



Khaled M Khleifat
Professor of Microbiology

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PERSONAL DETAILS:

Nationality Jordanian
 Place & Date of Birth Wadi Mousa. 15th March, 1966
 Marital Status Married
 Dependents 2
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WORK ADDRESS

Dept. of Biology, College of Science, Mutah University, P.O.Box
 (7) Mutah, Karak, 61710, Jordan
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EDUCATION

1972- 1981 AL-Taybeh Preparatory School Maan, Jordan
 1982- 1984 Maan Secondary School, Maan, Jordan
 1984- 1988 Biology Dept. Faculty of Science, Sallah-Addin, University, Arbil,
 Iraq
 1990- 1993 Biology Dept. Faculty of Science, Ankara, Turkey
 1995- 1999 Biology Dept. Illinois Institute of Technology, Chicago, USA

DEGREE

1988 B. Sc. Microbiology, Faculty of Sciences, Arbil, Iraq
 1993 M. Sc. Biology, Faculty of Sciences, Ankara, Turkey
 1999 Ph. D. Biology (Illinois Institute of Technology, Chicago, USA)

Ph.D THESIS

2,4-DNT Dioxygenase Purification from Recombinant *E. coli* Strain PFJS39, its Characterization and Interaction With the bacterial Hemoglobin Expressed by *vgb*

M.Sc. THESIS

Ultra Structure of Kidney After Bile Duct Ligation in Rabbit

FIELD OF SPECIALIZATION

Microbiology (Gene Cloning, Enzyme Purification, Identification of bacteria, Bioremediation, Heavy Metal Uptake, Biochemical and Physiological Studies, Environmental Pollution)

CURRENT RESEARCH INTERESTS

Isolation and identification of organic compounds-degrading bacteria in different locations in south of Jordan. Heavy metals uptake in bacteria. Bacterial hemoglobin biotechnology (effect on heavy metal bioaccumulation, enzyme productivity, response to antioxidants in bacteria). Some local work on environmental pollution including bacterial composition of waste water, Enzyme purification and kinetics.

ACADEMIC ADMINISTRATION EXPERIENCE

2000-2003 Head of the Dept. of Biology, Mutah University, Jordan

2007- 2008 Vice Dean of College of Science, Mutah University, Jordan

2007- 2008 Chairman of post graduate committee in the Faculty of Science, Mutah University, Jordan

ACADEMIC RANKS

1999- 2004 Assistant professor, Mutah University, Jordan

2004-2008 Associate Professor, Mutah University, Jordan

8/8/2008 Professor in Microbiology

ACADEMIC RECORD

1993-1994 Lecturer in Biology, Al-Zaytona University, Amman, Jordan

1994-1995 Teaching assistant, Dept. of Biology, Mutah University, Karak, Jordan

1997-1998 Teaching assistant, Dept. of Biology, Illinois Institute of Technology, Chigago, Illinois, USA

1997-1999 Part-time lecturer at Robert Morris College, Chicago, IL, USA

1999-1999 Post Doctorate at Medical School, University of Illinois at Chicago, USA

1999- 2004 Assistant professor, Mutah University, Jordan

2000-2003 Chairman of the Postgraduate Studies Committee at the Dept. of Biology, Mutah University, Jordan

2000-2005 Member of the Council of the Faculty of Science, Mutah University, Jordan

2004-2005 Member of student discipline committee in the faculty of Sciences, Mutah University, Jordan

2003-onward Chair and member of several interrogation committees for academic staff and employees of the faculty of sciences.

2005-onward Member of the Research Committee in the college of Science, Mutah University, Karak, Jordan

2006-2007 On sabbatical leave, Sohar University, Sohar, Oman.

2006-2007 Member of the Research Committee in the Sohar University, Sohar, Oman

2007- Member of post graduate committee in the Mutah University.

2007- Member of the Council of the Faculty of Science, Mutah University, Jordan

RESEARCH EXPERIENCE

I Intend several works in my national and international conferences and published more than 35 papers. Right now I am Supervising 3Master Students and 17 MSc students were already graduated through 2003-2009.

MSc Students and Their Thesis Titles:

1. Muhamad Odeh Al-limoun: The effect of different carbon and nitrogen sources on copper uptake by three strain of *E.coli* , 2004.
2. Khalid Y. Al-Sharafa : Factors affecting the production of β -Galactosidase in different Strains of *Enterobacter aerogenes*, 2004.(Co-advisor)
3. Ibraheem S. Al- Majali: Phenol biodegradation by klebsiella Oxytoca, 2005.
4. Waad Al-Shamailah: Effect of wastewater treatment on the bacteria Quality And Quantity at mutah University plant, 2005.
5. Feryal Khraisat: Isolation of lanate-degrading bacteria from Jordan Valley, University of Jordan, (Co-advisor)
6. Sabah Eid Abu – khalil: Biodegradation of phenol by isolated bacteria from soil of Al-kherbah Al-Samrah in Jordan, 2006.
7. Nadia ahmad Al-Maabreh: Biodegradation of some surfactants by two bacterial consortium, 2005.
8. Elshafei M. Badawi: Activation and inhibition of plant polyphenol oxidase enzyme, 2004 (Co-advisor)
9. Reema Atallah Al-Halasa: Biodegradation of linear Alkylbenzene Sulfonate by a pure culture of bacteria isolated from Al-kherbeh Al-Samrah, Jordan , 2006.
10. Haitham N.Qaralleh: Effect of Herbal plants on the growth of *pseudomonase aeruginosa* , 2006 (Co-advisor)
11. Jafar juma Hassony Al-kurishy: Isolation of bacteria causing urinary tract infections, 2005.
12. Farah Mohammad Salih Turkey : Using Chlorobenzoic Acid Compounds as growth substrate and detection of their Degrading enzyme in isolated Aeromonas Hydrophlia , 2009 (Co-advisor).
13. Ibrahim khaled AL- Kafawin: Biodegradation of 2-Chlorobenzoic acid by *Acinetobacter calcoaceticus*: Effect of some growth conditions, 2009.
- 14.Nawel Rashid Adjeroud: Cadimum-resistant bacteria isolated from Petra City wastewater treatment station, 2009.
15. Shadiya Al-Majali: using 3-4 dichlorobenzoic acid as carbon source by Corynbacterium argentinaea
16. Haya Alawi: Biodegradation of 3-4 dichlorobenzoic acid by bacterial strains isolated from wsatewater

▪ **I was a member of MSc thesis defense committee for more than 32 MSc students**

▪ **Some of the projects in microbiology that were supported by university grants Include:**

1. Using Bacterial Hemoglobin Gene, *vgb* Biotechnology as a Positive Enhancer for the Biodegradation of Organic Compounds,
2. Effect of Waste Water Treatments on the Bacterial Composition of the Karak Hospital Waste Water (local study)
3. Isolation of Heavy Metal-Resistant Bacteria from Industrial Karak City and Determine if the gene responsible fore heavy metal resistance is Chromosomal or on Plasmid
4. Correlation of bacterial hemoglobin and aeration and their effect on α -amylase activity in the transformed *Enterobacter aerogenes*
5. Biodegradation activity of organic compounds by bacteria isolated from wastewater and soil.
6. Isolation and Identification of Pesticides-degrading Bacteria from Jordan Valley.
7. Effect of chlorination of wastewater on the antibiotic-resistant profile (Petra province wastewater treatment plant, South of Jordan)

AWARDS

- 7.1. 2008 Attained a one-year seniority for propmotion purpose
1995-1999 Mutah University Scholarship for Completing the PhD at Chicago, USA.

1990-1993 Ministry of Higher Education Scholarship for Completing the MSc at Ankara, Turkey.
 1984-1988 Ministry of Education Scholarship for Completing the BSc at Irbil, Iraq.

CONFERENCES

1999 American Society for Microbiology Conference, Chicago, USA
 2000 2nd Euro conference for Biometals, Dresden, Germany
 2001 2nd Conference of the Life Sciences, Yarmouk University, Irbid, Jordan
 2002 International Conference for Biotechnology Safety, Damascus, Syria
 2006 Workshop on Bioinformatics (Cornel University, Ethica, NY, USA: using database for gene sequencing and possible application in the Dead Sea region).
 2008 Kinetics of phenol biodegradation from aqueous solution using *Ewingella americana*, 5th Int. Conference for Biological Sciences, Tanta University, Tanta, Egypt.

LEARNED SOCIETIES

Membership of:

- Editorial Board of Online Journal of Biological Sciences, Pakistan, 2001-2004
- American Association for the Advancement of Science (AAAS) 2003-2005
- American Chemical Society (ACS) 2004-2005
- American Society for Microbiology (ASM) 2003-2005

ANONYMOUS REVIEWER for JOURNALS

- Enzyme and Microbial Technology, elsiever Publisher
- Journal of Hazordous Materials, elsiever Publisher
- Current Microbiology (Springer-Verlag, USA)
- Biochemical Engineering Journal, elsiever Publisher
- Online Journal of Biological Sciences (ANSInet)
- Mutah Lil-Buhuth Waddirasaat, Mutah University, Jordan
- Journal of Chemical Engineering
- African J. Food Science

COURSES TAUGHT

- Advanced Microbial Physiology
- Cell Biology
- Practical Microbiology,
- Biology for Nursing Students
- Practical Molecular Biology
- Environmental Science and Medical Biology (At Robert Morris College, Chicago, USA)
- Practical Biochemistry (IIT, Chicago, USA)
- Genetics and Microbial Genetics
- Molecular Biology
- Practical General Biology 1 & 2
- Microbiology for Nursing Student
- General Microbiology
- General Biology (Section 1 and 2)
- Practical Medical

Skills

- ICDL,
- Three languages (English, Turkish and Arabic)

REFEREES

•Professor Dale Webster
 Dept. of Biology, Illinois Institute of Technology
 3300 South Federal Street, Chicago, IL 60616-3793 Tel 312.567.3000

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•Professor Benjamin Stark
 Dept. of Biology, Illinois Institute of Technology

3300 South Federal Street, Chicago, IL 60616-3793 Tel 312.567.3000
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• [Professor Ratib Al-Oran](#)
[Dept. of Biology, Mutah University, Karak, 61710, Jordan](#)

• Professor Khaled A. Tarawneh
 Dept. of Biology, Mutah University, Karak, 61710, Jordan
tarawneh@mutah.edu.jo

• Prof. Yacoub Salim Masa'efah
 Tafila Technique University
yacoub111@yahoo.com

LIST OF PUBLICATIONS:

Dr. Khaled M. Khleifat

1. **Khaled M Khleifat**, Isam H Aljundi, Ali M Khlaifat, Atef M. Ibrahim, Khaled A Tarawneh, Salah Tarawneh. (2009). Using 2-Chlorobenzoic Acid as Growth Substrate by *Klebsiella oxytoca* : Mathematical Modeling and Effect of Some Growth Conditions
2. **Khleifat, K. M.**. 2009.Characterization of 2,4-DNT Dioxygenase From Recombinant *E. coli* Strain PFJS39, Its Direct Interaction with *Vitreoscilla* Hemoglobin. (Submitted)
3. Abboud , MM., Khleifat, K. M., Khlaifat, A. M., Al-Tarawneh, A. A., Qaralleh, H. N. (2009). Effects of *Thymus capitatus* and its essential oil components on *Pseudomonas aeruginosa* isolated from burn patients (Submitted)
4. Aljundi, I., **Khleifat, K. M.** (2009). Biosorption of Lead by *E. coli* Strains Expressing *Vitreoscilla* hemoglobin: Isotherm modeling with two- and three-parameter models (Submitted)
5. **Khleifat KM**; Nawayseh, K, Adjeroud, NR; Tarawneh, KA, A, Adjeroud RM, Abdelgani, A. 2009. Effect of cadmium-resistance plasmid on Cd⁺² biosorption, uptake and adsorption by *Klebsiella oxytoca* (Bioremediation J. In Press).
6. Tarawneh, K; **Khleifat, K.M** et al (2009). Evaluation of cefaclor oral suspensions stability by using reversed phase high performance liquid chromatography and antimicrobial diffusion methods (Process Biochem. In Press).
7. Khleifat, KM†; Khaled A Tarawneh†, Halasah, Rima A, Reyad Shawabkeh, Zina Halasah. 2009. Biodegradation of Linear Alkylbenzene Sulfonate by *Burkholderia sp.*: Effect of some growth conditions (Accepted for Publication).
8. Aljundi, IH, **Khleifat KM**, Abboud, MA., Dmour, S., Khaled A Tarawneh. 2009. Biodegradation kinetics and modeling of whey lactose by bacterial hemoglobin Vhb-expressing *E. coli* strain.(Submitted).
9. Qaraleh, H.N., Abboud, M.M., Khleifat, K.M., Tarawneh, k.A. and Althunibat, O.M .(2009). Antibacterial activity in Vitro of *Thymus capitatus* from Jordan. Pak. J. Pharmacol. (In Press)

10. Omar S., Tarawneh KA, Abu Samhadana Z. **Khleifat KM (2008)**. Inhibition of *Enterobacter sakazakii* in reconstituted infant milk formula by probiotics, nisin and some of plant extract (Submitted)
11. Abboud, M., Al-Tarawneh Amjad, **Khleifat KM** Tarawneh Khaled and Homodi Saed. Copper uptake *in vivo* and *in vitro* by *Pseudomonas aeruginosa* isolated from burn-infected patients (Curr. Microbiology, In Press)
12. Tarawneh, K.A; Sharaf Omar, Osama Twissi, **Khleifat, KM**; Ahmad Al-Mustafa and Khaled Al-Sharafa (2008). Antifungal and antioxidant effects of extracts of some medicinal plant species growing in south Jordan. Bull. Fac. Agric., Cairo Univ.,59 (2008): 242-249.
13. Khaled A Tarawneh Nafe M. Al-Tawarah, Adel Abdelghani, Ahmad M. Al-Majali AND **Khaled M Khleifat** (2008). Characterization of Verotoxigenic *Escherichia coli* (VTEC) isolated from slaughtered small ruminants and slaughterhouses in Southern Jordan. J Basic Microbiol. 48 (1-8).
14. Tarawneh, K, **Khleifat, KM**; Ahmed Al-Mustafa, Nadia Alioui, Mohammad A. Wedyan and Stephen J. Free (2008). Temporal Expression of *Neurospora crassa* Tyrosinase Gene Under The Control of Glucose –Repressible Gene-1(Grg-1) Promoter. Aust. J. Basic Appl. Sci.. 2 (4) 805-814
15. Abbod M. M; **Khleifat KM**; Tarawneh KA; Al-Mustafa AH; ; Elshafei Badawi M (2008). Effects of Free Amino acids on Catechol Oxidase From Different Plant Sources. Advances in Food Sciences Journal, 30 (1).1-8
16. Tarawneh, KA., Wedyan, M., Al-zou'bi, MA **Khleifat, K.M.**, Tarawneh, A. 2008. Isolation and characterization of halophilic bacteria from the Dead Sea Coast, Jordan. Adv. Environ. Biol. 2(2): 63-69, 2008
17. **Khleifat KM**. (2007). Biodegradation of Phenol by *Actinobacillus* sp: mathematical interpretation and effect of some growth conditions. Bioremediation Journal, 11 (3): 1-10
18. **Khleifat KM** and Ahmed H Al-Mustafa (2007). The Effect of Some Nitrosative Agents on the Growth of *vgb*-bearing *Enterobacter aerogenes* Strains . Curr. Microbiol. 55 (1):30-5. 2007
19. **Khleifat, K.M.** Khaled A Tarawneh, Amjad A Al-Tarawneh, Khalid AlSharafa; Mohammad A Wedyan (2008). Growth kinetics and toxicity of *Enterobacter cloacae* grown on linear alkylbenzene sulfonate as sole carbon source. Curr. Microbiol. 57 (4), 364-370.
20. **Khleifat, KM**. (2007). Effect of Substrate Adaptation, Carbon Starvation and Cell Density on the Biodegradation of Phenol by *Actinobacillus* sp. Fresenius Environmental Bulletin, 16 (7): 726-730
- 21 **Khleifat K. M**, Ibrahim Al-Majali; Reyad Shawabkeh and Khaled Tarawneh (2007). Effect of Carbon and Nitrogen Sources on the Biodegradation of Phenol by *Klebsiella oxytoca* and Growth Kinetic Characteristics. Fresenius Environmental Bulletin, 16 (5) 1-7.
22. Abboud, M. M., **Khleifat, Khaled M** Mufeed Batarseh, Khaled A. Tarawneh, Ahmed AlMustafa and Maali Al-Madadhah (2007). Different optimization conditions required for enhancing the biodegradation of linear alkylbenzenesulfonate and sodium dodecyl sulfate surfactants by novel

- consortium of *Acinetobacter calcoaceticus* and *Pantoea agglomerans*. *Enz. Microbiolol. Technology*, 41: 432-439.
23. Shawabkeh, Reyad; **Khaled M. Khleifat** ; Ibrahim Al-Majali ^b; Khaled Tarawneh (2007). Rate of Biodegradation of Phenol by *Klebsiella oxytoca* in Minimal Medium and Nutrient Broth Conditions. *Bioremediation Journal*, 11 (1) 13 - 19
 24. **Khleifat, KM. (2006)**. Biodegradation of sodium lauryl ether sulfate (SLES) by Two different Bacterial Consortia. *Curr Microbiol.* 53, 444-448
 25. **Khleifat K.M.**, Al-Mustafa , A.H., Abboud , M.M (2006). Effect of *Vitreoscilla* Hemoglobin Gene (*vgb*) and Metabolic Inhibitors on Cadmium Uptake by the Heterologous Host *Enterobacter aerogenes*. *Process Biochemistry*,41 (4) 930-934, UK
 26. **Khaled M Khleifat (2006)** . Correlation between bacterial hemoglobin and carbon sources: Their Effect on the Cu Uptake by Transformed *E. coli* strain α DH5. *Curr. Microbiol.* 52 (1) 64 68
 27. **Khleifat K. M.**, Sharaf S. Omar and Jafar H. Al-Kurishy (2006). Urinary Tract Infection in South Jordanian Population. *Journal of Medical Sciences* 6(1): 5-11
 28. **Khleifat K** (2006). Biodegradation of Linear Alkylbenzene Sulfonate by a Two-Member Facultative Anaerobic Bacterial Consortium. *Enz. Microbial Technol*, 3 (5), 1030-1035
 29. **Khleifat K.M.**, Al-Mustafa , A.H., Abboud , M.M (2006) Effects of Carbon Source and *Vitreoscilla* Hemoglobin (VHb) on the Production of β -galactosidase in *Enterobacter aerogenes*. *Curr. Microbiol.* 53, 277-281
 - 30.. **Khleifat K.** (2006) Biodegradation of Phenol by *Ewingella americana*: Effect of Carbon Starvation and Some Growth Conditions. *Process Biochemistry*, 41: 2010-2016
 31. **Khaled Khleifat**, Abboud, M., Al-Shamayleh, W., Jiries, A., Tarawneh, K. . (2006) Effect of Chlorination Treatment on Gram Negative Bacterial Composition of Recycled Wastewater .*PJBS*, 9 (9) 1660-1668.
 32. **Khleifat K**, Laymun, L., Al-Sharafa, K., Abboud, M., Tarawneh, K (2006). Effect of variation in copper sources and growth conditions on the copper uptake by bacterial hemoglobin gene (*vgb*) bearing *E. coli*. *PJBS*, 9(11): 2022-2031
 33. **Khleifat, K.** and Abboud, M.M. 2003 Correlation between bacterial hemoglobin gene (*vgb*) and aeration: their effect on the growth and amylase activity in transformed *Enterobacter aerogenes*. *Journal of Applied Microbiology* 94, 1052-1056,UK
 34. **Khleifat, K.** Homady M.H. and Tarawneh K.A 2002 Histopathological effects of *Ferula hormonis* extract on the colon of male mice. *Mutah Lil-Buhuth wad-Dirasat*, 17 (2) 47-58
 35. **Khleifat K.**, Shakhaneh, J., and Tarawneh K. 2002 The chronic effects of *Teucrium polium* on some blood parameters and histopathology of liver and kidney in the rat. *Turk J Biol.* 26 65-71

36. Shakhanbeh, J. and **Khleifat, K.** 2003 Failure of regeneration of sensory nerve fibers following neonatal denervation and crush lesion in rats. *Turk. J. Biol.*, 27, (2003), 215-221.
37. Homady M., Hussein, H., Jiries A., Mahasneh, A., Al-Nasir, F. and **Khleifat, K.** 2002 Survey of some heavy metals in sediments from vehicular service stations in Jordan and their effects on social aggression in prepubertal male mice. *Environmental Research* 89, 43-49, USA
38. Homady, H. H., **Khleifat, K.M.**, Tarawneh K. A and Al-Raheil, I. A. 2002 Reproductive toxicity and infertility effect of *Ferula hormonis* extracts in mice. ***Theriogenology*** (57) 2247-2256, USA
39. Lahony, S. R., **Khleifat, K.**, Al-Tarawneh, K. A., Abboud, M.M, Al-Oran, R.M., Al-Tarawneh, A.A., and Homady, M.H., 2002 Variations in five species of Jordanian reptiles with new record on the land tortoises *Testuda floweri* (Testudinidae: Chelonia). *Pakistan J. Zool.*, 34 (1) 43-49
40. **Khleifat, K.** Homady M.H, Tarawneh K.A and Shakhanbeh, J. 2001 Effect of *Ferula hormonis* extract on social aggression, fertility and some physiological parameters in prepubertal male mice. ***Endocrine Journal***, 48 (4), 473-482
41. **Khleifat, K.M** 2001 Presence of the bacterial hemoglobin gene (*vgb*) enhances culturability of a recombinant *Escherichia coli* α DH5 strain^{The} *Sciences* 1 (4), 239-243
42. **Khleifat, K.** and Homady, H.M. 2000. Bacterial hemoglobin gene (*vgb*) transformed into *Escherichia coli* enhances lead-uptake and minimizes it's adsorption. *Pakistan Journal of Biological Sciences* 3 (9) 1480-1483

IN PREPARATIONS:

1. **Khleifat et al (2008).** Isolation and Identification of lanate and organophosphate-degrading bacteria from Jordan Valley
2. **Khleifat et al (2008).** Isolation of antioxidant enzymes from some halophilic bacteria