M, Alzughoul S.** IVIVE of Bexarotene Metabolism in The Presence of Chronic Kidney Disease and Acute Kidney Injury in Rat Using PBPK Modeling and Extrapolation to Human. *Biopharmaceutics & Drug Disposition*. Wiley-Blackwell (UK). **2022**: Nov

5. **Mo'tasem MA.** The investigation of the complex population-drug-drug interaction between ritonavir-boosted lopinavir and chloroquine or ivermectin using physiologically-based pharmacokinetic modeling. *Drug Metabolism and Personalized Therapy*. Walter de Gruyter (Germany). **2022**: Oct 10.
6. **Alsmadi MM,** Al-Nemrawi NK, Obaidat R, Abu Alkahi AE, Korshed KM, Lahlouh IK. Insights into the mapping of green synthesis conditions for ZnO nanoparticles and their toxicokinetics. *Nanomedicine, Future Medicine Ltd.* (UK). 1281-303. **2022**.
7. **Alsmadi MM,** Al-Daoud NM, Obaidat RM, Abu-Farsakh NA. Enhancing Atorvastatin In Vivo Oral Bioavailability in the Presence of Inflammatory Bowel Disease and Irritable Bowel Syndrome Using Supercritical Fluid Technology Guided by wbPBPK Modeling in Rat and Human. *AAPS PharmSciTech.* Springer Nature (USA).1-20. **2022**.
8. **Alsmadi, M. M.,** L. N. Al-Eitan, N. M. Idkaidek, and K. H. Alzoubi. "The Development of a PBPK Model for Atomoxetine Using Levels in Plasma, Saliva and Brain Extracellular Fluid in Patients with Normal and Deteriorated Kidney Function." *CNS & Neurological Disorders Drug Targets*, Bentham (United Arab Emirates). 704-716. **2022**.
9. **Alsmadi, Mo'tasem M.,** Nour M. AL-Daoud, Mays M. Jaradat, Saja B. Alzughoul, Amani D. Abu Kwiak, Salam S. Abu Laila, Ayat J. Abu Shameh, Mohammad K. Alhazabreh, Sana'A. A. Jaber, and Hala T. Abu Kassab. Physiologically-based pharmacokinetic model for alectinib, ruxolitinib, and panobinostat in the presence of cancer, renal impairment, and hepatic impairment. *Biopharmaceutics & Drug Disposition*, Wiley-Blackwell (UK). 263-284. **2021**.
10. Obaidat, Rana, Haneen Aleih, Hadeia Mashaqbeh, Bashar Altaani, **Mo'tasem M. Alsmadi,** and Mohammad Alnaief. Development and evaluation of cocoa butter taste-masked ibuprofen using supercritical carbon dioxide. *AAPS PharmSciTech.* Springer Nature (USA). 2021: 1-13.
11. Alnaief, Mohammad, Rana M. Obaidat, and **Mo'tasem M. Alsmadi.** Preparation of Hybrid Alginate-Chitosan Aerogel as Potential Carriers for Pulmonary Drug Delivery. *Polymers. Multidisciplinary Digital Publishing Institute (Switzerland).* 2223. **2020**.
12. Idkaidek, Nasir, Salim Hamadi, Rabab Bani-Domi, Ibrahim Al-Adham, **Motaseem Alsmadi,** Faten Awaysseh, Hisham Aqrabawi, Ahmad Al-Ghazawi, and Ayman Rabayah. Saliva versus Plasma Therapeutic Drug Monitoring of Gentamicin in Jordanian Preterm Infants. Development of a Physiologically-Based Pharmacokinetic (PBPK) Model and Validation of Class II Drugs of Salivary Excretion Classification System. *Drug Research*, Thieme (Germany). 455-462. **2020**.
13. **Mo'tasem M. Alsmadi,** Rana M. Obaidat, Mohammad Alnaief, Borhan Aldeen Albiss, Nabil Hailat. Development, In-Vitro Characterization and In-Vivo Toxicity Evaluation of Chitosan-Alginate Nanoporous Carriers Loaded with Cisplatin for Lung Cancer Treatment. *AAPS PharmSciTech.* Springer Nature (USA). 1-12. **2020**.
14. **Alsmadi, Mo'tasem M;** Alfarah, Mahdi Qasem; Albderat, Jawaher; Alsalaita, Ghazi; AlMardini, Reham; Hamadi, Salim; Al-Ghazawi, Ahmad; Abu-Duhair, Omar; Idkaidek, Nasir. The development of a population physiologically based pharmacokinetic model for

mycophenolic mofetil and mycophenolic acid in humans using data from plasma, saliva, and kidney tissue. *Biopharmaceutics & drug disposition*. Wiley-Blackwell (UK). 325-340. **2019**.

15. Masadeh, Rafeef, Rana Obaidat, **Mo'tasem Alsmadi**, Bashar Altaani, Mai Khanfar, Rawda Alshyab, and Mohammed Qaoud. Technical Insight into Biodegradable Polymers Used in Implants. *Jordan Journal of Pharmaceutical Sciences*. University of Jordan (Jordan). **2018**.
16. **Alsmadi, Mo'tasem M.**, and Nasir Idkaidek. Optimization of Drugs Pharmacotherapy During Pregnancy Using Physiologically Based Pharmacokinetic Models-An Update. *Current drug metabolism, Bentham (United Arab Emirates)*. 972-978. **2018**.
17. Khanfar, Mai, Bashar Al-Taani, **Motasesm Alsmadi**, and Aref Zayed. Enhancement of the dissolution and bioavailability from a freeze-dried powder of a hypocholesterolemic drug in the presence of Soluplus. *Powder Technology*. Elsevier (Netherlands). 25-32. **2018**.
18. Baltzley, Sarah, Azzam A. Malkawi, **Motasesm Alsmadi**, and Abeer M. Al-Ghananeem. Sublingual spray drug delivery of ketorolac-loaded chitosan nanoparticles. *Drug development and industrial pharmacy*. Taylor & Francis (UK). 1467-1472. **2018**.
19. AlSheyyab, Rawda Y., Bashar M. Al-Taani, Rana M. Obeidat, **Motasesm M. Alsmadi**, Rafeef K. Masaedeh, and Raghda N. Sabat. Delivery of Peptidic Gonadotropin Releasing Hormone Antagonists. *Current drug delivery*. Bentham (United Arab Emirates). 602-609. **2018**.
20. Alefan, Qais, and **Mo'tasem M. Alsmadi**. Pharmacy education in Jordan: updates. *International Journal of Pharmacy Practice*. Oxford University Press (UK). 418-420. **2017**.

9. REFERENCES

- Prof. Borhan Aldeen Albiss/ Jordan University of Science and Technology, Jordan, email: baalbiss@just.edu.jo
- Prof. Rana Obaidat/ University of Jordan, Jordan, email: r.obaidat@ju.edu.jo
- Prof. Nasir Idkaidek/ University of Petra, Jordan, email: nidkaidek@uop.edu.jo
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