

# Amal Ghaleb Al-Bakri

Professor of Pharmaceutical Microbiology

Department of Pharmaceutics and Pharmaceutical Technology

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## Personal Information



**Name:** Amal Ghaleb Al-Bakri

**Date of Birth:** 23, September, 1971

**Nationality:** Jordanian

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## Education

<b>1989</b>	<b>Secondary School Certificate, Tawjihi (Excellent, 93.8)</b> Rosary College, Amman-Jordan
<b>1993-1994</b>	<b>B.Sc. in Pharmacy (Excellent, 2/120)</b> Faculty of Pharmacy, The University of Jordan, Amman, 11942 Jordan
<b>1999-2001</b>	<b>Ph.D. in Pharmaceutical Sciences / Microbiology, <i>Thesis title:</i></b> " Co-Culture of <i>Pseudomonas aeruginosa</i> and <i>Burkholderia cepacia</i> : Implications to Cystic Fibrotic Lung Infection" Faculty of Medicine, Dentistry, Nursing and Pharmacy School of Pharmacy and Pharmaceutical Sciences The University of Manchester, Oxford Road, Manchester UK M13 9PL
<b>2018-2019</b>	Fellowship in Responsible Conduct of Research. University of California San Diego and University of Science and Technology. Fogarty NIH Responsible Conduct of Research Training Program in Jordan. November, 5, 2019

## Training and Working Experience

<b>1994-1997</b>	Teaching Assistant. Faculty of Pharmacy, The University of Jordan, Amman-Jordan.
<b>1997-2001</b>	Ph.D. student. Faculty of Medicine, Dentistry, Nursing and Pharmacy. School of Pharmacy and Pharmaceutical Sciences. Manchester, U.K.
<b>2002-2007</b>	Assistant Professor. Department of Pharmaceutics and Pharmaceutical Technology, Faculty of Pharmacy, The University of Jordan, Amman-Jordan.
<b>2007-2012</b>	Associate Professor. Department of Pharmaceutics and Pharmaceutical Technology, Faculty of Pharmacy, The University of Jordan, Amman-Jordan.
<b>2004-2007</b>	Dean Assistant for Academic Development. Faculty of Pharmacy, The University of Jordan, Amman-Jordan.
<b>2004-2005</b>	Preparation of Program Specification and Self Assessment Documents for the Faculty of Pharmacy, The University of Jordan, Amman, Jordan.
<b>2007- Sep 2011</b>	Vice Dean. Faculty of Pharmacy, The University of Jordan, Amman, Jordan.
<b>2007- Sep 2011</b>	Head of Committee for Postgraduate Studies

<b>2012-current</b>	Professor. Department of Pharmaceutics and Pharmaceutical Technology, Faculty of Pharmacy, The University of Jordan, Amman-Jordan.
<b>2015-2018</b>	Head of the Department of Pharmaceutics and Pharmaceutical Technology, Faculty of Pharmacy, The University of Jordan, Amman-Jordan.

## Research Interests

1. Microorganisms as Planktonic and Biofilm cultures: Their growth characteristics and control.
2. Drug Discovery: Identification and testing of new compounds including natural products as potential antibacterial and antipathogenic agents (Quorum sensing inhibitors and anti adhesion agents). In collaboration with researchers from the Faculty of Pharmacy and Faculty of Science-University of Jordan.
3. Molecular characterisation of resistant strains of *Staphylococcus aureus* and *Acinetobacter baumannii* and their prevalence within the Jordanian population. In collaboration with researchers from the Faculty of Pharmacy and the Faculty of Medicine-University of Jordan.
4. Community drug use and abuse and rationale drug use in Jordan's health care system.
5. Photodynamic antimicrobial chemotherapy PACT and its use in pharmaceutical dosage forms to control microbial infections.

## Research Funding/Grants

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|------------------|--|
| <b>Sep, 2003</b> | 1. Antibiotic resistance surveillance in Jordan. (Deanship of Academic Research, University of Jordan, <b>7, 350 \$</b> ). Publication no.4.   |
| <b>Dec, 2003</b> | 2. Testing of Protein Tyrosine phosphatase (PTPase) inhibitors captured by <i>in-silico</i> screening as potential new hypoglycemic agents. (Deanship of Academic Research, University of Jordan, <b>14, 400 \$</b> ).Publication no. 5. |
| <b>Nov, 2004</b> | 3. Testing of non-nucleoside compounds predicted by computer pharmacophore modeling of HIV type-1 reverse transcriptase inhibitors as novel anti-Human   |

Immunodeficiency Virus (AIDS). (Deanship of Academic Research, University of Jordan, **24, 500 \$**). Publication no.13.

- Sep, 2006** 4. Search for new potent antibacterial agents via ligand-based and structure-based modeling techniques followed by microbiological validation. (Deanship of Academic Research, University of Jordan, **26, 700 \$**). Publication no. 10.
- 2007** 5. Biofilm formation and eradication of methicillin and vancomycin resistant staphylococci isolated from Jordanian community. (Deanship of Academic Research, University of Jordan, **21, 780 \$**). Manuscript is under preparation.
- 2009** 6. Molecular categorization, epidemiological surveillance and virulence determinants of methicillin resistant *Staphylococcus aureus* (MRSA) and coagulase-negative staphylococcus (CoNS) in Jordanian community. (Scientific Research Fund, Ministry of Higher Education, **44, 975 \$**). Manuscript is under preparation.
- 2010** 7. Pilot study for the *in vitro* evaluation of antimicrobial activity of *Varthemia iphionoids* Boiss (family Compositae) crude extracts in the treatment of topical skin bacterial and fungal infections.  
(The National Center for Biotechnology, **5, 421 \$**).
- 2010** 8. Formulation and Evaluation of Pharmaceuticals containing photosensitizers as novel antimicrobial agents.(The National Center for Biotechnology, **22, 480 \$**).
- 2010** 9. Staff Exchange Scheme FP7 2010 ( **32, 000 EUR**).
- 2011** 10. Daniel Turnber Fellowship for Medical Sciences Award (3, 500 £).
- 2012** 11. Study of prevalence and risk factors associated with diabetic foot infections caused by MRSA among Jordanian patients. (Deanship of Academic Research, University of Jordan, 20600 JD)
- 2014** 12. Screening of antimicrobial and anti-quorum sensing activity in macro algae from Gulf of Aqaba, Red Sea. (Deanship of Academic Research, University of Jordan, 10 000 JD)
- 2014** 13. Co-culture of *Pseudomonas aeruginosa* biofilm on cultured cystic fibrosis airway cells. (Deanship of Academic Research, University of Jordan, 10 000 JD)
- 2015** 14. Molecular and Chemical Analysis of Microbial Ecology of Diabetic Foot Infected Ulcers (Deanship of Academic Research, University of Jordan, 13 000 JD)
- 2019** 14. Investigation of metabolite profile in bacterial biofilms using mass spectrometry (Deanship of Academic Research, University of Jordan, 15 000 JD)

15. Evaluation of the protective effect of probiotics on fibroblast -*Pseudomonas aeruginosa* acute wound model. (Deanship of Academic Research, University of Jordan, 1500 JD)

## Awards

1. Ministry of Higher Education B.Sc Scholarship- 1989-1994.
2. Dar Al Dawa- Pharmaceutical Company Ph.D Scholarship, 1997-2001.
3. The University of Jordan Award of Best researcher, Academic Year 2009-2010.
4. The University of Jordan Award of Best Researcher, Academic Year 2010-2011.
4. Marie Marie Curie Actions—International Research Staff Exchange Scheme- IRSES)-FP7, 2010.
5. Daniel Turnberg Fellowship for Medical Sciences, 2011.
6. Erasmus plus training mobility grant, 17/06/2019-28/06/2017, The university of Bath-School of Pharmacy
7. Fulbright research scholarship 2021-2022. University of Wisconsin Madison

## Publications

1. **Amal G. Al- Bakri**, Peter Gilbert and David G. Allison (1999). Mixed species biofilms of *Burkholderia cepacia* and *Pseudomonas aeruginosa*. Biofilms, The Good, The Bad and the Ugly pp327-337. Edited by Wimpeny, J, Gilbert, P, Walker, J, Brading, M and Bayston R. Bioline: Cardiff.
2. **A.G. Al-Bakri**, P. Gilbert and D.G. Allison (2004). Immigration and emigration of *Burkholderia cepacia* and *Pseudomonas aeruginosa* between and within mixed biofilm communities. Journal of Applied Microbiology **96**, pp 455-463.
3. **Amal G. Al-Bakri**, Peter Gilbert, David G Allison (2005). Influence of gentamicin and tobramycin on binary biofilm formation by co-cultures of *Burkholderia cepacia* and *Pseudomonas aeruginosa*. Journal of Basic Microbiology. **45 (5)**, pp 392-396.
4. **Amal G. Al- Bakri**, Yasser Bustanji, Al-Motassem Yousef (2005). Common consumption of antibacterial drugs within the Jordanian population: sources, patterns and appropriateness. International Journal of Antimicrobial Agents. **26**, pp 389-395.
5. Yasser Bustanji, Mutasem O. Taha, Al-Motassem Yousef **Amal G. Al- Bakri** (2006). Berberine potently inhibits protein tyrosine phosphatase 1B: Investigation by docking simulation and experimental validation. Journal of Enzyme Inhibition and Medicinal Chemistry. **21 (2)**, pp 163-171.
6. Mutasem O. Taha, **Amal G Al-Bakri** Waleed Zaloum (2006). Discovery of potent inhibitors of Pseudomonas quorum sensing via pharmacophore modeling and *in-silico* screening. Journal of Bioorganic and Medicinal Chemistry Letters. **16(22)**, pp 5902-5906.
7. **Amal G Al-Bakri** and Fatima Afifi (2007). Evaluation of antimicrobial activity of selected plant extracts by rapid XTT colorimetry and bacterial enumeration. Journal of Microbiological Methods. **68(1)**, pp 19-25.
8. Mutasem O. Taha, Yasser Bustanji, **Amal G. Al-Bakri**. Al-Mottasem Yousef, Waleed A. Zalloum, Ihab Al-Masri, and Naji Atallah (2007). Discovery of new potent human protein tyrosine phosphatase inhibitors via pharmacophore and QSAR analysis followed by *in-silico* screening. Journal of Molecular Graphics and Modeling. **25(6)**, pp 870-884.
9. Yousef A.M. **Al-Bakri A.G.**, Yasser Bustanji, Al-Wazaify M. Self Medication Patterns in Amman, Jordan (2008). Pharmacy World and Science. **30(1)**, pp 24-30.

10. Taha MO, Atallah N, **Al-Bakri A.G.**, Paradis-Bleau C, Zalloum H, Younis KS, Levesque RC (2008). Discovery of new MurF inhibitors via pharmacophore modelling and QSAR analysis followed by in-silico screening. *Bioorganic and Medicinal Chemistry*. **16(3)**, pp 1218-1235.
11. **Al-Bakri A.G.**, Othman, G and Bustanji Y (2009). The assessment of the antibacterial and antifungal activities of aspirin, EDTA and aspirin-EDTA combination and their effectiveness as antibiofilm agents. *Journal of Applied Microbiology* **107(1)**, pp 280-286.
12. Al-Momany NH, **Al-Bakri AG**, Makahleh ZM, Wazaify MMB (2009). Adherence to international antimicrobial prophylaxis guidelines in cardiac surgery: A Jordanian study demonstrates need for quality improvement *Journal of Managed Care Pharmacy*. **15 (3)**, pp 262-271.
13. Bustanji Y, Al-Masri IM, Qasem A, **Al-Bakri AG** and Taha MO (2009). *In silico* screening for non-nucleoside HIV-1 reverse transcriptase inhibitors using physicochemical filters and high-throughput docking followed by in vitro evaluation. *Chemical Biology and Drug Design*, **74 (3)**, pp 258-265.
14. Saadeh, HA, Mosleh IM, **Al-Bakri AG** and Mubarak MS (2010). Synthesis and antimicrobial activity of new 1,2,4-triazole-3-thiol metronidazole derivatives. *Monatshefte für Chemie*, **141**, pp 471-478.
15. **Al-Bakri AG**, Othman G and Afifi FU (2010). Determination of the antibiofilm, antiadhesive and anti-MRSA activities of seven *Salvia* species. *Pharmacognosy Magazine*, **6**, pp 264-270.
16. Taha MO, Qandil AM, Al-Haraznah T, Khalaf RA, Zalloum H, **Al-Bakri AG** (2011). Discovery of new antifungal leads via pharmacophore modeling and QSAR analysis of fungal N-myristoyl transferase inhibitors followed by in silico screening. *Chemical Biology and Drug Design*, **78(3)**, pp 391-407.
17. Taha MO, Habash M, Al-Hadidi Z, **Al-Bakri A**, Younis K, Sisan S (2011). Docking-based Docking-based comparative intermolecular contacts analysis as new 3-D QSAR concept for validating docking studies and in silico screening: NMT and GP inhibitors as case studies. *Journal of Chemical Information and Modeling*, **51(3)**:647-669.
18. Haythem A. Saadeh, Eman A. Abu Shaireh, Ibrahim M. Mosleh, **Amal G. Al-Bakri** and Mohammad S. Mubarak (2011). Synthesis, characterization and biological activity of Schiff bases derived from metronidazole. *Medicinal Chemistry Research*. DOI: 10.1007/s00044-011-9830-y. Online

19. Mohammed H. Kailani, **Amal G. Al-Bakri**, Haitham Saadeh and Yusuf M. Al-Hiari. Preparation and antimicrobial screening of novel 2,2-dichloropropane-cis-dicarbamates and comparison to their alkane and cis alkene analogs. (2012). Jordan Journal of Chemistry, **7(3)**:
20. **A.G. Al-Bakri**, H Al-Hadithi, V. Kasabri, G. Othman, A. Kriegeskorte and K. Becker. The epidemiology and molecular characterization of methicillin-resistant staphylococci sampled from healthy Jordanian population (2013). Epidemiology and infection, **23**: .1-8.
21. Asem A Shehabi Rozan Abu-Yousef, Eman Badran, **Amal G. Al-Bakri**, Luay Abu-Qatouseh and Karsten Becker. Major Characteristics of *Staphylococcus aureus* colonizing Jordanian infants (2013). Pediatrics International. 55(3):300-4. doi: 10.1111/ped.12060.



22. Obeidat N, Jawdat F, **Al-Bakri AG**, Shehabi AA. Major biologic characteristics of *Acinetobacter baumannii* isolates from hospital environmental and patients' respiratory tract sources (2014). American Journal of Infect Control. 42(4):401-4. doi: 10.1016/j.ajic.2013.10.010.
23. Adwan S1, Abu-Dahab R, **Al-Bakri AG**, Sallam A. Glyceryl monooleate-based otic delivery system of ofloxacin: release profile and bactericidal activity (2014). Pharmaceutical Development and Technology. Jan 6 (doi:10.3109/10837450.2013.871030).
24. Amjad M. Qandil, Lorca O. Al-Zoubi, **Amal G. Al-Bakri**, Haneen A. Amawi , Qosay A. Al-Balas ,Abdulmalik M. Alkatheri and Abdulkareem M. Albekairy. Synthesis, Antibacterial Evaluation and QSAR of  $\alpha$ -Substituted-N4-Acetamides of Ciprofloxacin and Norfloxacin (2014). Antibiotics. 3(3), 244-269; doi:10.3390/antibiotics3030244
25. Safa Daoud, Fatma U Afifi, **Amal G Al-Bakri**, Violet Kasabri, and Imad I Hamdan. Preparation Physicochemical Characterization and Biological Evaluation of some Hesperidin Metal Complexes (2014) Iran J Pharm Res. 13(3): 909–918.
26. Malath A. Al-Qtaitat, Haythem A. Saadeh, **Amal G. Al-Bakri**, Hargobinder Kaur, Kapil Goyal, Rakesh Sehgal, Mohammad S. Mubarak. Synthesis, characterization, and biological activity of novel metronidazole-piperazine amides (2014). Monatsh Chem. DOI 10.1007/s00706-014-1352-0
27. Mahmoud NN, Al-Qaoud KM, **Al-Bakri AG**, Alkilany AM, Khalil EA. Colloidal stability of gold nanorod solution upon exposure to excised human skin: Effect of surface chemistry and protein adsorption (2016). Int J Biochem Cell Biol S1357-2725(16)30044-9. doi: 10.1016/j.biocel.2016.02.020.
28. Sara AlMarabeh, Enam Khalil, Mohammad Khanfar, **Amal G. Al-Bakri** and and Muhammed Alzweiri. Prodrug Approach to Enhance Azelaic Acid Percutaneous Availability (2017). Journal of Pharmaceutical Development and Technology. Jun;22(4):578-586. doi: 10.1080/10837450.2016.1200614
29. Nouf N. Mahmoud, Alaaldin M. Alkilany, DörtheDietrich, Uwe Karst, **Amal G. Al-Bakri**, Enam A. Khalil .Preferential Accumulation of Gold Nanorods into Human Skin Hair Follicles: Effect of Nanoparticle Surface Chemistry (2017). Journal of Colloid and Interface Science. May 6;503:95-102. doi: 10.1016/j.jcis.2017.05.011
30. Nouf N Mahmoud, Alaaldin M Alkilany, Enam A Khalil, **Amal G Al-Bakri**. Antibacterial activity of gold nanorods against *Staphylococcus aureus* and *Propionibacterium acnes*: misinterpretations and artifacts (2017). International Journal of Nanomedicine 12: 7311–7322. doi:10.2147/IJN.S145531

31. Nouf N. Mahmouda, Messaoud Harfouche, Alaaldin M. Alkilany, Amal G. Al-Bakri, Rania A. El-Qirem, Sawsan A. Shraim, Enam A. Khalil, Synchrotron-based X-ray fluorescence study of gold nanorods and skin elements distribution into excised human skin layers.(2018). *Colloids and Surfaces B: Biointerfaces* Volume 165, 1 May 2018, Pages 118–126.  
<https://doi.org/10.1016/j.colsurfb.2018.02.021>
32. Nouf N. Mahmoud, Alaaldin M. Alkilany, Enam A. Khali, Amal G. Al-Bakri. Nano-Photothermal ablation effect of Hydrophilic and Hydrophobic Functionalized Gold Nanorods on *Staphylococcus aureus* and *Propionibacterium acnes* (2018). *Scientific Reports-Nature*. 8:6881. DOI:10.1038/s41598-018-24837-7.
33. Khalil EA, Alkawareek MY1, Othman G1, Tbakhi B, Al-Bakri AG. Evaluation of Paromomycin Sulphate Permeation Using ex-vivo Human Skin Model 2018 *Pharm Dev Technol*. 6:1-12. doi: 10.1080/10837450.2018.1485697.
34. Nouf N. Mahmoud, Messaoud Harfouche, Alaaldin M. Alkilany , Amal G. Al-Bakri and Enam A. Khalil. Correlation between ICP-OES and Synchrotron-XRF in Detecting the Penetration of Gold Nanorods into Excised Human Skin Layers. *Access Volume 24, Supplement S2 (Proceedings of Microscopy & Microanalysis 2018)* August 2018 , pp. 538-539  
<https://doi.org/10.1017/S1431927618014885> Published online: 10 August 2018
35. Al-Jamei SA, Albsoul AY , Bakri FG, Al-Bakri AG . Extended-spectrum  $\beta$ -lactamase producing *E. coli* in urinary tract infections: A two-center, cross-sectional study of prevalence, genotypes and risk factors in Amman, Jordan. *J Infect Public Health*. 2018 Aug 22. pii: S1876-0341(18)30116-3. doi: 10.1016/j.jiph.2018.07.011.
36. Dina El-Sabawi, Rana Abu-Dahab, Amal G. Al Bakri, Imad I Hamdan. Studies on the interaction between ciprofloxacin hydrochloride and diclofenac sodium. *Tropical Journal of Pharmaceutical Research*. February 2019; 18 (2): 377-384 ISSN: 1596-5996 (print); 1596-9827 (electronic)
37. Mahmoud NN, Alhusban AA, Ali JI, Al-Bakri AG, Hamed R, Khalil EA. Preferential Accumulation of Phospholipid-PEG and Cholesterol-PEG Decorated Gold Nanorods into Human Skin Layers and Their Photothermal-Based Antibacterial Activity. *Sci Rep*. 2019 Apr 8;9(1):5796. doi: 10.1038/s41598-019-42047-7.

38. **Al-Bakri AG**, Mahmoud NN. Photothermal-Induced Antibacterial Activity of Gold Nanorods Loaded into Polymeric Hydrogel against *Pseudomonas aeruginosa* Biofilm. *Molecules*. 2019 Jul 23;24(14). pii: E2661. doi: 10.3390/molecules24142661.
39. Ayyash M, Shehabi AA, Mahmoud NN, **Al-Bakri AG**. Antibiofilm properties of triclosan with EDTA or cranberry as Foley Catheter lock solutions. *Appl Microbiol*. 2019 Dec;127(6):1876-1888. doi: 10.1111/jam.14439.
40. Suhair Sunoqrot, Eveen Al-Shalabi, **Amal G. Al-Bakri**, Hiba Zalloum, Bashaer Abu-Irmaileh, Lina Hasan Ibrahim, and Huda Zeno. Coffee Bean Polyphenols Can Form Biocompatible Template-free Antioxidant Nanoparticles with Various Sizes and Distinct Colors. *ACS Omega Article ASAP* DOI: 10.1021/acsomega.0c05061
41. **Amal G Al-Bakri**, Amal A Akour , Wael K Al-Delaimy. Knowledge, attitudes, ethical and social perspectives towards fecal microbiota transplantation (FMT) among Jordanian healthcare providers. *BMC Med Ethics*. 2021 Feb 27;22(1):19. doi: 10.1186/s12910-021-00587-6
42. **A G Al-Bakri**, N R Bulatova, N A Younes , G Othman, D Jaber, N Schleimer, A Kriegeskorte, K Becker. Characterization of staphylococci sampled from diabetic foot ulcer of Jordanian patients. *J Appl Microbiol*. 2021 Apr 4. doi: 10.1111/jam.15096
43. Suhair Sunoqrot, Eveen Al-Shalabi, **Amal G Al-Bakri**, Hiba Zalloum, Bashaer Abu-Irmaileh, Lina Hasan Ibrahim, Huda Zeno. Coffee Bean Polyphenols Can Form Biocompatible Template-free Antioxidant Nanoparticles with Various Sizes and Distinct Colors. *ACS Omega*. 2021 Jan 18;6(4):2767-2776. doi: 10.1021/acsomega.0c05061. eCollection 2021 Feb 2.

## Supervision: M.Sc. and Ph.D Projects

1. Generation of an optimal pharmacophoric model for quorum sensing agonists and antagonists in *Pseudomonas aeruginosa* employing ligand based technique and subsequent experimental validation. (Defended on January 2006). Publication no.6.
2. Composition of Jordanian rosemary and fennel essential oils and their antimicrobial effects against four major foodborne bacterial pathogens. (Defended on December, 2006)

3. Docking, CoMFA and pharmacophore modeling of the MurB enzyme inhibitors for the discovery of new selective anti-bacterial agents and subsequent experimental validation (Defended on May, 2007). Publication no. 10.
4. Comprehensive study of the use of prophylactic antibiotics in clinical practice in cardiac surgery in Jordan: microbiological study of normal flora and surgical site infecting organism, adherence to international guidelines, and obstacles against adherence (Defended on July, 2007). Publication no. 12.
5. The assessment of the anti-adhesive and anti-biofilm activities of selected agents towards the establishment of pseudo steady-state microbial biofilms on abiotic surfaces and their potential use as catheter lock therapy (Defended on April, 2008). Manuscript is under preparation.
6. Pharmacophore modelling of *Enterococcus faecalis* Fab H enzyme inhibitors for the discovery of new selective anti-bacterial agents and subsequent experimental validation (Defended on August, 2008).
7. Discovery of new *Candida albicans* protein *N*-myristol transferase (NMT) inhibitors via novel structure based molecular modeling approach followed by experimental validation (Defended on July, 2010). Publication no.17.
8. Preparation and antimicrobial evaluation of 7-substituted aniline-8-nitrofluoroquinolones (Defended on August, 2010).
9. A Prospective randomized controlled trial to investigate the impact of a Clinical pharmacist on treatment-related problems in patients who receive anti-infective therapy in the general intensive care unit (ICU) ward of a major medical centre in Jordan (Defended on November, 2010).
10. The assessment of biofilm formation of *Acinetobacter baumannii* isolates from human and environment sources in association with antimicrobial resistance (Defended on December, 2010). Publication no 22.
11. Studying the effect of specific wave length light-activation of photosensitizer-Pluronic gel based topical formula against *Staphylococcus aureus* culture (Defended on May, 2012).
12. Preparation and characterization of microemulsion based formula of 5-aminolaevulinic acid (ALA) photosensitizer for PACT treatment of acne. (Defended on May, 2014)
13. Cross sectional evaluation of the usage of the broad spectrum intravenous antibiotics in the JUH intensive care units. (Defended on May, 2014).

14. The Effect of Iberin against *Pseudomonas aeruginosa* biofilms on cultured cystic fibrosis airway cells. (PhD project 2014, Defended on August 2016)
15. Dakin's Solution Use for Infected Diabetic Foot Ulcers. (PhD project, 2015)
16. Investigating The Penetration and Distribution of Gold Nanoparticles Into Excised Human and Animal Skin. Optimization of Particles Size, Shape, and Surface Chemistry for best targeting Into The Hair Follicles and highest Photothermal antibacterial activity. (PhD project, 2014, Defended on August 2016)
17. Urinary Tract Infections caused by extended spectrum beta-lactamase (ESBL)- producing *Escherichia coli*: Identification of risk factors and molecular characterizations among Jordanian population. (MSc project, May, 2016, Defended on March 2017)
18. Development and characterization of a micellar drug delivery platform for poorly soluble efflux pump substrate drugs. (PhD project, 2014, Defended on December 2016)
19. The safety and efficacy of quorum sensing inhibitor (micafungin) on fibroblast and *Pseudomonas aeruginosa* acute wound. (MSc project, March 2016, Defended on December , 2017)
20. Development of a co-culture in vitro model simulating CF lung infected with *Pseudomonas aeruginosa*. (MSc project, March 2016, Defended on December, 2017)
21. Evaluation of the protective effect of probiotics on fibroblast -*Pseudomonas aeruginosa* acute wound model (MSc project, Defended on March 2020)
- 22.

## **A member in the examination committee of Postgraduates**

1. The prevalence of adhesion (*ica D* and *fib*) and toxin (*tst*, *eta* and *etb*) genes in Jordanian *Staphylococcus aureus* isolates (July, 2004).
2. Antibiotic self-medication among health professional students at Jordan University (January. 2007).
3. The immunomodulatory effect of Gemifloxacin on human peripheral mononuclear blood cells (August, 2009).
4. Immunogenicity evaluation of an erythropoietin product in patients with chronic renal failure (August 2010).

5. Preparation, Physicochemical characterization and biological evaluation of some hesperidin metal complexes (August, 2010).
6. Assessment of the antirheumatic activity of *Salvia fruticosa* Mill (Syn: *Salvia triloba* L. Fil) (Lamiaceae); by performing enzymatic, cellular and *in vivo* studies (June, 2011).
7. Evaluation of prolonged intermittent fasting effect on immune system and some blood inflammatory cytokines in healthy volunteers (April, 2011).

**And others**

## Conferences and Talks Attended

- 1) Biofilms: Community Interactions and Control (1997). Cardiff, U.K.
- 2) Biofilms: The Good, the Bad and the Ugly (1999). Cardiff, U.K.
- 3) Society for General Microbiology Symposium on Microbial Signalling and Communication (1999). Edinburgh, U.K.
- 4) American Society for Microbiology Conference on "Biofilms 2000" (2000). Big Sky, Montana, USA.
- 5) Society for General Microbiology Symposium on Community Structure and Co-operation in Biofilms (2000). Exeter, U.K.
- 6) Biofilm Community Interactions: Chance or Necessity? (2001). Cardiff, U.K.
- 7) The 2<sup>nd</sup> Arabian Symposium of Antibiotics (2002). Damascus, Syria.
- 8) The 2<sup>nd</sup> International Conference of the Royal Jordanian Medical Services (2003). Amman, Jordan.
- 9) Faculty of Pharmacy Symposium "Advanced Computer Aided Drug Discovery Techniques Adopted at the Faculty of Pharmacy-The University of Jordan" (2003). Amman, Jordan.
- 10) The 3<sup>rd</sup> Arab Symposium for Antimicrobial Agents "Towards Rational use of Antimicrobials (2004). Dar El Defaa El Gawi, Cairo, Egypt.
- 11) The 3<sup>rd</sup> International Conference of the Royal Medical Services in Collaboration with the Royal college of Physicians of London (2006). Amman, Jordan.
- 12) The 4<sup>th</sup> Arab Symposium for Antimicrobial Agents (2006). Tunis, Tunis.
- 13) USP 2<sup>nd</sup> Regional Scientific Workshop (9-10, September, 2006). Amman, Jordan.

- 14) The 2<sup>nd</sup> Jordanian Workshop "Synchrotron Light for Experimental Science and Applications in the Middle East [SESAME] in Research, Training and Technological Applications" (**September, 2006**). Amman, Jordan.
- 15) Sterilizing Filters Validation Issues: Today and the Future. Pall Italia & Pall Middle East. (15 November, 2006). Amman, Jordan.
- 16) USP 2<sup>nd</sup> Regional Scientific Workshop (**9-10, September, 2006**). Amman, Jordan.
- 17) The 9<sup>th</sup> International Conference on Biology and Synchrotron Radiation (**13-17, August, 2007**). Manchester, UK.
- 18) The 6<sup>th</sup> Arab Conference of Antimicrobial agents (**16-18, October, 2008**). Rabat, Morocco
- 19) The 7<sup>th</sup> Arab Conference of Antimicrobial agents (**2009**). Lebanon, Beirut.
- 20) The 3rd International Conference on Ethics in Jordan: Publication and Authorship. (July 2018) JUST-Irbid Jordan
- 21) The sixth Pharmacy Education Conference, 24 June 2019, The University of Manchester.
- 22) The fourth International Conference on Ethics in Jordan: Nov 5<sup>TH</sup> 2019. JUST-Irbid Jordan
- 23) The fifth International Conference on Research Ethics in the MENA. November, 06/07/2020. Responsible conduct of Research Program/Jordan University of Science and Technology-Jordan

## Conferences: Podium Presentations

1. **Amal G. Al- Bakri**, Peter Gilbert and David G. Allison (1999). Mixed species biofilms of *Burkholderia cepacia* and *Pseudomonas aeruginosa*. Biofilms: The Good, the Bad and the Ugly. Cardiff, U.K.
2. **Amal G. Al- Bakri**, Peter Gilbert and David G. Allison (7-10 October, 2003). Immigration and emigration of *Burkholderia cepacia* and *Pseudomonas aeruginosa* between and within mixed biofilm communities. The 2<sup>nd</sup> international conference of the Royal Jordanian Medical Services. Amman, Jordan.
3. **Amal G. Al- Bakri**, Peter Gilbert and David G. Allison (March, 2004). The effects of chronic exposure to antibiotics upon dynamics in binary biofilms. The 3<sup>rd</sup> Arab symposium for antimicrobial agents "Towards Rational use of Antimicrobials. Cairo/Egypt.
4. **Amal G. Al- Bakri**, Yasser Bustanji, Al-Motassem Yousef (April/2006). Antibacterial Drug Consumption among the Jordanian Population: Current Status and Future Plans. The 3<sup>rd</sup> International Conference of the Royal Medical Services in Collaboration with the Royal college of Physicians of London. Amman, Jordan.
5. Yasser Bustanji, Mutasem Taha, Al-Motassem Yousef, **Amal Al- Bakri** (2006). Protein Tyrosine Phosphatase 1B Inhibitors as Potential New Hypoglycemic Agents. The 3<sup>rd</sup> International conference of the Royal Jordanian Medical Services. Amman, Jordan.
6. **Amal G. Al-Bakri**, Motassem Taha and Waleed Zalloum (2007). Bacterial Biofilm and Resistance: Towards the Discovery of Effective Antibiofilm Agents. The 5<sup>th</sup> Arab Symposium for Antimicrobial Agents. Amman, Jordan.
7. **Amal G. Al-Bakri**, Manal Ayyash and Asem Shehabi (2008). Biofilm associated infections: control versus resistance. The 6<sup>th</sup> Arab Conference for Antimicrobial Agents. Rabat-Morocco
8. **Amal G. Al-Bakri** Ghadeer Othman and Fatima Afifi (2010). *Salvia* species as potential antibiofilm, antiadhesive and anti-MRSA natural agents. The 8<sup>th</sup> A Arab Conference of Antimicrobial agents. Syria.



9. **Amal G. Al-Bakri and Al Motassem Yousef (2017)**. ACPE Certification Workshop. The University of Jordan-Amman-Jordan
10. **Al Motassem Yousef Amal G. Al-Bakri, (2017, 2018)**. The University of Jordan-Amman-Jordan. Curricula Development
11. **Amal G. Al-Bakri and Al Motassem Yousef (2018)**. Second ACPE interim Report
12. **Amal G. Al-Bakri**, Nisreen Dahshan, Rana Abu-Dahab, Enam Khalil. A novel *ex vivo* skin explants biofilm model for evaluating the effect of photodynamic antimicrobial chemotherapy and iberin treatment towards *Pseudomonas aeruginosa* biofilms. Microbiology Annual Conference (10-13 April, 2018). ICC, Birmingham, UK
13. Ethical, socioial and cultural constrains towards the use of FMT in Jordan: The perspectives of healthcare providers. The fourth International Conference on Ethics in Jordan: Nov 5<sup>TH</sup> 2019. JUST-Irbid Jordan
- 14.

## Conferences: Poster Presentations

1. **Amal G. Al- Bakri**, Peter Gilbert and David G. Allison (**2000**). Formation of mixed species biofilms of *Pseudomonas aeruginosa* and *Burkholderia cepacia*, ASM 100<sup>th</sup> General Meeting/Los Angeles, California, USA.
2. **Amal G. Al- Bakri**, Peter Gilbert and David G. Allison (**2000**). Formation of mixed species biofilms of *Pseudomonas aeruginosa* and *Burkholderia cepacia*, ASM Conference on "Biofilms 2000". Big Sky, Montana, USA.
3. **Amal G. Al- Bakri**, Peter Gilbert and David G. Allison (**September 2000**). Establishment of *Pseudomonas aeruginosa* and *Burkholderia cepacia* binary culture biofilms. SGM main symposium; Community structure and co-operation in biofilms. University of Exeter, Exeter, UK.

4. Yasser Bustanji, Mutasem O. Taha, Al-Motassem Yousef **Amal G. Al- Bakri** (17-21 December, 2005). Berberine Potently Inhibits Protein Tyrosine Phosphatase 1B: Investigation by Docking Simulation and Experimental Validation. The 9<sup>th</sup> International Pharmaceutical Sciences Conference and Exposition.. Riyadh, Kingdom of Saudi Arabia. Saudi Pharmaceutical Journal 2005, 13(4 S):78.
5. **Amal G. Al- Bakri**, Yasser Bustanji, Al-Motassem Yousef (April 2006). Community antibacterial consumption in Jordan: Prudent use or Misuse and Abuse. The 4<sup>th</sup> Arab Symposium for Antimicrobial Agents. Tunis, Tunisia.
6. Manal Ayyash, Asem Shehabi, **A.G. Al-Bakri** (May 2008). A novel catheter lock therapy. Faculty of Pharmacy/UJ Scientific Day. Amman-Jordan.
7. **Amal G. Al-Bakri**, Hussein Shalan, Atallah Abu-oliem, Nailya Bulatova (2011). A Prospective randomized controlled trial to investigate the impact of a Clinical pharmacist on treatment-related problems in patients who receive anti-infective therapy in the general intensive care unit (ICU) ward of a major medical centre in Jordan. Faculty of Pharmacy/UJ Scientific Day. Amman-Jordan.
8. **Amal G.** Al-Bakri, Ghadeer Othman, Nidal Younes and Nailya Boulatova (2016). Molecular Epidemiology and Genotypic Characteristics of Staphylococci in Jordan. Middle East and South Asia Conference on Epigenetics and Genomics of Infectious Diseases (7-8 March, 2016). Royal Scientific Society, Amman-Jordan

## Workshops and Training Courses Attended

1. Teaching and Assessment Methods. **(2-December-24 January, 2003)**. Centre for Educational Development. Amman, Jordan.
2. Managing Multiple Choice Questions. **(3. June, 2003)**. Centre for Educational Development. Amman, Jordan.
3. Regional workshop on "Research Approaches and Strategies" **(9-12 July, 2003)**. Held in collaboration between Wageningen UR, Head of Academic Affairs UNESCO-IHE and Water and Environment Research and Study Center/University of Jordan. An activity of the collaborative project of: Capacity building of wastewater valorization for agriculture production in the Middle East area by using cost effective treatment technology. Amman, Jordan.
4. Regional workshop on "Training of Trainers" **(14-17 July, 2003)**. Held in collaboration between Wageningen UR, Head of Academic Affairs UNESCO-IHE and Water and Environment Research and Study Centre/University of Jordan. An activity of the collaborative project of: Capacity building of wastewater valorization for agriculture production in the Middle East area by using cost effective treatment technology. Amman, Jordan.
5. The Role of Pharmacist **(15-16 September 2004)**. Jordan Food and Drug Administration Amman, Jordan.
6. Training Human Resources for Quality Assurance Reviewal in the Academic Department **(2004)**. Quality Assurance Agency (QAA). Amman, Jordan.
7. Training Trainers for Tempus and other Programmes **(July, 2005)**. The consortium of Universita Cattolica del Sacro Cuore Milan, Ersamus Hoge school Brussel, European cultural interactions Athens and the University of Jordan. Supported by the European Commission DG EAC, within the Tempus-Meda project *SCM M007A04*. Amman, Jordan.
8. Training course on using Blackboard **(2005)**. King Abdulla II School for Information and Technology Amman, Jordan.
9. Training course on Recent Techniques for Identification of Bacteria **(12-16 March, 2006)**. Cairo Mircen, Faculty of Agriculture, Ain Shams University and UNESCO Cairo office. Cairo, Egypt.

10. Eighth Plenary Meeting of ISO/TC 217- "Cosmetics" and Parallel WG Meetings (15-19/6/2008). Jordan Standards and Metrology Organisation-Amman, Jordan as a Jordanian Expert within the following groups
  - a. ISO/WD 11930 Cosmetics-Microbiology-evaluation of the antimicrobial protection of a cosmetic product,
  - b. ISO/CD 29621 "Cosmetics – Microbiology - Guidance factors to the risk assessment and identification of microbiologically low-risk products"
11. FP7 and the Health Theme (**5 July, 2010**). The Higher council for science and Technology. Amman-Jordan.
12. Intended Learning Outcomes: The Accreditation and Quality Assurance Office-The University of Jordan. 26<sup>th</sup> November 2016
13. First regional Faculty Development Workshop on Curricular Design and Delivery. Al-Ain University, Abu Dhabi Campus, United Arab of Emirates. March 13-14, 2016.
14. Quality Assurance Workshop: Processes and Forms. The Accreditation and Quality Assurance Office, The University of Jordan. 26<sup>th</sup> April 2016.
15. Second regional Faculty Development Workshop on Best Practices for Planning Educational Assessment and Curriculum Mapping. Al-Ain University, Abu Dhabi Campus, United Arab of Emirates. March 5-6, 2017.
16. Attended many of workshops held by the Accreditation and Quality Assurance Center. The University of Jordan.
  - a) Quality Assurance Procedures and Forms. April 26, 2016
  - b) Educational Outcomes. November 14-15, 2016
  - c) Students' Performance Evaluation; Non exam approach. March 9, 2017
  - d) Use of Moodle for exams. July 2018
17. Open licensing in the Erasmus+ CBHE projects" 24 July 2018
18. Critical Thinking and Teaching Responsible Conduct of Research, On line (4 hr) workshop. December 8, 2020. Wael K Al-Delaimy, University of California San Diego, Director of the Fogarty NIH Responsible Conduct of Research Training Program in Jordan
19. Bioinformatics Research Ethics. On line 4 hr workshop. December 15 2020. Wael K Al-Delaimy, University of California San Diego, Director of the Fogarty NIH Responsible Conduct of Research Training Program in Jordan
20. Introduction to Qualitative Research. On line 4 hr workshop. December 22, 2020.

## Memberships

<b>1994-current</b>	Jordan Pharmaceutical Association, Jordan.
<b>1997-2003</b>	Biofilm Club, UK.
<b>1999-2001</b>	Society of General Microbiology, U.K.
<b>2000/2001</b>	American Society for Microbiology, USA.
<b>2002-current</b>	Arab Alliance for the Prudent Use of Antimicrobial Agents, Egypt.
<b>2004-2005</b>	Faculty representative at the University of Jordan council.
<b>2006-current</b>	Jordanian Food and Drug Administration.
<b>2010</b>	Pharmacy Education Accreditation-Higher Education Accreditation Commission-
<b>2007-Sep 2011</b>	Member of the Faculty of Graduate Studies Council
<b>2001-current</b>	Member at number of University and Faculty committees e.g. (Postgraduate, Scientific Research, Library, Equipment and Laboratory, Tender, Quality Assurance, Study Plan and Curriculum-Ph.D program, and others) The Chair Person of the Faculty of Pharmacy Scientific Days, 2007 and 2010
<b>2014-2018</b>	Head of Accreditation and Quality Assurance Committee at the Faculty of Pharmacy-University of Jordan
<b>25-26 October 2016</b>	Member of the Executive and Organizing committees for The 4th International Conference of the School of Pharmacy at The University of Jordan The 2nd.Conference of the Association of Faculties of Pharmacy at Jordanian Universities "Excellence in Pharmacy Education & Research: A Quality Approach"
<b>2018-current</b>	Member at the board of the infectious disease centre-The University of JORDAN
<b>2019-</b>	Member at the Accreditation and Quality assurance committee-The University of Jordan

## Computer Skills and Others

1. The University of Jordan Computer Driving License (UJCDL), passing successfully all of its 9 modules. (Introduction, Windows, Word, Excel, PowerPoint, Access, Internet, Outlook, FrontPage).
2. Licensed Trainer for Applications to Tempus and other Programmes.

## **Member in the Editorial Board of**

1. The International Arabic Journal of Antimicrobial Agents (IAJAA), 2011-current
2. The Scientific World JOURNAL, 2011
3. Jordan Journal of Pharmaceutical Sciences 2013-current
4. An Academic editor in PLOS ONE, 2019-2022

## **Referee for manuscript published within**

1. Jordan Journal of Pharmaceutical Sciences
2. Journal of Pharmaceutical Biology
3. Jordan Journal for Biological Sciences
4. African Journal of Microbiology Research
5. Journal of Essential Oil Bearing Plants
6. Journal of Pharmaceutical Biology
7. Journal of Medical Microbiology
8. Journal of Applied Microbiology

## **Teaching Experience**

1. Basic Microbiology
2. Pharmaceutical Microbiology
2. Selected Topics in Pharmaceutical Microbiology
3. Advanced Pharmaceutical Microbiology-MSc
3. Immunology and Genetics

4. Pharmacy Regulations and Ethics
5. Seminar in Pharmaceutics and Pharmaceutical Technology
6. Infectious clinical rotations
7. Bioethics in Pharmacy Practice

## Quality Control and Assurance experience

1. Pharmacy Education Accreditation:
  - a. Team leader for Second ACPE Interim Report, January, 2018
  - b. Team Leader for First ACPE Interim Report Preparation and Supplementary report - April 2017 and May 2017
    - a. Head of Steering Committee of ACPE accreditation committee for BSc and Pharm D programs at the School of Pharmacy-The University of Jordan (2014-2016)
    - b. Head of the Accreditation and Quality assurance Committee (2014-current)
    - c. Dean Assistant for Academic Development. Faculty of Pharmacy, University of Jordan for three years during which the Program Specification and Self -Assessment Documents for the Faculty of Pharmacy had been prepared according to the specifications of Quality Assurance Agency, UK (2005)
    - d. Assessment of Pharmacy Education in Jordan as a committee member of Higher Education Accreditation Commission
2. Member of the JFDA committee for microbiological labs accreditation. The responsibilities included
  - a. Inspection of the premises
  - b. Evaluation of the SOPs
  - c. Evaluation of the QC and QA

All these require a comprehensive knowledge for all the QC tests that are used to evaluate the antimicrobial potency of biocides, the preservative efficacy of preservatives, the microbiological quality of sterile and non-sterile drugs, food, water and biocides.

3. Consultant to the Jordan Standards and Metrology Organisation for the revision and the establishment of SOPs for the Microbiological assessment of Pharmaceuticals and Cosmetics According to ISO requirement.
4. Head of Steering Committee for the preparation of Self Study Report for ACPE accreditation of BSc and PharmD programs at the University of Jordan-Faculty of Pharmacy (2014-2016).
5. Head of the Accreditation and Quality Assurance committee for preparation of PharmD program Accreditation by the Higher Education Accreditation Commission (2014).
6. Serving as a volunteer for ACPE's International Services Program (ISP) (2016-current)
7. Program director for the BSc program- the School of Pharmacy-The University of Jordan (2015-2018)