

Curriculum Vitae

Abeer Al-Ghananeem, B.Sc. Pharm, M.Sc., Ph.D.

Dean

Professor of Pharmaceutics and Biopharmaceutics

Ajman University College of Pharmacy and Health Sciences

Ajman, UAE

Email: a.alghananeem@ajman.ac.ae

- Academic Leadership Fellow (ALFP) at the American Association of Colleges of Pharmacy (AACCP).
- Past Chair and Past Commissioner of the Accreditation Council for Pharmacy Education (ACPE), International Services Program.
- Global Lead for Quality Assurance at the International Pharmaceutical Federation (FIP).

Over 20 years of pharmaceutical experience with increasing levels of influence as a contributor/subject matter expert in pharmaceutical drug development and drug delivery research, curriculum development (BS, PharmD, MS, & PhD), competencies development, quality assurance, accreditation standards in international pharmacy education and practice.

- Proficient in curriculum development, competencies development, quality assurance, and accreditation standard in international pharmacy education and practice.
- Expertise in clinical trials designs, IRB protocols development/design and management.
- Review intellectual property literature and draft IP strategies using innovative approaches.
- Developed pharmaceutical formulations and dosage forms for Rx, dietary supplements, OTC, and 510K medical devices.
- Managed pharmaceutical products lifecycle with emphasis on super generic products design for 505B2 approaches.
- Expertise in Chemistry, Manufacturing and Controls (CMC) matters related to ANDA and NDA regulatory filings.

ACADEMIC & RESEARCH EXPERIENCE:

- Design and moderate inter professional education (IPE) and OSCE sessions.
- Implement active teaching techniques and team building in pharmacy education.
- Biopharmaceutics/pharmacokinetic product *in vivo* drug delivery performance evaluation.
- ~\$3 M + in grants/contracts as Principal Investigator and Co-PI
- 90 + scientific publications/abstracts and patents or patents families pending.
- Citation Report (Google Scholar): h-index:18, i10-index: 30, Sum of Times Cited: 1451
- Lead CMC teams during FDA panel review and discussions.
- Successful academic-industrial research collaboration that culminates into several FDA approved drugs for malignant hyperthermia, cancer, pain, addiction, and others such as Revonto[®], Valchor[®], SubSys[®] and Lucemyra[®]. In addition, several dietary supplement products for ADHD, Anxiety, sleep, and others such as such as Luciplex[®], Noctoplex[®], Addivance[®], and Calmposure[®].
- Received national and international media attention for a cavity-fighting gum project funded by the Department of Defense Dental Research Foundation.
- Designed and coordinated advanced drug delivery and pharmaceutics courses to enhance student engagement and learning.
- Served on nationwide and international research grants and peer journals review panels.

EDUCATION:

- 2014 Fellow, Academic Leadership Fellows Program (ALFP), Alexandria, Virginia, American Association of Colleges of Pharmacy (AACP).
- 1999 Ph.D. & M.Sc., Pharmaceutical Sciences (Pharmaceutics & Biopharmaceutics) (with Distinction), College of Pharmacy, University of Kentucky, Lexington, KY United States of America
- 1993 B.Sc. Pharmacy (with Distinction), College of Pharmacy, Jordan University, Amman, Jordan

SELECTED LICENSURE & TRAINING:

- 2015 ICH guidelines Regulatory Affairs and Quality by Design (QbD) training
- 2003-2004 University of Kentucky, Lexington, KY - Post Doctorate Fellow, Industrial Pharmacy & Drug Delivery
- 2002-2003 University of Kentucky, Lexington, KY - Post Doctorate Fellow, Pharmaceutical Technology & Drug Delivery
- 1993-present Registered Pharmacist (RPh), Jordan

ADMINISTRATIVE & LEADERSHIP EXPERIENCE:

- 2024-present **Dean** Ajman University College of Pharmacy and Health Sciences. Ajman, UAE.
- 2022-2024 **Associate Dean of Research**, Sullivan University College of Pharmacy and Health Sciences. KY, USA.
- 2019-2021 **Director of Research**, Sullivan University College of Pharmacy and Health Sciences. KY, USA.
- 2018-present **Board of Trustee member**, Talal Abu-Ghazaleh University College for Innovation (TAGUCI), Amman, Jordan
- 2019-present **Global Lead**, FIP Quality Assurance Workforce Development Hub.
- 2017-2023 **International Commissioner, Vice Chair/Chair-Elect** for the Accreditation Council for Pharmacy Education (ACPE)'s International Services Program.
- 2017-2019 **Vice Dean, Accreditation, Quality Assurance & Assessment** Faculty of Pharmacy. Jordan University of Science and Technology. Irbid, Jordan
- 2016 **Official Delegate for Jordan, International Pharmaceutical Federation (FIP)** at the Global Conference on Pharmacy and Pharmaceutical Sciences Education. Nanjing, China.
- 2012-2016 **Associate Dean for Research and Graduate Program at Sullivan University**
- 2008-2012 **Vice President Scientific Affairs at US WorldMeds, LLC, KY, USA.**

POSITIONS & ACADEMIC APPOINTMENTS:

2024-present Professor
Ajman University College of Pharmacy and Health Sciences. Ajman, UAE.

2019-2024 Professor
Sullivan University, College of Pharmacy, Department of Pharmaceutical Sciences. KY, USA

2020-2023 Professor (Adjunct)
College of Pharmacy, Department of Pharmaceutical Sci. University of Kentucky. KY, USA

2016-2019 Professor (Adjunct)
Sullivan University, College of Pharmacy, Department of Pharmaceutical Sciences. KY, USA

2017-2019 Professor
Jordan University of Science and Technology, Faculty of Pharmacy. Irbid, Jordan

2016-2017 Visiting Professor
Al-Zaytoonah University of Jordan, College of Pharmacy. Amman, Jordan

2013-2016 Professor
Sullivan University, College of Pharmacy, Department of Pharmaceutical Sciences. KY, USA

2012-2013 Associate Professor
Sullivan University, College of Pharmacy, Department of Pharmaceutical Sciences. KY, USA

2011-2012 Visiting Professor
Jordan University, College of Pharmacy. Amman, Jordan

2010-2011 Associate Professor, PT
University of Kentucky, College of Pharmacy, Department of Pharmaceutical Sciences, Division of Drug Development and Delivery. KY, USA

2009-2012 Associate Professor, PT
Sullivan University, College of Pharmacy, Department of Pharmaceutical Sciences. KY, USA

2005-2009 Assistant Professor
University of Kentucky, College of Pharmacy, Department of Pharmaceutical Sciences, Division of Drug Development and Delivery. KY, USA

2003-2004 Research Associate, Postdoctoral Fellow
University of Kentucky, College of Pharmacy, Department of Pharmaceutical Sciences. KY, USA

2002-2003 Postdoctoral Scholar Fellow
University of Kentucky, College of Pharmacy, Department of Pharmaceutical Sciences. KY, USA

2001-2002 Pharmaceutical Internship
Eckerd Pharmaceutical Company. KY, USA

2000-2001 Assistant Professor
University of Jordan, College of Pharmacy, Department of Pharmaceutical Sciences. Amman, Jordan

1996-1999 Teaching Assistant, Graduate Student
University of Kentucky, College of Pharmacy, Department of Pharmaceutical Sciences, Division of Drug Development and Delivery. KY, USA

1993-1996 Lecturer, Teaching Assistant
University of Jordan, College of Pharmacy, Department of Pharmaceutical Sciences. Amman, Jordan

SELECTED PROFESSIONAL SERVICE:

2021-Present Associate Editor, Pharmacy Education, FIP Journal.
2018-Present Associate Editor, Journal of Clinical & Experimental Pharmacology.

2013-Present Editorial Advisory Board member, Journal of Advanced Research
 2013-Present Member, AACP Curriculum Committee of the Graduate Education SIG.
 2013-Present Member, American Association of Pharmaceutical Scientists (AAPS) Targeted Drug Delivery & Prodrug Focus Group Committee.
 2009-Present Member, Ohio Valley Affiliates for Life Sciences (OVALS).
 2002-present Member, AAPS Inhalation and Nasal Technology Focus Group.
 2012-2024 Member, Kentucky Nanotechnology Symposium Steering Committee - University of Louisville, University of Kentucky, Sullivan University and Western Kentucky University.
 2014-2017 Member, American Association of Colleges of Pharmacy (AACP) Leadership Development Special Interest Group (SIG)
 2013-2015 Reviewer, American Association of Colleges of Pharmacy (AACP) Express Scripts Scholarship Program
 2013-2015 Chair, AACP Soft Skills in Graduate Education Sub-Committee
 2013-2015 Member, AACP Teachers of Pharmaceutics Section (TOPS) Annual Meeting Program Committee

CONSULTANCIES:

Adams Respiratory Therapeutics Inc, USA
 Ceptaris Therapeutics Inc, USA
 Louisiana Board of Regents, USA
 Teva Pharmaceutical Industries Ltd, USA
 US WorldMeds LLC, USA
 Union Springs, LLC, USA
 Yaupon Therapeutics Inc, USA
 Medella Springs, USA
 Good Sprouts, LLC, USA

SELECTED HONORS AND AWARDS:

2008 Nanotechnology Symposium Outstanding Research Paper Award
 2007 Pfizer Company Career Development Award
 2006 American Cancer Society IRG Award
 2006 Kentucky Science and Technology Corp. (KSTC) STTR/SIBR workshop award
 1999 P&G Drug Delivery Award
 1998 Rho Chi American Pharmaceutical Honor Society

AWARDED RESEARCH GRANTS:

1. Sullivan Grant: *Natural Topical Formulation to Ease the Symptoms of Psoriasis*, **\$3,600** (06/2024-07/2025), Role: PI.
2. FWBW Industrial Grant: *Development and characterization of pharmaceutical gels*, **\$17,500** (7/2019-6/2020). Role: PI
3. Union Springs Industrial Grant: *Assessment and development of natural supplement-based formulations for ADHD*, **\$10,000** (6/2014-12/2014). Role: PI
4. US WorldMeds Industrial Grant: *Development of Stable Apomorphine Solutions and Oral Tablets Formulations*, **\$136,000** (11/2012-11/2014). Role: PI
5. US Research Foundation: *Formulation development of intravenous nanoemulsion and lipid-drug complex products*, **\$40,000** (10/2011-09/2012). Role: PI

6. KSTC R&D Grant, USWM, *Formulation development of intravenous and oral dosage forms*, **\$338,572** (10/2007 - 09/2011). Role: PI
7. Swedish Match North America Inc. *Development of a microencapsulated system for food flavors*, **\$275,796** (08/2005 - 09/2009). Role: PI since 08/2008
8. US Army Research Office, *Development of a sustained Antiplaque, antimicrobial delivery system for KSL*, **\$400,390** (01/2004 - 09/2009). Role: PI since 08/2008
9. KSTC R&D Grant: *Product development and formulation*, **\$975,088** (05/2002-09/2010). Role: CO-I
10. Pfizer Company Career Development Award, **\$10,000** (09/2007- 08/2008). Role: PI
11. American Cancer Society IRG: *Hyaluronan Microspheres and Nanoparticles as Chemotherapeutic Delivery Device in Cancer Therapy*, **\$20,000** (01/2007 – 05/2008). Role: PI
12. NIH/NCI PO1 CA104457 Subcontract from University of Vanderbilt: *Pharmacokinetics of Novel Radiation Sensitizers*, **\$31,330**. Role: CO- I
13. NIH/STTR: *Norketamine for Treatment of Pain*, **\$259,841**. Role: CO-I
14. NIH RO1 GM076063 Subcontract from University of California: *Formulation development for acid labile novel compound TRAM-34*, **\$8,881** (09/2007 - 05/2008). Role: PI
15. Airmid Company Industrial Contract: *Formulation development for water insoluble novel compound PAP-1*, **\$12,371** (09/2007 – 02/2008). Role: PI

SELECTED SCIENTIFIC PROFESSIONAL PRESENTATIONS:

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| 2023 | Invited Speaker: FIP AcPS Webinar Impact of Pharmacy Education on Global Health Care System. “Benefits and Importance of International Accreditation in Pharmacy Education: Jordan Case”. |
| 2023 | Keynote Speaker: JAIP workshop from Research to Industry. “Connecting the dots between University Research and Industrial Innovation”. |
| 2022 | Keynote Speaker: University of Kentucky College of Pharmacy White Coat Ceremony. |
| 2021 | Speaker: FIP Quality Assurance QA Event. |
| 2021 | Speaker: Benefits and Importance of international Accreditation in Pharmacy Education at the Arab Universities Association Workshop. |
| 2021 | Speaker: FIP-UNESCO UNITWIN Workshop Event. |
| 2020 | Invited Speaker: A Global Approach to Pharmacy Workforce Development: Launch of FIP Workforce Reference Guide. |
| 2020 | Invited Speaker: The Unmet Need; Connecting Pharmacy Graduate Education with Pharma Industry. Florida Agricultural and Mechanical University, College of Pharmacy and Pharmaceutical Sciences. |
| 2020 | Distinguished Speaker: Benefits and Importance of International Certification in Pharmacy Education, International Webinar on Quality Assurance and Accreditation on Pharmacy Education. University of Baghdad College of Pharmacy, Iraq. |
| 2020 | Invited Speaker: Bridging the Gap between Pharmacy Education and Pharma Industry Indian Congress of Pharmacy Practice & International Indian Association of Colleges of Pharmacy Convention, India. |
| 2018 | Invited speaker: Innovative ways to introduce inter-professional education in BS Pharmacy and PharmD education; a curriculum prospective. 3rd Convention of the Indian Association of Colleges of pharmacy. Hyderabad, India. |
| 2018 | Keynote speaker: Nanotechnology in Drug Targeted Therapy: Bridging the Gap Between Molecular and Cellular Science. 2 nd IEEE International Conference for Eng. Tech & Sciences. Erbil-Iraq through Skype. |
| 2018 | Keynote Speaker: Quality Assurance and Accreditation in Pharmacy Education. First International Conference of Al-Kitab University College in cooperation with Lund University, Sweden. Baghdad, Iraq through Skype. |

- 2017 Keynote Speaker: Accreditation and Quality Assurance in Pharmacy Education and Practice: a cornerstone for strengthening the pharmacy workforce in Jordan and the Middle East region. 6th Al-Zaytoonah University of Jordan and Toledo University International Pharmaceutical Conference (ZTIPC 2017), Amman, Jordan.
- 2017 Invited speaker: Promoting Academic Industrial Collaboration in Pharmaceutical Research. 1st Conference of Faculty of Pharmacy *New Trends in Pharmacy between Science and Industry*. Faculty of Pharmacy-Yarmouk University. Irbid, Jordan.
- 2017 Invited speaker: IP Rights and Sustainable Development. Excellence for Innovative Projects Center at JUST. Irbid, Jordan.
- 2017 Invited speaker: Local Trends in Pharmaceutical Technology. 7th Scientific Day at University of Jordan Center of Hamdi Mango. Amman, Jordan.
- 2017 Keynote Speaker: Latest Trends in Graduate Education. ASU Pharmacy Third Conference & the Third Conference of the Association of Faculties of Pharmacy at Jordanian Universities. Amman, Jordan.
- 2016 Keynote Speake: Quality Assurance and Accreditation Challenges in Jordan Universities. Jordan Accreditation and Quality Assurance Commission for Higher Education Institutions (AQACHEI) Workshop. Amman, Jordan.
- 2016 Official Delegate: The International Pharmaceutical Federation (FIP) Global Conference on Pharmacy and Pharmaceutical Sciences Education, Nanjing, China.
- 2015 Keynote Speaker: Nanotechnology Delivery Systems for Drug Targeting to the Brain through Intranasal Route. 1st International Conference of the Jordanian Faculties of Pharmacy "JFP", Amman, Jordan.
- 2015 Keynote Speaker: Transmucosal Drug Delivery as a Promising Avenue for Breakthrough Cancer Therapy. 5th Al-Zaytoonah University of Jordan and Toledo University International Pharmaceutical Conference (ZTIPC 2015), Amman, Jordan.
- 2015 Invited Speaker: Drug Development and Clinical Trials Challenges for Natural Products-Based Drug Candidates. 1st International Conference on Natural Products and Drug Discovery. Amman, Jordan.
- 2015 Invited Speaker: Eye on the Future: Transmucosal Drug Delivery as a Promising Avenue for Breakthrough Cancer Therapy. 1st International Controlled Release Society Congress. Aegli Zappiou, Greece.
- 2014 Invited Speaker: SUCOP residents Teaching Certificate Session: Intellectual Property, Scholarship of Teaching and Learning (SoTL), and Grant Writing. Louisville, Kentucky
- 2014 Speaker and Moderator: SU Graduate Students Retreat Session: IRB guidelines and application submission requirements. Louisville, KY, USA.
- 2014 Speaker: Evolving Trends in Pharmacy Education. DUPHAT International Pharmaceuticals and Technologies Conference and Exhibition, Dubai, UAE
- 2013 Invited Judge and Moderator: 2nd Arab Innovation Network Annual Conference. Dead Sea, Jordan.
- 2013 Speaker: Transmucosal Drug Delivery for Breakthrough Cancer Therapy, DUPHAT International Pharmaceuticals and Technologies Conference and Exhibition, Dubai, UAE
- 2013 Invited Guest Speaker: Trends and Innovations in Pharmacy Education. Jordan University, College of Pharmacy. Amman, Jordan.
- 2013 Invited Guest Speaker: Trends and Innovations in Pharmacy Education. Al-Zaytoonah University, College of Pharmacy. Amman, Jordan.
- 2013 Invited Guest Speaker: Graduate Education in USA. The 3rd Students Pharmaceutical conference by Jordan Board of Pharmacy. Amman, Jordan.
- 2013 Speaker: Hyaluronic Acid Nanoparticles for Sustained Paclitaxel Delivery after Intra-Tumor Injection. 1st Annual Kentucky Nanotechnology Symposium. University of Louisville. Louisville, Kentucky, USA.

- 2012 Invited Speaker: The New Trends in Pharmacy Education and Practice. The 14th Annual Congress of the Scientific Association of Colleges of Pharmacy in the Arab World & The 2nd International Conference of the College of Pharmacy and Health Sciences, in Ajman UAE
- 2011 Invited Speaker: Challenges in Parenteral Dosage Form Preparations of Slightly Water-Soluble Drugs: Dantrolene Sodium a Successful Example of Academic-Industrial Collaboration. The 3rd International Conference on Drug Discovery and Therapy, Dubai, UAE
- 2010 Speaker, Symposium in Drug Discovery and Development. Lexington, KY, USA
- 2010 Invited Speaker: Pharmaceutical Development and Advances in Analytical Chemistry. The 5th National Analytical Chemistry Congress in Erzurum, Turkey
- 2010 Speaker: Nanotechnology and Therapeutics, International Conference on RNA, Cleveland, OH, USA
- 2009 Invited Speaker: Engineered Nanoparticles for Intratumor Cancer Therapy. International Congress on Tissue Engineering, Alexandria, Egypt
- 2009 Invited Speaker: Nanoparticulate Delivery Systems for Drug Targeting to the Brain through Intranasal Drug Delivery. The Sullivan University Nanotechnology Symposium, Louisville, KY, USA
- 2008 Invited Speaker: Nanotechnology in Breast Cancer Therapy. The Sullivan University Nanotechnology Symposium, Louisville, KY, USA
- 2007 Organizer and Moderator of Sunrise Session: Assessment of Nasal Drug Delivery in Humans Using Radionuclide Imaging Techniques. American Association of Pharmaceutical Scientists Annual meeting in San Diego, CA, USA
- 2007 Speaker: Paclitaxel-Loaded Cross-Linked Hyaluronan Nanoparticles for Breast Cancer Therapy. 16th International Symposium on Microencapsulation, Lexington, KY, USA.

EDITORIAL ACTIVITIES:

- 2021- present Associate Editor. Member, FIP Journal
- 2009- present Editorial Board, Member, *Journal of Advanced Research*
- 2013-present Editorial Board, Member, *Clinical & Experimental Pharmacology*
- 2011-present Editorial Board, Member, *International Journal of Life Sciences and Medical*
- 2007-present Editorial Board, Member, *Jordan Journal of Pharmaceutical Sciences*
- 1999-on Reviewer, *Journal of Pharmaceutical Sciences*
- 1999-on Reviewer, *AAPS PharmSci Tech Journal*
- 2005-on Reviewer, *European Journal of Pharmaceutics and Biopharmaceutics*
- 2007-on Reviewer, *Letters in Drug Design and Discovery*
- 2008-on Reviewer, *Nature Protocols*
- 2009-on Reviewer, *Journal of Drug Targeting*
- 2009-on Reviewer, *Journal of Microencapsulation*

VISITING SCHOLARS TO PROFESSOR AL-GHANANEEM RESEARCH GROUP:

- Dr. Mohammad Harb PhD., Assistant Professor, Sharjah University, 2011
- Dr. Bashar El Khaldi PhD., Assistant Professor, University of Jordan, 2010
- Dr. Ahmed Hassan PhD., Professor, University of Damascus, 2010
- Mr. Mohammed Atiqzaman MSc., Scientist, University of Bangladesh, 2009-2010
- Dr. Maggie Abbassi PhD., Assistant Professor, University of Cairo, 2008
- Dr. Hayder Saeed MD., PostDoctoral Scholar, University of Baghdad, 2007-2009

PROFESSIONAL AFFILIATIONS:

- Rho Chi American Pharmaceutical Honor Society (1998-present)
- American Association of Pharmaceutical Scientists (AAPS) (1998-present)
- American Association of Colleges of Pharmacy (AACP) (2003-present)
- Parenteral Drug Association (PDA) (2009-2010)
- Controlled Release Society (CRS) (2012-2015)
- American Chemical Society (ACS) (2008-2010)
- Jordan Association of Pharmacists (1993-present)
- Scientific Advisory Board, US WorldMeds, LLC (2005-2012)
- University of Kentucky Graduate Faculty (2005-2013)
- Susan Komen Breast Cancer Foundation (2005-2009)
- University of Sullivan College of Pharmacy, Nanosymposium International Advisory Board (2009-2011)
- Kentucky Nano Symposium Steering Committee (2012-2015)

RECORDS OF INVENTIONS:

1. The Co-solvent compositions and methods for improved delivery of dantrolene therapeutic agents. AH Malkawi, AM Al-Ghananeem, PP Deluca, GA Digenis. 2015, US Patent 8,975,284.
2. Co-solvent System for the Preparation of a Rapidly Reconstituted Freeze-dried Dantrolene Sodium Drug Product for Intravenous Injection. Ahmad Malkawi, Abeer Al-Ghananeem, Patrick DeLuca, and George A. Digenis. USPTO 20110160261 (2011)
3. Intranasal Delivery System for Dantrolene. Abeer M. Al-Ghananeem. PCT/US2010/032375 (2010)
4. Ketorolac Sublingual Spray for the Treatment of Pain. Abeer M. Al-Ghananeem. USPTO 20090246273A1 (2009)
5. Skin Patches and Sustained-Release Formulations Comprising Lofexidine for Transdermal and Oral Delivery. Abeer M. Al-Ghananeem. PCT/US09/048621 (2009)
6. Transmucosal drug delivery of Lofexidine. Abeer M. Al-Ghananeem. PCT/US09/38172 (2009)
7. Transdermal Delivery of Apomorphine Hydrochloride Using Microneedles. Abeer M. Al-Ghananeem, PCT/US09/54604 (2009)
8. Stabilized compositions of volatile alkylating agents and methods of using thereof. Crooks PA, Lessin SR, Pimley MA, Alonso R, Al-Ghananeem A. PCT international application WO/2006/099385 (2007), European Patent No. EP1858864 (2007), U.S. patent Application No. US2008/0194699 (2008)
9. Lofexidine enantiomers for use as a treatment for CNS disease and pathologies and its chiral synthesis. Digenis G, Crooks, PA, and Al-Ghananeem A. U.S. Patent No: US 2006-376710 20060314. Priority: US 2005-661525 20050314 (2008)
10. Scopolamine sublingual spray for the treatment of motion sickness. Crooks P, Al-Ghananeem A, and Malkawi A. U.S. Patent No.: US 2006-360690 20060224. Priority: US 2005-656359 20050225 (2006)
11. Sublingual spray for the treatment of pain. By Peter A. Crooks, Abeer Al-Ghananeem, and Ahmad H. Malkawi, PCT Int. Appl. No. WO 2006105205. Priority: US 2005-666060 (2006)
12. Intranasal codeine for the rapid suppression of cough and rapid relief of pain. Hussain A, Dittert L, and Al-Ghananeem A. PCT international application WO 99-US23788 19991014. Priority: US 98-104272 19981014 (2000)

PUBLISHED BOOKS:

Drug Targeting to the Lung: Chemical and Biological Consideration. Crooks PA and Al-Ghananeem AM. *Pharmaceutical Aerosol Technology; Drugs and the Pharmaceutical Sciences Series/134*, Second edition. Anthony Hickey, Marcel Dekker, NY 200X 0097142232646. ISBN: 0-8247-4253-2. Sept 2003.

Nanoparticles as Delivery System in Breast Cancer Therapy. Al-Ghananeem AM and Saeed H. *Advances in Nanotechnology and Applications*, Volume 1. Pathak YV and Tran HT, Center for Nanotechnology: Education, Research, and Applications, 1-4392-5489-3. Oct 2009.

PEER-REVIEWED PUBLICATIONS:

**Corresponding author*

1. **Enhancing Intranasal Delivery and Bioavailability of Dihydroergotamine Utilizing Chitosan Nanoparticles.** A Alastal, A Abu Kwaik, A Malkawi, S Baltzley, and A Al-Ghananeem, *Journal of Clinical Pharmacy and Therapeutics* Volume 2023, Article ID 2284371, <https://doi.org/10.1155/2023/2284371>
2. **Virtual accreditation visits for pharmacy programs in light of the COVID-19 pandemic: Team members' perspective.** A Qandil, E Esposito, A Cox, AM Al-Ghananeem*. *Currents in Pharmacy Teaching and Learning*, **2022**; <https://doi.org/10.1016/j.cptl.2022.03.013>
3. **Formulation Challenges and Strategies to Develop Pediatric Dosage Forms.** WA Malkawi, E AlRafayah, M AlHazabreh, S AbuLaila, AM Al-Ghananeem*. *Children*. **2022**; 9(4):488. <https://doi.org/10.3390/children9040488>
4. **The Case for Authentic Student Assessment in Distance Digital Pharmacy Education.** A Qandil, R Darweesh, AM Al-Ghananeem. *MedEdPublish*. **2021**; <https://www.mededpublish.org/manuscripts/3621>
5. **Pharmacy education in sub-Saharan Africa: Special focus areas".** AM Al-Ghananeem, A Kahaleh, B Mukhalalati. **2020** International Pharmaceutical Federation (FIP) Publication. pp142-148. Citation: <https://www.fip.org/file/4812>
6. **Response to Letter on A Call to Action to Transform Pharmacy Education and Practice in the Arab World.** AM. Al-Ghananeem, DR. Malcom, S Shammas, TA. Aburjai. *Am J Pharm Ed*. **2019**, 83:6.
7. **Cultural Sensitivity and Global Pharmacy Engagement in the Arab World.** NZ. Alsharif, NM. Khanfar, LF. Brennan, EB. Chahine, AM. Al-Ghananeem, J Retallick, M Schaalán, N Sarhan. *Am J Pharm Ed*. **2019**, 83:4.
8. **Sterility and Stability Testing of Preservative-free Albuterol.** SL Gulley, SM Baltzley, AD Junkins, TD Murray, SF Simms, JE Sullivan, AM. Al-Ghananeem, A O'Hagan. *The Journal of Pediatric Pharmacology and Therapeutics* **2019**. 24:1, 53-57.
9. **Drug Targeting to the Lung: Chemical and Biochemical Considerations.** PA Crooks, NR Penthala, AM Al-Ghananeem. *Pharmaceutical Inhalation Aerosol Technology*, **2019**, Third Edition, 105-165.

10. **Transforming Pharmacy Education and Practice in the Arab World: A Call-to-Action to.** AM. Al-Ghananeem*, DR. Malcom, S Shammass, and T Aburjai. *Am J Pharm Ed.* **2018**, 82:9.
11. **Sublingual spray drug delivery of ketorolac-loaded chitosan nanoparticles.** S Baltzley, AA. Malkawi, M Alsmadi, AM. Al-Ghananeem*. *Drug Dev Ind Pharm* **2018**, 44(9), 1467-1472.
12. **Development and evaluation of a Sustained Antiplatelet and Antimicrobial Chewing Gum Delivery System.** AM. Al-Ghananeem*, KP. Leung, J Faraj, PP. DeLuca. *AAPS PharmSciTech.* **2017**, 18(6), 2240-2247.
13. **Biotechnology in practice: Call for incorporation of biosimilars into pharmacy education.** DR Malcom and AM Al-Ghananeem*. *Currents in Pharmacy Teaching and Learning.* **2015**, 7(2), 256-258.
14. **Intranasal drug delivery of olanzapine-loaded chitosan nanoparticles.** S Baltzley, A Mohammad, AH Malkawi, AM Al-Ghananeem*. *AAPS PharmSciTech.* **2014**, 15(6), 1598-1602.
15. **Stabilized compositions of volatile alkylating agents and methods of using thereof.** R Alonso, PA Crooks, MA Pimley, AM Al-Ghananeem. **2013**, US Patent 8,450,375.
16. **Advances in brain targeting and drug delivery of anti-HIV therapeutic agents.** AM Al-Ghananeem*, M Smith, M Coronel, H Tran. *Expert Opinion on Drug Delivery.* **2013**, 10(7), 973-985.
17. **Skin patches and sustained-release formulations comprising lofexidine for transdermal and oral delivery.** AM Al-Ghananeem. **2013**, US Patent App. 13/732,629.
18. **Sublingual and nasal transmucosal drug delivery for breakthrough pain: a frontier in cancer therapy.** AM Al-Ghananeem *. *Journal of Bioequivalence and Bioavailability.* **2013**, 5(3), Editorial. doi:10.4172/jbb.10000e29.
19. **Intranasal delivery system for dantrolene.** AM Al-Ghananeem. **2012**, US Patent App. 13/266,358.
20. **Bioavailability of Δ^9 -tetrahydrocannabinol following intranasal administration of a mucoadhesive gel spray delivery system in conscious rabbits.** AM Al-Ghananeem*, AH Malkawi, PA Crooks. *Drug Dev Ind Pharm.* **2011**, 37(3), 329-334.
21. **Transdermal Delivery of Apomorphine Using Microneedles.** AM Al-Ghananeem. **2011**, US Patent App. 13/060,118.
22. **Skin patches and sustained-release formulations comprising lofexidine for transdermal and oral delivery.** AM Al-Ghananeem. **2011**, US Patent App. 12/999,659.
23. **Formulation-based approach to support early drug discovery efforts: a case study with enteric microencapsulation dosage form development for a triarylmethane derivative TRAM-34; a novel potential immunosuppressant.** AM Al-Ghananeem*, M Abbassi, S Shrestha, Raman G, H Wulff, L Pereira, A Ansari. *Drug Dev Ind Pharm.* **2010**, 36(5), 563-569.

24. **Compositions and Methods for Transmucosal Delivery of Lofexidine.** AM Al-Ghananeem. **2010**, US Patent App. 13/705,629.
25. **Intranasal drug delivery of didanosine loaded chitosan nanoparticles for brain targeting; an attractive route against infections caused by aids viruses.** AM Al-Ghananeem*, H Saeed, R Florence, RA Yokel, AH Malkawi. *Journal of Drug Targeting.* **2010**, 18(5), 381-388.
26. **Materials for pharmaceutical dosage forms: molecular pharmaceuticals and controlled release drug delivery aspects.** HM Mansour, M Sohn, AM Al-Ghananeem, PP DeLuca. *International Journal of Molecular Sciences.* **2010**, 11, 3298-3322.
27. **Ketorolac Sublingual Spray for the Treatment of Pain.** AM Al-Ghananeem. **2009**, US Patent App. 12/410,928.
28. **Urine and plasma pharmacokinetics of lofexidine after oral delivery in opiate dependent patients.** AM Al-Ghananeem*, BH Herman, M Abbassi, E Yu, K Miotto, CP O'Brien; A Montgomery, R Walsh. *Am J Drug Alcohol Abuse.* **2009**, 35(5), 311-315.
29. **Compositions and Methods for Transmucosal Delivery of Lofexidine.** AM Al-Ghananeem. **2009**, US Patent App. 12/410,114.
30. **Intratatumoral Delivery of Paclitaxel in Solid Tumor from Biodegradable Hyaluronan Nanoparticle Formulations.** AM Al-Ghananeem*, AH Malkawi, YM Muammer, JM Balko, EP Black, W Mourad, E Romond. *AAPS PharmSciTech.* **2009**, 10(2), 410-117.
31. **Pharmacokinetics of Lofexidine Hydrochloride in Healthy Volunteers.** AM Al-Ghananeem*. *J Pharm Sci.* **2009**, 98(1), 319-326.
32. **Nicotine exposure can be detected in cerebrospinal fluid of active and passive smokers.** AH Malkawi, AM Al-Ghananeem, J de Leon, PA Crooks. *J Pharmaceut Biomed.* **2009**, 49(1), 129-132.
33. **Sublingual spray for the treatment of pain.** P Crooks, A Al-Ghananeem, A Malkawi. **2009**, US Patent App. 11/910,392.
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