Personal Data

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Education

- B.Sc., Biological Sciences, 1990, Oklahoma State University, Stillwater, OK, USA
- Ph.D., Molecular Immunology, 1995, University of Tulsa, Tulsa, OK, USA. *Title of PhD Dissertation*: Characterization of the extrathymic pathway of murine intestinal intraepithelial lymphocyte (i-IEL) development

Honors and Awards

- Teaching assistantship award for academic excellence, University of Tulsa, Tulsa, Ok. USA. Sep. 1991-June 1992 and Sep. 1991-June 1993
- Research assistantship award for excellence in research, University of Tulsa, Tulsa, Ok, USA June 1993-Nov. 1995
- Recognized by the 2003 *Abdel-Hameed Showman* Prize committee for Young Arab Scientists for distinction and excellence in scientific research (first runner up).

Societies and Associations

- Canadian Society for Immunology, Canada.
- Middle East Molecular Biology Society, Dubai, UAE.
- National Center for Biotechnology (NCB), Higher Council for Science and Technology (HCST), Amman, Jordan.

Training Courses & Workshops

- Hands-on workshop on the Usage of and Care for Laboratory Animals organized by the IACUC and LARU, Oklahoma State University, Stillwater, OK, USA (March 20-April 2, 1993).
- Training Program for OSHA's Right-to-Know and Blood Borne Pathogens, OMRF, Oklahoma City, OK, USA (November 3-8, 1995).
- A training workshop for Effective Classroom Teaching Strategies for University Undergraduate Students, Hashemite University, Jordan (Nov. 12-23, 2000).
- Electronic Learning Workshop series: Hands on training in FrontPage applications, Macromedia-flash, -fireworks, -Dream weaver and -authoring tools, construction of courses on the web; Hashemite University, Jordan (July 8-Sep 4, 2003).
- Intensive practical training course on Flow Cytometry: Theory & Applications; Partec Corporation, Mūnster, Germany (Sep. 21-Sep. 26, 2003).
- An education workshop titled "The Problem-Based Learning Facilitator Workshop" held at the University of Sharjah, Sept. 17th, 2011.
- Becton Dickinson-sponsored "Middle East Research Flow Cytometry User's Workshop, Dubai, UAE, Dec. 11th-12th, 2012

Professional Experience

Career Track

- Professor and Chair, Department of Medical Laboratory Sciences, University of Sharjah, UAE, Jan. 2016-Present.
- Associate Professor and Chair, Department of Medical Laboratory Sciences, University of Sharjah, UAE, Sep. 2014-Jan. 2016.
- Associate Professor, Department of Medical Laboratory Sciences, University of Sharjah, UAE, Sep. 2011-Present.
- Technical Consultant (QC/QA and R&D Departments), JMS Medicals, Toronto, Canada / Zarqa, Jordan, Dec. 2008-Dec. 2011.
- Associate Professor, Taif University School of Medicine, Taif, KSA, Sept. 2006-Sept. 2008.
- Associate Professor, Department of Biology & Biotechnology, Faculty of Science, Hashemite University, Jordan, Aug. 2003-Sept. 2006.
- Assistant Professor, Department of Biology & Biotechnology, Faculty of Science, Hashemite University, Jordan, Sept. 1999-Aug. 2003.
- Assistant Professor, Department of Medical Technology, Zarqa Private University, Jordan, Sept. 1996-Sept. 1999.
- Postdoctoral Fellow, Immunobiology & Cancer program, Oklahoma Medical Research Foundation, USA, Aug. 1995-Jul. 1996.
- Research/Teaching Assistant, Department of Biological Science, The University of Tulsa , OK, USA, June 1991-Aug. 1995.

Teaching Experience

- Undergraduate level courses taught to students of medical lab technology, biology & biotechnology, and medicine: General Biology I & II (teaching and course coordination), Basic Immunology, Clinical and Diagnostic Immunology, Hematology, Basic Genetics, Clinical and Medical Genetics, Evolutionary Genetics, Molecular Biology, Cancer Biology, and Senior Research Projects.
- Graduate level courses taught to graduate students of medical lab technology and/or biology: Molecular Immunology, and Special Topics in Immunobiology and Immunogenetics.

Technical Expertise

- Thorough familiarity with the evaluation & interpretation of general health indicators (e.g. blood picture, liver and kidney function tests, lipid profile, etc), hematological investigations, immuno-profiling, and histocompatibility testing.
- Thorough familiarity with routine lab equipment (Elisa readers, specs, potentiometers, thermal cyclers, cell counters, sample processing and preservation equipment, etc.).
- Extensive theoretical and practical knowledge of specialty lab equipment (flow cytometry and cell sorting equipment, DNA analyzers etc.).
- Extensive experience in cell culture techniques, cell sorting (FACS) and flow cytometric analysis, diagnostic and clinical applications of flow cytometry (e.g. phenotypic profiling of normal and abnormal cells, cell purification, stem cell preparation and enrichment, etc), immunofunctional assays (e.g. proliferation, cytotoxicity, Ellispot, Elisa), and gel blotting techniques.

- Extensive experience in the construction and handling of experimental animal models that can be used to evaluate host-pathogen interactions or elucidate the development and function of various lymphocyte subsets. Such models involve surgical procedures (thymectomy, ovarectomy, splenectomy, etc.), drug-induced initiation and maintenance of disease (e.g. EDVC), irradiation-based immune system reconstruction (e.g. ATxBM), naturally-occurring immunodeficient models (nudes, scids, etc.) and genetically-modified models (transgenic and knockout mice).
- Extensive experience in various molecular techniques including blotting techniques, PCR and RT-PCR procedures, and procedures that evaluate gene expression at the RNA and protein levels.
- Significant experience in quality control and quality assurance issues as they pertain to diagnostic labs and diagnostic and small-sized pharmaceutical manufacturing facilities (SOPs, GMPs, GLPs, ISO certification issues).
- Significant experience in establishing and managing small lab animal (mice, rats, rabbits, hamsters, and guinea pigs) vivaria.

Research Grants

1. Murine Athymic Radiation Chimeras: Delineating the role of the thymus in protection against localized infections. Hashemite University Deanship for Scientific Research. **Principal investigator**; Total fund awarded: JD 8570; June 2000-Feb. 2002.
2. Haptoglobin polymorphism, ceruloplasmin and oxidized LDL: possible links with cardiovascular diseases. A. H. Showman Foundation. **Co-investigator**; total fund awarded *JD15000; May 2001-May 2003*
3. The prevalence of *Helicobacter pylori* [*Campylobacter pyloridis*] infection in Jordanian patients suffering from gastrodouadenal disorders: A methodology-based comparative approach. **Co-investigator**; total fund awarded: *JD 3930, Dec. 2002.*
4. On the development and evaluation of experimental antifungal & anticancer agents: Synthesis and bioassay of some 2-ferroceny 1-5 fluoro-6-(4-substituted 1-piperazin ring)-1 H-Benzimidazoles. Deanship for graduate studies and scientific research, Hashemite University, Jordan. **Co-investigator**; total fund awarded: *JD 5000, April 2002*.
5. Genetic variation of various short tandem repeats (STR) in the Jordanian population. Deanship for graduate studies and scientific research, Hashemite University, Jordan. **Co-investigator**; total fund awarded: *JD 5000, Nov. 2001*.
6. Genetic variation of various Short Tandem Repeats (STR) loci among Jordanian minority populations. **Co-investigator**; total fund awarded: *JD 5800, Dec. 2002.*
7. The clinical impact of the Human Y-chromosome and cytochrome P405 genetic loci on human fertility and drug metabolism, **Co-investigator**; total fund awarded: *JD 44150, Aug. 2004.*
8. The Immunologic Relevance of vaginal T lymphocytes in experimental vaginal candidosis in the murine system. Hashemite University Deanship for Scientific Research. **Principal investigator**; Total fund awarded: 6560 JD; May 2004.
9. Epsilometer Test-Based Determination of Susceptibility of Clinically Important *Candida* Isolates to Conventional Antifungal Agents. Hashemite University Deanship for Scientific Research, **Co-investigator**),total fund awarded: 960JD; May 2006.
10. Delineating the immunological basis for increased susceptibility to vaginal candidosis in diabetic females: The estrogen connection. University of Taif competitive research

grants. **Principal investigator**; Total fund awarded: SR 196,000 SR (~60,000 USD). Nov. 2007-Nov. 2008.

11. Immunosuppression as a possible explanation for the ability of estrogen to protect against diabetes mellitus on the one hand and predisposes to vaginal candidiasis on the other. Seed grant from the UOS college of graduate studies and research. **Principal investigator**; Total fund awarded: AED 20,000. Jan. 2012-June 2013.
12. Evaluating the ability of iron chelation therapy to improve the outcome of antifungal treatment in hosts with estrogen-maintained vaginal candidiasis. Boehringer-Ingelheim, Dubai, UAE. **Principal investigator**; Total fund awarded: AED 18,000; April 2014- Oct. 2014.
13. The role of estrogen in iron storage and release in lymphocytes. Boehringer-Ingelheim, Dubai, UAE. **Principal investigator**; Total fund awarded: AED 19,000;. April 2015- Oct. 2015.
14. University of Sharjah collaborative research grant. Evaluating the capacity of estrogen-mediated downregulation of hepcidin synthesis to deplete intracellular iron stores in breast cancer cells. **Principal Investigator**. *Total fund awarded:* AED 141,600. May 2015-May 2017.
15. University of Sharjah Research Group Grant. (2015-2016) Iron Biology Group. **Group Leader**. Total Fund awarded: AED 100,000 annual budget.
16. Assessing the effect of estrogen-induced intracellular iron depletion on the proliferation and activation potential of human T lymphocytes. Boehringer-Ingelheim, Dubai, UAE. **Principal investigator**; Total fund awarded: AED 16,000;. April 2016- Oct. 2016.
17. University of Sharjah Research Group Grant. (2016-2017) Iron Biology Group. **Group Leader**. Total Fund awarded: AED 120,000 annual budget.
18. Evaluating the anti-carcinogenic potential of biologically-driven intracellular iron depletion. 2016 (2 years). Al-Jalila Foundation. **Principal Investigator** Total fund awarded: AED 290,000.

Publications

Research & Review Articles

1. **Hamad M** and JR Klein. 1994. Functional heterogeneity of murine intestinal lymphocytes: Implications for route of differentiation and responsiveness to proliferation induction. *Immunology 82:611-616. PubMed*
2. Mosley RL, **M Hamad**, M Whetsell, and JR Klein. 1994. A novel marker of murine bone marrow hematopoietic stem cells that is expressed on peripheral T cells and is associated with a functionally important molecule on activated cytotoxic T lymphocytes. *Hybridoma 13:353-358. PubMed*
3. Mosley RL, J Wang, **M Hamad,** and JR Klein. 1994. Functional heterogeneity of murine intestinal intraepithelial lymphocytes: Studies using TCR-alpha/alpha^{+} IEL lines and fresh IEL isolates reveal multiple cytotoxic subsets differentiated by CD5, CD8 alpha/alpha, and CD8 alpha/beta expression. *Developmental and Comparative Immunology 18:155-164. PubMed*
4. Stickney D, J Wang, **M Hamad,** and JR Klein. 1994. Heat-stable antigen may be an early marker of extrathymic murine intestinal intraepithelial lymphocytes. *Blood 84:3034-3039. PubMed*
5. Klein JR, and **M Hamad**. 1994. Gamma/Delta T cells, antigen recognition and intestinal immunity. *Immunology Today 16:108-109. PubMed*

6. **Hamad M,** and JR Klein. 1995. T cell precursors in the spleen give rise to complex T cell repertoires in the thymus and the intestine. *Journal of Immunology 155:2866-2876. PubMed*
7. **Hamad M**, RL Mosley, J Wang and JR Klein. 1996. Stimulation via the CD43 coreceptor augments T cell proliferation during the early phase of antigen-induced activation. *Developmental and Comparative Immunology 20(1): 77-82. PubMed*
8. **Hamad M**, M Whetsell, J Wang and JR Klein. 1997. T cell progenitors in the murine small intestine. *Developmental and Comparative Immunology 21(5): 435-82.442. PubMed*
9. **Hamad M**. 1999. Preferential repopulation of the small intestine epithelium by gut-derived T cell precursors in the murine system. *Cytobios 97:35-44. PubMed*
10. **Hamad M.** 1999. The role of Adenosine receptor engagement in murine fetal thymocyte development. *APMIS 107:896-902. PubMed*
11. Yasin S, **M Hamad** and A Elkarmi. 1999. Jordanian population data on the PCR-based loci: LDLR, GYPA, D7S8, and GC. *Forensic Sci. Intl 104: 17-21. PubMed*
12. Awadallah S, and **M Hamad.** 2000. The Prevalence of type II diabetes mellitus is haptoglobin phenotype-independent. *Cytobios 101:145-150. PubMed*
13. **Hamad M** and S Awadallah. 2000. Age-group associated variations in the pattern of haptoglobin polymorphism in Jordanians. *Clinica Chemica Acta 300: 75-81. PubMed*
14. Awadallah S, **M Hamad** and O Qadumi. 2001. Phenotypic distribution and normal values of haptoglobin in Asir region of Southern Saudi Arabia. *Bahrain Medical Bulletin23 (1): 8-11. BMB*
15. **Hamad** M, Yasin S, and A Elkarmi. 2001. Genetic polymorphism of the PCR-based locus HLA-DQA1 in Jordanians. *Korean Journal of Genetics 23(1): 7-11. GSK*
16. **Hamad M,** SYasin and A Elkarmi. 2001. On the polymorphism of HUMvWA31, HUMTH01, HUMF13A1 and HUMFES/FPS STR genetic loci in Jordanians. *Korean Journal of Genetics 23 (2):157-161. GSK*
17. Abu-Elteen, K.HElkarmi, A.Z. and **M Hamad**. 2001. Characterization of phenotype-based pathogenic determinants of various *Candida albicans* strains in Jordan. *Japanese Journal of Infectious Diseases54:229-236. PubMed*
18. **Hamad M**, KH Abu Elteen and M Ghaleb. 2002. Persistent colonization and transient suppression of DTH responses in an estrogen-dependent vaginal candidosis murine model. *Microbiologica 25 (1): 65-73. PubMed*
19. Ghaleb M, **Hamad M**, KH Abu-Elteen and. 2003. Vaginal T lymphocyte population kinetics during experimental vaginal candidosis: evidence for a possible role of $CD8^+$ T cells in protection against vaginal candidosis. *Clinical and Experimental Immunology; 131:26-33. PubMed*
20. Awadallah S and **M Hamad**. 2003. A study of haptoglobin phenotype in patients with chronic renal failure. *Annals of Clinical Biochemistry; 40:680-683. PubMed*
21. Awadallah SM, **M. Hamad** and Jbarah I. 2003. Hp polymorphism and anti-oxidized LDL in patients with cardiovascular disease. *Clinical Chemistry and Laboratory Medicine, 223-226. Monduzzi*
22. **Hamad M**, KH Abu-Elteen and M Ghaleb. 2004. Estrogen-dependent induction of vaginal candidosis in naive mice. *Mycoses 47 (7): 304-309. PubMed*
23. Salem K,SYasin and A Elkarmi, **Hamad M** and Jaran A. 2003. Jordanian population data on five STR forensic loci: D16S539, TPOX, CSF1PO, Penta D, and Penta E. *Legal Medicine,* 5 (4):251-252. *PubMed*
24. Janaydeh M, **Hamad M** and S Awadallah. 2004. The relationship between

haptoglobin polymorphism and serum ceruloplasmin ferroxidase activity. *Clinical and Experimental Medicine,* 3(4):219-223. *PubMed*

25. Harairi R, **M. Hamad** and KH Abu-Elteen. 2004. Vaginal candidosis induces a systemic acute phase reactant protein-dependent iron-restrictive environment to limits dissemination of the infection. *Proceedings of the 12th International Congress of Immunology,* E718C3318:91-95. *Medimond*
26. Al-Obeid H, KH Abu-Elteen, AZ Elkarmi and **M Hamad**. 2004. Isolation and characterization of Candida spp. in Jordanian cancer patients: prevalence, pathogenic determinants, and antifungal sensitivity. *Jap J Infect Dis*, 57:279-284. *PubMed*
27. Yasin S, **Hamad M**, Elkarmi A and Jaran AS. 2005. African Jordanian Population-Genetic database of fifteen short tandem repeat (STR) loci. *Croatian Medical Journal 46(4): 587-592. PubMed*
28. **Hamad M** and S Yasin. 2005. Allelic representation and its effect on genetic variation: A Jordanian population-based study. *Journal of Biological Sciences; 5(6): 790-794. ANSI*
29. **Hamad M**. 2005. Plant resistance versus animal immunity: the faithful divorce. *Biology Forum; 98: -376-382. PubMed*
30. Awadallah SM, **Hamad M**, Jbarah I, Salem N and Mubarark M. 2005. Autoantibodies against oxidized LDL correlate with serum levels of ceruloplasmin in patients with cardiovascular disease. *Clinica Chemica Acta;365(1-2):330-6. PubMed*
31. Abu-Elteen KH and **M. Hamad**, SA Saleh. 2006. Prevalence of Oral Candida Infections in Jordanian Diabetic Patients. *Bahrain Medical Bulletin; 28(1):12-17. BMB*
32. **Hamad M**, Muta'eb E, Abu Shaqra Q, Fraij A, Abu-Elteen KH and Yasin SR. 2006. Utility of the estrogen-dependent vaginal candidosis murine model in evaluating the efficacy of various therapies against vaginal *C. albicans* infection. *Mycoses; 49: 104-108. PubMed*
33. **Hamad M** and A. Elkarmi. 2006. Modeling acquired immunity as an outcome of the interaction between host-related factors and the antigen repertoire. *Biology Forum; 99:429-444. PubMed*
34. Abu Sini M., Abu-Elteen K., Elkarmi A., **Hamad M**. and Kuzaie R. 2007. Influence of various ultraviolet light intensities on pathogenic determinants of *Candida albicans*. *Biotechnology*, 6(2):210-217. *ANSI*
35. Abu-Elteen K., **Hamad M.** and Kavanagh K. 2007. Epsilometer Test-Based Determination of Susceptibility of Clinically Important *Candida* Isolates to Conventional Antifungal Agents. *J. Medical Sciences*, 7(3):374-382. *ANSI*
36. Elkarmi A, **M. Hamad**. 2007. T helper cell polarization and the generation of varied antigen-dependent immune responses: A Markov chain model. *Biology Forum, 100:405-424. PubMed*
37. **Hamad M.** 2008. The case for extrathymic development of vaginal T lymphocytes. *J. Reproductive Immunology;* 77:109-116; doi:10.1016/j.jri.2007.07.001. *PubMed*
38. **Hamad M**. 2008. Antifungal immunotherapy and immunomodulation: a double-hitter approach to deal with invasive fungal infections. *Scandinavian Journal of Immunology;* 67, 533–543; doi:10.1111/j.1365-3083.2008.02101.x. *PubMed*
39. Al-Sadeq A, **M. Hamad**. H. Abu-Elteen. 2008. Patterns of expression of vaginal T cell activation markers during estrogen-maintained vaginal candidiasis. *Allergy Asthma and Clinical Immunology*; 4:156-162. *PubMed*
40. Abu-Elteen KH, R. Abdel-Jalil, **M.Hamad**, M. Ghaleb, Khalid M. Khan and W.

Voelter. 2008. Fungicidal effects of some derivatives of 2-Ferrocenyl-Benzimidazole: A possible template for antifungal drug activity. *J. Med. Sci.*; 8 (8):673-681. *ANSI*

41. Khalil RK, S. Yasin, **M. Hamad**, A. Sharieh, A. Al-Jaber. 2008. Virtual Reference Values for STR Genetic Loci Assignment in Forensics: A Jordanian-Based Study. *J. J. B. S.*; 1: 73 -77. *JJBS*
42. Qudiesat K, K. Abu-Elteen, A. Elkarmi, **M. Hamad** and M. Abussaud. 2009. Assessment of airborne pathogens in healthcare settings. *Journal of Microbiology Research*, 3 (2): 066-076. *Academic Journals*
43. **Hamad M**, E. M. El-Younis, S. R. Yasin and K. H. Abu-Elteen. 2009. TCRVβ clonotypic analysis of vaginal T lymphocytes during experimental vaginal candidiasis in the murine system. *Experimental and Clinical Science J.*; 8:203-210. http://hdl.handle.net/2003/26682. *EXCLI*
44. **Hamad M**. 2011. New Insights into Immune-Based Antifungal Agents: vs. Immunomodulation. *International Journal of Medical and Biological Frontiers*; 17 (7):1-42. *Nova Science*
45. **Hamad M.** 2011. Universal Vaccines: Shifting to one for many or shooting too high too soon. *APMIS* 119(9):565-73. DOI:10.1111/j.1600-0463.2011.02776.x. *PubMed*
46. **Hamad M.** 2011. Innate and adaptive immune responses against human fungal infections: Partners on an equal footing. *Mycoses* 55(3):205-217. DOI: 10.1111/j.1439-0507.2011.02078.x *PubMed*0
47. **Hamad M.** 2012. Universal fungal vaccines: Could there be light at the end of the tunnel. *Human Vaccines and Immunotherapeutics* (Online first: Volume 8, Issue 12, December 2012).
48. K. Abu Elteen and **M. Hamad**. 2012. The Changing Epidemiology of Classical and Emerging Human Fungal Pathogens: A review. *JJBS* 5(4): 215-230.
49. **Hamad M.** S. Awadallah, H. Naser. 2013. The relationship between haptoglobin polymorphism and oxidative stress in hemodialysis patients. *J Med Biochem 32: 220–226, 2013*. DOI: 10.2478/jomb-2013-0019
50. **Hamad M.** S. Awadallah. 2013. Estrogen-dependent changes in serum iron levels as a translator of the adverse effects of estrogen during infection: a conceptual framework. *Medical Hypothesis;* 81(6):1130-4. http://dx.doi.org/10.1016/j.mehy.2013.10.019
51. **Hamad M**, Kazandji N, Awadallah S, Allam H. 2014. Prevalence and epidemiological characteristics of vaginal candidiasis in the UAE. *Mycoses*. doi: 10.1111/myc.12141.
52. **Hamad M**. 2014. Estrogen treatment predisposes to severe and persistent vaginal candidiasis in diabetic mice. *Journal of Diabetes and Metabolic Disorders;* 13:15. (in press); DOI: 10.1186/2251-6581-13-15.
53. *Kausik Datta and **Hamad M**. 2015. Immunotherapy of human fungal infections. *Invited review*, *Journal of Immunological investigations*, 2015; 44(8): 738–776. (**equal contribution*).
54. Shafarin J, K. Bajbouj, A. El-Serafy, D. Sandeep, M Hamad. 2016. Estrogen-dependent downregulation of hepcidin synthesis induces intracellular iron efflux in cancer cells in vitro. Biol Med 2016, 8:7.
55. Hamad M, Bajbouj K. 2016. The re-emerging role of iron in infection and immunity. *Integrative Mol. Med*. (In press)
56. Bajbouj K., J. Shafarin, M. Hamad. 2016. Treatment with deferoxamine disrupts intracellular iron homeostasis and leads to toxic effects in breast cancer cells: An *in vitro* study. *International J. Cancer* (Submitted).
57. Hamad M. J Shafarin, J Sundaram, H Allam, M. Madkour, S. Awadallah A. El-Serafy,

D. Sandeep. 2016. Estrogen-dependent downregulation of hepcidin synthesis in premenopausal women enhances serum iron availability. (Submitted).

58. Bajbouj K, M Abdulla, J Shafari, M Hamad. 2016. Estrogen-induced oxidative stress and apoptosis in breast cancer cells is dependent the upregulation of ferritin and enhanced iron storage. In preparation

Books & Edited Book Chapters

1. K. Abu Elteen and **M. Hamad**. 2005. Antifungal Compounds, (Chapter 8; pages: 191-217) in: Fungi: Biology and Applications, Kevin Kavanagh, Ed; *Wiley, New York, USA & London, UK.* ISBN: 0470867019. *Wiley*
2. K. Abu Elteen and **M. Hamad**. 2006. Determination of the Virulence Factors of Candida Albicans and Related Yeast Species, (Chapter 4) in: Medical Mycology: Cellular and Molecular Techniques, Kevin Kavanagh, Ed; *Wiley, New York, USA & London, UK.* ISBN: 0-470-01923-9. *Wiley*
3. Abu Elteen, K and **M. Hamad**. 2007. Novel Antifungal Therapies (Chapter 4; pages 69-98) in: New Insights in Medical Mycology, Kevin Kavanagh, Ed. *Springer Science & Business Media.* ISBN 978-1-4020-6396-1 (HB); ISBN 978-1-4020-6397-8 (e-book). *Springer Science*
4. **Hamad. M**, K. Abu Elteen. 2010. Antifungal Immunotherapy: A reality check (Chapter 1; pp 1-76) in: Immunotherapy: Activation, Suppression and Treatments. Blake C. Facinelli, Ed. *Nova Science Publishers, Inc. New York*ISBN: 978-1-61668-585-0. *Nova Science*
5. **Hamad M**. and K. Abu Elteen. 2011. Immunity and Immunotherapy of Human Fungal Infections. Nova Science Publishers, Inc. ISBN: 978-1-61728-976-7. A stand-alone hardcover. *Nova Science*
6. K. Abu Elteen and **M. Hamad**. 2011. Antifungal Compounds for Use in Human Therapy, (Chapter 11; pp 279-310) in: Fungi: Biology and Applications 2nd Ed., Kevin Kavanagh, Ed; *Wiley, New York, USA & London, UK.* The 10 digit ISBN is 0470977094 and the 13 digit ISBN is 9780470977095. Wiley: Fungi: Biology and Applications, 2nd Edition
7. K. Abu Elteen and **M. Hamad**. 2017. Antifungal Compounds for Use in Human Therapy, (Chapter 11) in: Fungi: Biology and Applications 3rd Ed., Kevin Kavanagh, Ed; *Wiley, New York, USA & London, UK.*
8. **Hamad M.,** K. Abu Elteen and. 2017. Immunity to human fungal infections: an update, (Chapter xxx) in: Fungi: Biology and Applications 3rd Ed., Kevin Kavanagh, Ed; *Wiley, New York, USA & London, UK.*

Abstracts and Conference Presentations (*Oral presentations)

1. **Hamad M** and JR Klein. 1994. T cells in the small intestine and the thymus are independently seeded from precursors located in the spleen. *Keystone Symposia on Molecular and Cellular Biology; Keystone, CO, USA. J Cell Biochem, Supp 18D, 421**.
2. Stickney D, **M Hamad**, and JR Klein. 1994. Heat-stable antigen is an early differentiation marker of extrathymic intestinal intraepithelial lymphocytes. *Keystone Symposia on Molecular and Cellular Biology; Keystone, CO, USA. J Cell Biochem, Supp 18D, 425.*
3. **Hamad M,** D. Kaiserlian, JR Klein. 1995. Intestinal epithelium induces T cell precursor differentiation. *Eighth International Congress of Mucosal Immunology;*

*San Diego, CA, USA. J. Clinical Immunopathology, Abst. # 305, S52******.

4. **Hamad M**, D Kaiserlian, JR Klein. 1995. Positive selection of bone marrow-derived T cell precursors and immature thymocytes by murine small intestine epithelium. *9th International Congress of Immunology; San Francisco, CA, USA. Congress Proceedings, Abst. # 156, 27******.
5. **Hamad M.** 1997. The role of adenosine receptor engagement in the development of immature thymocytes in the murine system. *8th Arab conference of clinical biology, 1st Jordanian conference of medical laboratory sciences, Amman, Jordan.Conference Proceedings, Abst. # 87******.
6. **Hamad M.** 1998. T cell subsets from ATxBM mice contain significant numbers of cytokine-producing cells. *Interlab 98: Cairo, Egypt. Cancer Molecular Biology, Abst. # 099******.
7. Awadallah S, and **M Hamad.** 1999. Genetic polymorphism of haptoglobin has no bearing on the occurrence of Diabetes Mellitus. *The first conference of medical and biological sciences, Zarqa Private University, Jordan, Abs. # 60******.
8. Yasin S, **M Hamad** and A Elkarmi. 1999. Jordanian population data on the PCR-based loci: LDLR, GYPA, HBGG, D7S8, GC, and HLA-DQA1.*The first conference of medical and biological sciences, Zarqa Private University, Abst. # 61*.*
9. **Hamad M**, KH Abu Elteen and M Ghaleb. 2001. Persistent Colonization and Transient Suppression of DTH responses in an estrogen-dependent vaginal candidosis murine model. *39th IDSA Annual Meeting; Abst. # 627; San Francisco, CA, USA.*
10. Abu-Elteen KH, **M Hamad**, N Abdul Wahid and M Ghaleb. 2001. Increased incidence of vulvovaginal candidosis caused by *Candida glabrata. ECMM, Greece; Mycoses 44, (Suppl. 1), p3.*
11. Awadallah SM and **M Hamad** and Jbarah I 2003. Hp polymorphism versus oxidized LDL Autoantibodies in patients with cardiovascular disease. *15th IFCC-FESCC and 22nd NCSSCBMP in the 2003 special supplement of Clinical Chemistry and Laboratory Medicine W44, page S406; Barcelona, Spain*.
12. Harairi R, **M Hamad** and KH Abu-Elteen. 2004. Vaginal candidosis induces a systemic acute phase reactant protein-dependent iron-restrictive environment that limits dissemination of the infection. *12th International Congress of Immunology and the 4th Annual Conference of the Federation of Clinical Immunology Societies (FOCIS);* July 18-23, 2004; Montréal, Quebec, Canada. Publication Number: T47.25, Clinical Investigative Medicine Journal.
13. Al-Obeid H, KH Abu-Elteen, AZ Elkarmi and **M Hamad**. 2004. Oral candidiasis in Jordanian Cancer patients: prevalence, pathogenic determinants and antifungal sensitivity. *10th Congress of the European Federation of Clinical Mycology*, Warclaw, Poland.
14. KH Abu-Elteen, **M Hamad** and S. A. Saleh. 23-26 of October 2005. Prevalence of oral Candida infections in diabetic patients. *2nd Trends in Medical Mycology Meeting*; Berlin, Germany. Poster No. P241.
15. **Hamad M**, E Muta'eb, Q Abu-Shaqra, A. Fraij, KH Abu-Elteen and SR Yasin. 6-8, Nov. 2009. Yogurt-born *Lactobacillus* Species Limit the Severity and Persistence of Vaginal *C. albicans* Infections in Mice. 7th Arab Conference on Antibiotics. Beirut, Lebanon. *ARAPUA.ORG*.
16. **Hamad M.** Dec. 11-12, 2012. The role of vaginal T lymphocytes in protection against vaginal candidiasis. First BD Biosciences sponsored "Middle East Research FACS User" Meeting - Theme: Immunology. BD Biosciences-Middle East, Dubai,

UAE*.

17. **Hamad M.** Zaher M, and Allam H. 3-5, Nov. 2014. Hepcidin mediates estrogen-dependent changes in serum iron availability in humans**.** 5th World Congress of Diabetes & Metabolism; Track: Endocrinology: Disorders & Treatment. Las Vegas, NV, USA*.
18. **Hamad M**, Jasmine Shafarin and Jagan Sundaram. February 15th -18th 2016. Estrogen enhances intracellular iron depletion by downregulating hepcidin synthesis and enhancing ferroportin expression. 7th International Conference on Drug Discovery and Therapy; track: anti-cancer drug discovery and therapy. The University of Sharjah, Sharjah, UAE*.
19. **Hamad M**, Jasmin Shafarin and Jagan Sundaram. March 16-19, 2016. Estrogen-mediated downregulation of hepcidin synthesis and the consequent depletion of intracellular iron as an explanation for the immunosuppressive effects of estrogen. World Immune Regulation Meeting X-2016; track: W12-Autoimmunity, drug discovery and biotechnology. Davos, Switzerland*.

Other Publications

1. **Hamad M.** 2001. The origin and evolutionary history of birds. *Al-Reem; RSCN-Jordan, 68:28-32 (Article in Arabic).*
2. **Hamad M**. 2007. Islamic roots to the theory of evolution: the ignored history. *Biology Forum, 100:173-178.*

Supervision of Graduate Students

1. Mohammed M. Ghaleb, MSc student, Department of Biology, Hashemite University. Title of Thesis: Characterization and phenotypic profiling of T cell subsets residing within the vaginal mucosa of *Candida albicans*-infected mice. Co-advisor: Dr. KH Abu-Elteen, Department of Biology, Hashemite University. Graduated May 2002. Currently working as a postdoctoral fellow at St. Vincent Hospital, Sydney, Australia.
2. Mohammed Al-Janaydeh, MSc student, Department of Biology, Hashemite University. Title of Proposal: Allelic frequency distribution and normal values of haptoglobin in Jordanian Blacks. Co-advisor: Dr. S. Awadallah, Department of Medical Technology, Hashemite University. Graduated July 2003. Currently working as a lecturer at Al-Majma'ah University, Saudi Arabia.
3. Hamza Abu Sheikaha, MSc student, Department of Biology, Hashemite University. Title of Thesis: Assessment of the relationship between Hp polymorphism and serum antioxidant status in patients with chronic renal failure. Co-advisor: Dr. S. Awadallah, Department of Medical Technology, Hashemite University. *Graduated Aug. 2004.* Currently working as a medical lab manager in Amman Jordan.
4. Rula K. Y. Harierah, MSc student, Department of Biology, Hashemite University. Title of Thesis: Hematological and biochemical parameters in estrogen-treated *C. albicans*-infected mice. Co-advisor: Dr. KH Abu-Elteen, Department of Biology, Hashemite University. *Graduated Aug. 2004*. Currently working as a lecturer at a Saudi University.
5. Enas El-Younis, MSc student, Department of Biology, Hashemite University. Title of Thesis: Clonotypic analysis of vaginal T lymphocytes during experimental estrogen-induced vaginal candidosis in the murine system. Co-advisor: Dr. Salem Yasin, Department of Biology, Hashemite University. *Graduated July 2005*. Currently working as a lecturer at Al-Balqa'a University, Zarqa Branch, Jordan.

6. Ameera Al-Sadeq, MSc student, Department of Biology, Hashemite University. Title of Thesis: Phenotypic characterization of vaginal T lymphocyte activation markers during experimental vaginal candidiasis in mice. Co-advisor: Dr. KH Abu-Elteen, Department of Biology, Hashemite University. *Graduated March 2007*. Currently pursuing her PhD at the Max Plank Institute for Immunology, Freiberg, Germany.

Invited Seminars

1. Experimental Models for the study of the extrathymic pathway of intestinal intraepithelial lymphocyte development. 1995. Beth Israel Hospital, Harvard Medical School, Boston, Massachusetts, USA.
2. General aspects of IEL extrathymic development. 1995. The University of Texas Southwestern Medical Center, Dallas, Texas, USA.
3. Splenic T cell precursor: Developmental potential. 1995. Oklahoma Medical Research Foundation, Oklahoma City, Oklahoma, USA.
4. Characterization of the extrathymic pathway of intestinal intraepithelial lymphocytes in the murine system. July, 1996. Faculty of Arts and Sciences, Jordan University of Science and Technology, Irbid, Jordan.
5. Genetic Engineering, Principles and applications. April, 1998. Department of Medical Technology, Zarqa Private University, Jordan.
6. Differentiation and positive selection of T cell precursors within the gut epithelium: The extrathymic Pathway of IEL development. Sept. 1999. Department of Biology, Hashemite University, Jordan
7. The Human Genome Project: Medical Implications, (public audience seminar). Nov. 2001. Hashemite University, Jordan.
8. Hybridoma technology and monoclonal antibodies in the diagnostics industry. Jan. 2002. Higher Council for Science and Technology (HCST), Amman, Jordan.
9. Monojo: A vision in transition to reality. May, 2006. HCST, Amman, Jordan.
10. Immunological aspects of vaginal candidiasis. Jan. 2008. College of Medicine and Medical Sciences, Taif University, Saudi Arabia.
11. The role of vaginal T lymphocytes in protection against vaginal candidiasis. Dec. 2012. BD Biosciences-Middle East, Dubai, UAE.
12. The new age of iron biology, Innovation week, November 20-26—2016. Expo

Consultations & Technical Reports

- Technical advisor and principal investigator in a two-phase industrial research project conducted by Diamond Jordan between July 99 and April 2002. This research project was supported by a co-authored industry-oriented research grant from the Jordan higher council for scientific research-industry development section (total fund ~JD18000). The project involved the introduction, optimization and use of hybridoma technology to produce monoclonal antibodies for use in diagnosis and research (ABO grouping, Rh (D) grouping, etc.). Participation in this project was in accordance with a signed cooperation agreement between the company and the Hashemite University center for Studies, Consultations and Community Service.
- Chief technical consultant for a collaborative project between the Jordan Higher Council for Science and Technology and several Jordanian Universities that aimed at establishing a profit-based research facility specializing in the generation of cell lines and hybridomas and in the production and processing of a wide range of diagnostic antibodies (mainly those used in the diagnosis of various forms of cancer; herceptin,

TGF-1, CD3, etc.). This work, which lasted for 3 years (2003-2006), involved feasibility studies, writing technical and investment proposals, progress reports, committee meetings and deliberations, project design, facility design, facility furnishing with state-of-the-art equipment and machinery, procurements and tenders …etc. Measures were also taken to establish a small animal vivarium and a cell line depository modeled after ATCC, albeit, at a much smaller scale. Involvement in this project was in response to a formal request from the HCST addressed to the office of HU President.

- Technical consultant to an industrial research project "Derivation of *Saccharomyces cerevisiae* baker's yeast mutants with lysine overproduction properties" commissioned by the National Center for Biotechnology (NCB) on behalf of Hekma pharmaceutical manufacturing company. The project was conducted through the Center for Studies, Consultations and Community Service at the Hashemite University, Jordan (August 2006-Jan. 2007).

Other Scholarly Activities / Community Services:

- Editorial board member, Integrative Molecular Medicine (IMM), OA Text Journals, Emory University School of Medicine, Atlanta, GA, USA. http://www.oatext.com/IntegrativeMolecularMedicine.php.
- *Ad hoc* reviewer for several international peer-reviewed Journals including: *Journal of Immunological Investigations, Mycoses, Microbial Pathogenesis, Clinica Chemica Acta, Human vaccines and immunotherapeutics, Italian Journal of Zoology, Jordan Journal of Biological Sciences.*
- Chairing one of the sessions of 2014 Boehringer Ingelheim Research Award Program-First Round 2014, College of Pharmacy, UOS; September 17, 2014
- Chairing a track session of the *7th International Conference on Drug Discovery and Therapy,* Sharjah, UAE, (http://www.biotechworldcongress.com/confprog.php)
- Member, international advisory board, Jordan Journal of Biological Sciences.

Computer Skills

Microsoft office (word, power point, excel, access, and publisher), Open-Office, e-based communication apps, adobe works, electronic teaching platforms (*Blackboard* & *Web CT*).

Language Skills

- Arabic: native tongue
- English: fluent