

Curriculum Vitae

د . "محمد علي" خليل ابراهيم شخاتره

"MUHAMAD ALI" KHALIL IBRAHIM SHAKHATREH, Ph.D.

**Department of Medical Laboratory Sciences, Faculty of Applied Medical Sciences,
Jordan University of Science and Technology,
Irbid - Jordan.**

Phone: +962-77-607-7201(C)

Email: mkshakhatreh@just.edu.jo, mashakhatreh@yahoo.com

<http://www.just.edu.jo/eportfolio/Pages/default.aspx?email=mkshakhatreh>

EDUCATION:

- Ph.D.** 2012: Microbiology, University of Dayton (USA), Dayton, OH
M.Sc. 2006: Microbiology and Immunology, University of Louisville (USA),
Louisville, KY.
B.Sc. 1990: Medical Technology, Jordan University of Science and
Technology, Irbid- Jordan.

PROFESSIONAL EXPERIENCES:

- May -2012- Present:** Assistant Professor (Microbiology), Jordan University of
Science and Technology, Department of Medical Laboratory
Sciences
- 2007- 2011 :** Graduate Teaching Assistant and Graduate Research Assistant,
University of Dayton (USA), Dayton, OH
- 1999-2003 :** Medical Technologist-Teaching assistant and research assistant-
Faculty of Medicine and Faculty of Applied Medical Sciences:
Jordan University of Science & Technology
- 1993-1999 :** Lab. Technologist "Supervisor" at the Genetics Laboratory-
University of Jordan -Medical School

RESEARCH EXPERTISE:

- Microscopy: Confocal microscopes.
- *In vivo* model of periodontitis: mouse model of *Porphyromonas gingivalis* infection
- Antibacterial and antifungal activities of different new synthetic compounds.
- Techniques of antimicrobial activity
- Diagnostic medical microbiology techniques and molecular microbiology.
- Bacterial biofilms.
- Thin Layer Chromatography (TLC), Polymerase chain reaction (PCR), *in situ* hybridization, RNA isolation, DNA isolation, DNA plasmid mini-preps.
- Construction of promoter reporter fusions.
- Bacterial diversity and community of hot springs and Dead Sea.
- Diagnostic medical microbiology techniques.
- Synthesis of silver nanoparticles by a pathogenic bacterial strains.

TEACHING EXPERIENCE:

Courses taught repeatedly (2011-present):

Jordan University of Sciences and Technology, Irbid, Jordan:

Department of Medical Laboratory Sciences/ Faculty of Applied medical Sciences;
Faculty of Medicine
Faculty of Dentistry

***Courses Taught:**

<i>Course</i>	<i>Undergraduate / Graduate Level</i>
ADVANCED CLINICAL LABORATORY TRAINING	G
ADVANCED MICROBIOLOGY AND IMMUNOLOGY	G
SPECIAL TOPICS IN CLINICAL MICROBIOLOGY	G
CLINICAL MICROBIOLOGY (I)	U
CLINICAL MICROBIOLOGY (II)	U
CLINICAL MICROSCOPY	U
IMMUNOLOGY	U
ORAL MICROBIOLOGY	U
ADVANCED CLINICAL MICROBIOLOGY AND IMMUNOLOGY I	G
ADVANCED DIAGNOSTIC MICROBIOLOGY PRACTICAL TRAINING 1	G
ADVANCED MEDICAL MICROBIOLOGY AND IMMUNOLOGY	G
CLINICAL MICROBIOLOGY HOSPITAL LABORATORY PRACTICE	G
CLINICAL MICROSCOPY - HOSPITAL LABORATORY PRACTICE	U
CLINICAL MICROBIOLOGY HOSPITAL LABORATORY PRACTICE	U
IMMUNOLOGY AND SEROLOGY	U

RESEARCH INTERESTS:

- **Medical Microbiology (Bacteriology) :**
- Bacterial Pathogenesis
- Host - Pathogen Interactions
- Urinary tract infections,
- Oral microbiology: Microbial Pathogenesis :Oral cavity microorganisms (pathogens and normal flora)
- Antibacterial and antifungal activities of new synthetic compounds
- Bacterial biofilms: Evaluation (assessment) of bacterial biofilm production capacity and antibiotic susceptibility(antimicrobial Susceptibility Profile)
- Antimicrobial resistance in bacteria : Antibiotic resistance
- *In Vivo* dynamics of the quorum sensing -related Interplay during interaction between the bacterium, and its eukaryotic host.
- Microbiological analysis and antimicrobial activity of Jordanian *hot-springs* water.
- Investigation of the microbial diversity in Jordanian hot springs by metagenomic analysis
- Examining microbial communities in the Dead Sea water through Amplicon sequencing using next-generation technology.

JOURNAL REVIEWER ACTIVITIES:

Reviewer for the Jordan Journal of Biological Sciences (JJBS),

Publications:

1. Hussein EI, Jacob JH, **Shakhatreh MAK**, Abd Al-Razaq MA, Juhmani AF, Cornelison CT. Exploring the microbial diversity in Jordanian hot springs by comparative metagenomic analysis. *MicrobiologyOpen*. 2017 Aug 10.
2. Jacob JH, Hussein EI, **Shakhatreh MAK**, Cornelison CT. Microbial community analysis of the hypersaline water of the Dead Sea using high-throughput amplicon sequencing. *MicrobiologyOpen*. 2017 Jul 5.
3. **Shakhatreh MA**, Jacob JH, Hussein EI, Masadeh MM, Obeidat SM, Juhmani AF, Abd Al-Razaq MA . Microbiological analysis, antimicrobial activity, and heavy-metals content of Jordanian Ma'in hot- springs water. *J Infect Public Health*. 2017 Feb 14.
4. **Shakhatreh MA**, Al-Smadi ML, Khabour OF, Shuaibu FA, Hussein EI, Alzoubi KH. Study of the antibacterial and antifungal activities of synthetic benzyl bromides, ketones, and corresponding chalcone derivatives. *Drug Des Devel Ther*. 2016 Nov 8;10:3653-3660.
5. Masadeh MM, Hussein EI, Alzoubi KH, Khabour O, **Shakhatreh MA**, Gharaibeh M. Identification, characterization and antibiotic resistance of bacterial isolates obtained from waterpipe device hoses. *Int J Environ Res Public Health*. 2015 May 13;12(5):5108-15.
6. Al-Bashaireh K, Elserogy AR, Hussein E, **Shakhatreh M**. Genuine or forged? Assessing the authenticity of a confiscated manuscript using radiocarbon dating and archaeometric techniques. *Archaeological and Anthropological Sciences* (p1-7). 2015.
7. **Shakhatreh MAK** and Robinson JB. The cell division gene *ftsZ2* of *Sinorhizobium meliloti* is expressed at high levels in host plant *Medicago truncatula* nodules in the absence of *sinI*. *African Journal of Microbiology Research*. January, 2012. Vol. 6(3), pp. 499-503.
8. Hajishengallis G, Wang M, Liang S, **Shakhatreh MA**, James D, Nishiyama S, Yoshimura F, Demuth DR. Subversion of innate immunity by periodontopathic bacteria via exploitation of complement receptor-3. *Adv Exp Med Biol*. 2008;632:203-19. Review.

9. Hajishengallis G, **Shakhatreh MA**, Wang M, Liang S. Complement receptor 3 blockade promotes IL-12-mediated clearance of *Porphyromonas gingivalis* and negates its virulence *in vivo*. J Immunol. 2007 Aug 15;179(4):2359-67.
10. Wang M, **Shakhatreh MA**, James D, Liang S, Nishiyama S, Yoshimura F, Demuth DR, Hajishengallis G. Fimbrial proteins of *porphyromonas gingivalis* mediate *in vivo* virulence and exploit TLR2 and complement receptor 3 to persist in macrophages. J Immunol. 2007 Aug 15;179(4):2349-5

CONFERENCES, MEETINGS, WORKSHOPS:

- Participated in pre-implantation genetic diagnosis workshop- Fluorescent in Situ Hybridization (FISH) - Genetics Laboratory-Jordan University: November, 1998.
- Participated in WHO international training course “Surveillance of Food Borne *Salmonella* and Antimicrobial Resistance in Food Borne Pathogens (Level 2): June, 2002.
- Attended American Society for Microbiology-105th- General Meeting –Atlanta- Georgia-USA. *Microarrays workshop*: June 5-9, 2005.
- Attended “Testing and Evaluation” workshop; 12 hours. 18-19 July, 2012. Academic Development and Quality Assurance Center. Jordan University of Science and Technology. Jordan
- Attended “Statistical Package for Social Sciences” workshop; 12 hours. 8-9 July, 2012. Academic Development and Quality Assurance Center. Jordan University of Science and Technology. Jordan
- Attended “Scientific Manuscript Writing” workshop, 10-11 Dec, 2014, RESCAP-MED, Dead Sea, Jordan
- Attended Symposium on Molecular Genetics of Human Diseases: The First German Jordanian Meeting: Molecular Genetics of Human Disease: 2015: Philadelphia University- Jordan

PRESENTATIONS AND SEMINARS

ORAL PRESENTATIONS (SCIENTIFIC CONFERENCES):

Title: Impact and influence of waterpipe tobacco smoking on bacterial oral flora:

2nd World Congress On Infectious Diseases: August 24 - 26, 2016 in Philadelphia ; Pennsylvania: USA.

CONFERENCE ABSTRACTS:

Impact and influence of waterpipe tobacco smoking on bacterial oral flora. Muhamad Ali K Shakhathreh, Omar F Khabour, Karem H Alzoubi, Majed M Masadeh, Emad I Hussein and George N Bshara. Jordan University of Science and Technology, Jordan. J Infect Dis Ther 2016, 4:4(Suppl).2nd World Congress on Pediatric Care & Pediatric Infectious Diseases and the International conference on Pediatric Care & Pediatric Infectious Diseases

Higher Plasma Adiponectin Levels in Patients with Atopic Dermatitis. Ammar K. Daoud, Rana A. Shbat, Omar F. Khabour, Mohammad A. Shakhathreh, Ayman M. Abu Awad, Journal of Allergy and Clinical Immunology, Vol 135:2 February 2015

GRADUATE STUDENTS:

Academic Supervision (Master Students):

**** Major Supervisor for the following M.Sc. students:**

1. **Ma'en Abdallah Mohammad Al-Odat:** Department of Medical Laboratory Sciences, Jordan University of Science and Technology: (Graduated in 2014)
Thesis title: Assessment of Pathogenic Potential of Urinary *Escherichia coli* Isolates by the Detection of Several Urovirulence Genes.
2. **Fatima Adamu Shuaibu:** Department of Medical Laboratory Sciences, Jordan University of Science and Technology: (Graduated in 2014)
Thesis title: Antibacterial and antifungal activities of selected chalcone derivatives
3. **Nazik Ali Yousef Ajo:** Department of Medical Laboratory Sciences, Jordan University of Science and Technology: (Graduated in 2016)
Thesis title: Evaluation of biofilm production and antibiotic susceptibility of bacteria isolated from diabetic foot ulcer patients.
4. **Omar Farhan Ammar:** Department of Medical Laboratory Sciences, Jordan University of Science and Technology: (2016: Defense was in August 2017)
Thesis title: Biosynthesis of silver nanoparticles from *Citrobacter freundii* as Anti-Biofilm Agents with their cytotoxicity effects on human cells.
5. **Nada Ghazi Latayfeh:** Department of Medical Laboratory Sciences, Jordan University of Science and Technology: (2016: Ongoing)
Thesis title: Assessment of Biofilm Production Capacity, Antimicrobial Susceptibility Profile, and Prevalence of biofilm virulence Genes of *Staphylococcus aureus* Isolated From Clinical Blood Culture specimens in Jordan.

6. Frarah Husam Atawneh: Department of Medical Laboratory Sciences, Jordan University of Science and Technology: (2016: Ongoing)

Thesis title: Asymptomatic vaginal colonization, virulence, biofilm formation, and antimicrobial resistance of *Streptococcus agalactiae* among Jordanian pregnant women.

**** Co-advisor for the following M.Sc. students:**

1. Heba Mohammad Obeidat: Medical Laboratory Sciences, Jordan University of Science and Technology: (Graduated in 2014)

Thesis title: Prevalence and molecular characteristics of *Streptococcus mutans* isolated from healthy and diabetic individuals.

2. Rana Adnan Shobat: Medical Laboratory Sciences, Jordan University of Science and Technology: (Graduated in 2014)

Thesis title: Association between adiponectin gene polymorphisms and atopic dermatitis.

****Thesis examination committee member for the following M.Sc. students:**

Falak Hisham Khasawneh : Medical Laboratory Sciences: Jordan University of Science and Technology ;(Graduated in 2017)

Wesam Shafeq Ahmed : Clinical Pharmacy ;(Graduated in 2016)

Nadia Mahmoud Al- Yahya: Medical Laboratory Sciences ;(Graduated in 2016)

Adan Hasan Alnaamneh: Applied Biological Sciences; Jordan University of Science and Technology (Graduated in 2016).

Fadya Adnan: Department of Biological Sciences (Biotechnology): Yarmouk University; (Graduated in 2016)

Musa Hassan Muhammad: Medical Laboratory Sciences ;(Graduated in 2014)

Munir Garba: Medical Laboratory Sciences ;(Graduated in 2014)

Razan Fares Alawneh: Medical Laboratory Sciences ;(Graduated in 2014)

Rama Fauzi Abu-Alhayjaa : Medical Laboratory Sciences ;(Graduated in 2014)

Rahamat Ismail Ishaq: Medical Laboratory Sciences ;(Graduated in 2014)

PROFESSIONAL AFFILIATIONS:

American Society of Microbiology

COMMUNITY SERVICES:

Participated in many free medical days in Al-Ramtha and Irbid (North of Jordan):2015.

Membership of University Committees :

Member of several different committees in the Department of Medical Laboratory Sciences, Jordan University of Science and Technology (graduate studies and scientific research committee ; scientific activities and community service committee)

Served as member of Faculty Council at the Faculty of Applied Medical Sciences, Jordan University of Science and Technology.

Served as member of several different committees at the Faculty of Applied Medical Sciences, Jordan University of Science and Technology.