

Ahmed Al-Dwairi, Ph.D.

Assistant Professor

Contact Information

Faculty of Medicine, Department of Physiology, Biochemistry and Human Genetics
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Personal Information

Date of birth: Feb. 16th, 1983.
Place of birth: Irbid, Jordan.
Nationality: Jordanian.
Marital Status: Married.

Education

Doctor of Philosophy in Physiology & Biophysics, University of Arkansas for Medical Sciences, Little Rock, AR, December, 2013. 2008-2013
Dissertation title: Cytosolic malic enzyme (Me1) mediates effects of adiposity on colorectal cancer development.
Advisor: Frank A. Simmen, PhD

Bachelor of Dental Surgery (BDS), Jordan University of Science and Technology (JUST), Jordan-Irbid. 2001-2006

Professional Experience

Assistant Professor, Faculty of medicine, department of Physiology, Jordan, Irbid 2014-present

Research assistant, Dept. of Physiology & Biophysics, University of Arkansas for Medical Sciences. Little Rock, AR 2009-2013

General dental practitioner, Private dental clinic, Jordan-Irbid. 2007-2008

General dental practitioner internship, JUST, Jordan-Irbid 2006-2007

Professional Memberships and Activities

Member of the faculty of medicine's council, Jordan University of Science and Technology, Jordan, Irbid 2014-2016

Associate Member, American Association for Cancer Research, Philadelphia, PA 2010-2013

Member, The Endocrine Society, Chevy Chase, MD 2011-2013

Member of the Jordanian Dental Association, Amman, Jordan	2006-present
Mentoring junior graduate students and summer research students, Department of Physiology & Biophysics, University of Arkansas for Medical Sciences. Little Rock, AR	2010-2013

Teaching (Courses Taught)

- 1- Med 132, Introduction to Human Physiology
- 2- Med 230A, Human Physiology
- 3- Med 372, Pathophysiology
- 4- Med 321, The Endocrine System
- 5- Med 322, Neuroscience I
- 6- Med 730, Advanced Human Physiology
- 7- Med 732, Advanced Pathophysiology
- 8- Med 352, Urinary and Reproductive System
- 9- Med 123, Physiology for dental students.

Honors and Awards

The 6 th Seoul international congress of endocrinology and metabolism travel award, Seoul, South Korea.	2018
Endocrine Society's travel award to attend Endocrine Trainee Day and Endocrine Society's 94 th Annual Meeting, Houston, TX.	2012
UAMS Graduate School Travel Award to attend the Endocrine Society's 94 th Annual meeting, Houston, TX.	2012
UAMS Graduate School Travel Award to attend the 102 nd Annual American Association for Cancer Research Meeting, Orlando, FL.	2011
Dean's honor list, College of dentistry, Jordan University of Science and Technology, Irbid, Jordan.	2004-2005

Research Interests

Molecular endocrinology
 Colon cancer biology; role of the lipogenic pathway
 Role of gastrointestinal smooth muscle cells in inflammatory bowel disease

Funded Research

- 1- Ahmed Al-Dwairi (PI). Effect of hyperinsulinemia on pro-inflammatory cytokine expression in murine intestinal smooth muscle cells. Jordan University of Science and Technology 2014
- 2- Ahmed Al-Dwairi (PI). Effect of diet-induced obesity on the expression of inflammatory markers in mouse intestinal smooth muscle cells. Jordan University of Science and Technology 2014
- 3- Effect of Glucagon-like-peptide-1 on the expression of inflammatory markers in murine colon smooth muscle cells. Jordan University of Science and Technology 2015
- 4- Ahmed Al-Dwairi (PI). Evaluation of serum levels of inflammatory markers in diabetic patients in Jordan. Jordan University of Science and Technology. 2018

Publications

- 1- Fernandes LM, **Al-Dwairi A**, Simmen RCM, Marji M, Brown DM, Jewell SW, Simmen FA. Malic Enzyme 1 (ME1) is pro-oncogenic in ApcMin/+ mice. *Sci Rep*. 2018 Sep 24; 8(1):14268. PMID: 30250042. 2018
- 2- Al-Shboul, O. A., Mustafa, A. G., Omar, A. A., **Al-Dwairi, A.**, Alqudah, M. A., Nazzal, M. S., Alfaqih, M. A., ... Al-Hader, R. A. (2018). Effect of progesterone on nitric oxide/cyclic guanosine monophosphate signaling and contraction in gastric smooth muscle cells. *Biomedical reports*, 9(6), 511-516. 2018
- 3- Saadeh, N., Alfaqih, M.A., Mansour, H., Khader, Y.S., Saadeh, R., **Al-Dwairi, A.**, & Nusier, M. (2018). Serum homocysteine is associated with polycystic ovarian syndrome in Jordan. *Biomedical Reports*, 9, 439-445. <https://doi.org/10.3892/br.2018.1149> 2018
- 4- Mustafa, A. G., Alfaqih, M. A., Al-Shboul, O., & **Al-Dwairi, A.** (2018). Scavenging of lipid peroxyl radicals protects plasma lipids and proteins from peroxynitrite. *Biomedical reports*, 9(5), 421-426. 2018
- 5- Alfaqih, M. A., Abu-Khdair, Z., Saadeh, R., Saadeh, N., **Al-Dwairi, A.**, & Al-Shboul, O. (2018). Serum Branched Chain Amino Acids Are Associated with Type 2 Diabetes Mellitus in Jordan. *Korean journal of family medicine*, 39(5), 313-317. 2018
- 6- Al-Shboul, O. A., Nazzal, M. S., Mustafa, A. G., **Al-Dwairi, A.**, Alqudah, M. A., Abu Omar, A., Alfaqih, M. A., ... Alsalem, M. I. (2018). Estrogen relaxes gastric muscle cells via a nitric oxide- and cyclic guanosine monophosphate-dependent mechanism: A sex-associated differential effect. *Experimental and therapeutic medicine*, 16(3), 1685-1692. 2018
- 7- **Ahmed Al-Dwairi**, Othman Al-Shboul, Mohammad Alqudah, Mahmoud Alfaqih & Dana Alomari. (2018). Metformin exerts anti-inflammatory effects on mouse colon smooth muscle cells *in vitro*. *Experimental and Therapeutic Medicine (In Press)* 2018
- 8- **Ahmed Al-Dwairi**, Tamara Alqudah, Othamn Al-Shboul, Mohammad Alqudah, Ayman Mustafa, & Mahmoud Alfaqih. (2018). Glucagon-like peptide-1 exerts anti-inflammatory effects on mouse colon smooth muscle cells through the cyclic adenosine monophosphate/nuclear factor- κ B pathway *in vitro*. *Journal of inflammation research*, 11, 95. 2018
- 9- Mahmoud Alfaqih, Yousef S. Khader, **Ahmed Al-Dwairi**, Abdalla Alzoubi, Othman, Al-Shboul, & Amani Hatim. (2018). Lower Levels of Serum Adiponectin and the T Allele of rs1501299 of the ADIPOQ Gene Are Protective against Polycystic Ovarian Syndrome in Jordan. *Korean journal of family medicine*, 39(2), 108-113. 2018
- 10- **Ahmed Al-Dwairi**, Othamn Al-Shboul, Mohammad Alqudah, Ayman Mustafa & Mahmoud Alfaqih. (2018). Effect of insulin on lps-induced inflammatory markers in mouse colon smooth muscle cells *in vitro*. *Asian Journal of Pharmaceutical and Clinical Research*, 11(4), 105-109. doi: <http://dx.doi.org/10.22159/ajpcr.2018.v11i4.23052> 2018
- 11- Othman Al-Shboul, , **Ahmed Al-Dwairi**, Mohammad Alqudah, and Ayman Mustafa. "Gender differences in the regulation of MLC20 phosphorylation and smooth muscle contraction in rat stomach." *Biomedical reports* 8, no. 3 (2018): 283-288. 2018
- 12- Mohammad Alqudah, Nasr Alrabadi, Mahmoud Alfaqih & **Ahmed Al-Dwairi**. *Comp Clin Pathol* (2018) 27: 385. <https://doi.org/10.1007/s00580-017-2603-3> 2018
- 13- Mohammad Alqudah, Doa Shammala, **Ahmed Al-Dwairi**, Othman Al-Shboul, & Ayman Mustafa. (2017). Dextran sodium sulphate (DSS)-induced colitis alters the expression of neurotrophins in smooth muscle cells of rat colon. *Physiological research*, 2017

66(6).

- 14- Ayman Mustafa, Othman Al-Shboul, Mahmoud Alfaqih, Mohammad Al-Qudah, & **Ahmed Al-Dwairi**. (2017). Phenelzine reduces the oxidative damage induced by peroxynitrite in plasma lipids and proteins. *Archives of physiology and biochemistry*, 1-6. 2017
- 15- Mohammad Alqudah & **Ahmed Al-Dwairi**. (2016). Mechanisms and regulation of neurotrophin synthesis and secretion. *Neurosciences*. 21. 306-313. 2016
10.17712/nsj.2016.4.20160080.
- 16- Mohammad Alqudah, Doaa Abu Shammala, **Ahmed Al-Dwairi**, & Othman Al-Shboul. (2016). Differential expression of neurotrophins in (DSS)-induced colitis in smooth muscle of rat colon. *Jurnal Teknologi*. 78. 10.11113/jt.v78.8571. 2016
- 17- **Ahmed Al-Dwairi**, Adam R. Brown, John Mark P. Pabona, Trang H. Van , Hamdan Hamdan, Charles P. Mercado, Charles M. Quick, Patricia A. Wight, Rosalia C.M. Simmen and Frank A. Simmen. (2014) Enhanced Gastrointestinal Expression of Cytosolic Malic Enzyme (ME1) Induces Intestinal and Liver Lipogenic Gene Expression and Intestinal Cell Proliferation in Mice. *PLoS ONE* 9(11): e113058. doi: 10.1371/journal.pone.0113058 2014
- 18- **Ahmed Al-Dwairi**, John Mark P Pabona, Rosalia CM Simmen, Frank A Simmen (2012) Cytosolic malic enzyme 1 (ME1) mediates high fat diet-induced adiposity, endocrine profile, and gastrointestinal tract proliferation-associated biomarkers in male mice. *PLoS One* 7: e46716. 2012
- 19- Reza Hakkak[§], **Ahmed Al-Dwairi**[§], George Fuchs, Soheila Korourian, and Frank A.Simmen. Dietary soy protein induces hepatic lipogenic enzyme gene expression while suppressing hepatosteatosis in obese female Zucker rats bearing DMBA-initiated mammary tumors. *Genes & Nutrition* (24 April 2012), 7: 549-558. doi: 10.1007/s12263-012-0294-6, § Co- first authors. 2012
- 20- Omar Rahal, John Mark P Pabona, Kelly T, Huang Y, Hennings LJ, Prior RL, **Ahmed Al-Dwairi**, Frank A Simmen , Rosalia CM Simmen (2012) Suppression of Wnt1-induced mammary tumor growth and lower serum insulin in offspring exposed to maternal blueberry diet suggest early dietary influence on developmental programming. *Carcinogenesis*, 34 (2): 464-474. doi: 10.1093/carcin/bgs353. 2012

Book Chapters

- 1- Rosalia CM Simmen, Omar Rahal, Maria TE Montales, Mark John P Pabona, Melissa E Heard, **Ahmed Al-Dwairi**, Adam A brown, Simmen FA 2012. Soy foods: towards the development of novel therapeutics for breast cancer. *Cancer Chemoprevention and Treatment by Diet Therapy*, Springer 2012

Abstracts and Presentations

- 1- **Ahmed Al-Dwairi**, Adam R Brown, Rosalia CM Simmen, and Frank A Simmen. 2011
Insulin and NADPH-generating enzymes as molecular targets to repress colon cancer cell proliferation. 102nd Annual American Association for Cancer Research Meeting, Orlando, FL. 2011 Apr 2-6

- 2- **Ahmed Al-Dwairi**, Mark John P Pabona, Rosalia CM Simmen, and Frank A Simmen. 2012
Loss of Cytosolic Malic Enzyme (ME1) in Mice Confers an Endocrine Profile Favoring
Decreased Risk of Obesity-Associated Colon Cancers. The Endocrine Society's 94th
Annual meeting, Houston, TX, 2012 June 23-26. (**Qualified for the Presidential Poster
Competition**).
- 3- **Ahmed Al-Dwairi**, Charles P Mercado, Hamdan Hamdan, John Mark P Pabona, Patricia 2012
A Wight, Rosalia CM Simmen, and Frank A Simmen. Augmented Gastrointestinal
Expression of Cytosolic Malic Enzyme (ME1) in Mice Pre-Disposes to Obesity. The
Endocrine Society's 94th Annual meeting, Houston, TX, 2012 June 23-26.
- 4- **Ahmed Al-Dwairi**, Frank Simmen, George Fuchs, Soheila Korourian, and Reza 2012
Hakkak. Dietary modulation of liver lipogenic gene expression in obese female Zucker
rats *The FASEB Journal* , March 29, 2012 26:1023.5
- 5- Omar Rahal, John Mark P Pabona, Leah Hennings, Ronald L Prior, Thomas Kelly, 2012
Ahmed Al-Dwairi, Frank A Simmen and Rosalia CM Simmen. Maternal blueberry diet
suppresses Wnt1-induced mammary tumor progression in offspring. *The FASEB
Journal. March 29, 2012;26:128.4*
- 6- **Ahmed Al-Dwairi**, Frank Simmen, George Fuchs, Soheila Korourian, and Reza Hakkak 2012
Dietary modulation of liver lipogenic gene expression in obese female Zucker rats
FASEB J April 2012 26:1023.5
- 7- **Ahmed Al-Dwairi**, Oral presentation: Cytosolic Malic Enzyme in Obesity-related Colon 2013
Cancers, Department of Physiology Research Workshop, University of Arkansas for
Medical Sciences. Feb, 2013, Little Rock, AR
- 8- **Ahmed Al-Dwairi**, Trang T. Van, Rosalia C.M. Simmen, Frank A. Simmen. Enhanced 2013
Expression of Cytosolic Malic Enzyme (ME1) in Murine Small Intestine Leads to
Inductions of Lipogenic and Lipid-Partitioning Genes and Crypt Cell Proliferation. The
Endocrine Society's 95th Annual meeting, San Francisco, CA , June 15-18, 2013.
- 9- Saha, Rinku, Thakkar, Shraddha, **Ahmed Al-Dwairi**, Gokulan, Kuppan, Simmen, Frank 2014
& Varughese, Kottayil. (2014). Malic enzyme is a target for drug design to combat
obesity and cancer. *Acta Crystallographica Section A Foundations and Advances. 70.*
C846-C846. 10.1107/S2053273314091530.
- 10 Lorenzo Fernandes, **Ahmed Al-Dwairi**, Meera Marji, Dustin Brown, Rosalia C.M 2017
Simmen and Frank A. Simmen. Tales from the Crypt: Malic Enzyme 1 (ME1) Links
Metabolism to Intestinal Cancer. *FASEB J April 2017 31:1b215*
- 11- **Ahmed Al-Dwairi**, Mohammad Alqudah, Othman Al-Shboul, Ayman Mustafa. Effect 2017
of insulin on LPS-induced inflammatory markers in mouse colon smooth muscle cells.
International Conference on Research in Education and Science (ICRES 2017) May 18-
21, 2017, Ephesus Kusadasi, Turkey.
- 12 **Ahmed Al-Dwairi**, Mohammad Alqudah, Othman Al-Shboul, Mahmoud Alfaqih. Effect 2018
of leptin on LPS-induced inflammatory markers in rat intestinal smooth muscle cells.
The 6th Seoul international congress of endocrinology and metabolism (SICEM 2018)
April 19-22, 2018, Seoul, South Korea. Oral Presentation.