

Jalal A. Aljamal, PhD.
Curriculum Vitae

Faculty of Pharmacy
Jerash University

Academic Qualification :

Professor/ Faculty of Pharmacy,

Ph.D. Degree in Pharmaceutical Biochemistry (1993), Faculty of Pharmacy,
University of Federico Secondo, Naples, Italy.

Thesis Title: *VDAC, Voltage Dependent Anion Channel in the Outer Mitochondrial
Membrane a HK Binding Receptor.*

B.Sc. Pharmacy (1987), Bari University, Italy

Professional Experience:

- Member of the Philadelphia University Council.2000- 2004, 2009-2013
- Dean Faculty of Pharmacy, Philadelphia University, 2009-2013
- Member of the Jerash University Council. 2015, 2016
- Member of Appointment and Promotion Committee, 2015, 2016
- Member of the Scientific Committee of Middle East studies center. 2004
- Member of distance learning Committee. Philadelphia University 2004-2006
- Member of the Development and Academic Training Committee Philadelphia University. 2003, 2004, 2010, 2011
- Member of the Development and Academic Training Committee Jerash University. 2015, 2016
- Member of the Scientific Research Committee. Philadelphia University 2013, 2014
- Refereed many research papers for publication in scientific research journals.

Teaching Experience:

Taught the following courses through the period between 1994-present.

- Clinical Biochemistry
- Pharmaceutical Biotechnology
- Pharmaceutical Biochemistry I & II
- Toxicology
- Pharmaceutical and Medicinal Chemistry
- Drug metabolism

Research Interests:

Ion Channel Receptors:

The broad objective of my research is to understand the molecular mechanism underlying the voltage control of membrane channels. I focused on the macromolecules, mainly proteins that are lodged within cell membranes and translocate molecules and ions across the membranes. Channel-forming proteins that are under voltage control are responsible for processes such as action potentials, muscle excitation, hormone release. The channel-former being studied is called VDAC. It is located in the mitochondrial outer membrane and may control most of the energy production in animal cells.

The research is highly interdisciplinary and includes isolating and purifying cell organelles, purifying soluble and membrane proteins, reconstituting proteins into vesicles and planar phospholipid membranes, making electrophysiological recordings on individual channel-forming molecules as well as ensembles of molecules, and studies of chemically-modified channels.

Current work deals with:

1- The effect of fetal and neonatal hypothyroidism on the developmental changes in the amount of the hexokinase binding protein as a marker of mitochondrial differentiation.

2- Role of voltage dependent anion selective channel in various forms of mitochondrial changes in mammalian cells.

3- 1, 8 Naphthyridine analogues, β -Receptor Antagonists.

Awards Received:

The University of Philadelphia award for excellence in research, **2004 – 2005**

Academic Supervision and Thesis Committees

External Examiner, Ghaydaa J. Frig (Evaluation the toxicological profile of Ecballium elaterium extract, Jordan University of science and technology, **July, 2011**).

External Examiner, Ayed H. R. Abushbak, Study the role of XBP-1 in colorectal cancer metastasis Jordan University of science and technology, **July, 2012**.

External Examiner, Omar M. Faris, Determination of some statins by high performance liquid chromatography, Al Balqa Applied University, **November, 2013**.

Publications in Reviewed Journals:

1. **Aljamal J.** Effect of Lysine and Histidine Residues Modification on the Voltage Gating of the Mitochondrial Porin. **Journal of Biochemical Technology**, accepted volume 13: 2022
2. **Aljamal J. A.** and Badawneh, M.
In Vitro Inhibition of Human Erythrocyte Hexokinase by Various Hyperglycemic Drugs. **J Biochem Molecular Toxicology**, 31: 2017.
DOI: 10.1002/jbt.21910
Effect of Lysine and Histidine Residues Modification on the Voltage Gating of the Mitochondrial Porin
3. Badawneh, M., **Aljamal J.** et al
Antidiabetic Effect of the ethanolic Extract of Traganum Nudatum on Alloxan Induced Diabetic Wistar Rats. *International Journal of Biology and Pharmacy (IJBPAS)*, 6, 918-930, 2017
4. Daradka, Mansi, Alsehli, Binnaser, Badawneh, **Aljamal, J.**
Antihyperlipidemic Activity of *Zygophyllum simplex* Ethanolic Extract on high cholesterol diet-induced hyperlipidemia in rats. *International Journal of Biology and Pharmacy (IJBPAS)*, 6, 2414-2430, 2017
5. **Aljamal J. A.** and Badawneh, M.
Antilipolytic effects of 1,8-naphthyridine derivatives β -adrenoceptor antagonists in rat white adipocytes. **Chemical Biology & Drug Design**. 90: 2017. DOI: 10.1111/cbdd.12933
6. Badawneh, M. **Aljamal J. A.**
Synthesis and antitubercular activity of piperidine and morpholine 1, 8 naphthyridine analogues. *Int J Pharm Pharm Sci*, 8, 12, 252-257, 2016.
7. Badawneh, M. **Aljamal, J. A.**
Antiplatelet Aggregation Activity of 4-phenyl-1,8-naphthyridine derivatives: Synthesis and Evaluation. **Int J Pharm Pharm Res**. 6, 2, 290-304, 2016.
8. Daradka, H. Badawneh, M. **Aljamal, J. A.**, Bataineh,
Hypolipidemic Efficacy of Artemisia absinthium Extracts in Rabbits. **World Applied Sciences Journal**. 31, 8, 1415-1421, 2014.
9. **Aljamal, J. A.**
Involvement of Porin N,N- dicyclohexylcarbodiimide-Reactive Domain in Hexokinase Binding to the Outer Mitochondrial Membrane. **The Protein Journal**, 24: 1-8; 2005.
10. **Aljamal, J. A.**
Effect of Different Thyroid States on Mitochondrial Porin Synthesis and Hexokinase Activity in Developing Rabbit Brain. **Journal of Biochemistry**, 135: 253-258; 2004.

11. **Aljamal, J. A.** and Badawneh, M.
Characterization of Biochemical Effects of New 1,8-Naphthyridine Derivatives, β -Receptor Antagonists, in Ventricular Myocytes. *Arch. Pharm. Pharm. Med. Chem.*, 336: 285-292; 2003.
12. Badawneh, M. and **Aljamal, J. A.**
Synthesis of 4-Morpholinomethyl-1,8-Naphthyridine Derivatives with Antimycobacterial Activity. *Alex. J. Pharm. Sci.*, 17: 105-109; 2003.
13. Badawneh, M., Bellini, L., Cavallini, T., **Aljamal, J. A.**, Manera, C., Saccomanni, G., Ferrarini, P.L. Synthesis of 3- or 4-Phenyl-1,8-Naphthyridine Derivatives and Evaluation of Antimycobacterial and Antibacterial Activity. *Il Farmaco*, 58: 859-866; 2003.
14. **Aljamal, J. A.**
Probing for the Histidyl Residues in the Putative Voltage Sensor of the Outer Mitochondrial Membrane Channel, VDAC. *Alex. J. Pharm. Sci.*, 16: 131-135; 2002.
15. **Aljamal, J. A.**
Characterization of Different Reactive Lysines in Bovine Heart Mitochondrial Porin. *Biol. Chem.*, 383: 1967-1970; 2002.
16. Depinto, V., **Aljamal, J. A.**, and Palmieri, F.
Identification of the Dicyclohexylcarbodiimide-Reactive Residue in the Bovine Heart Mitochondrial Porin, Italian Journal of Biochemistry, 43; 4, 168A; 1994.
17. DePinto, V., Caizzi, R., **Aljamal, J. A.**, Caggese, C., and Palmieri, F.
Transmembrane Arrangement of Mitochondrial Porin and Results Concerning a Multigene Family in Drosophila Melanogaster Related to Human Mitochondrial Porin. *Mol. Biol. Mitoch.*, 83: 266-280; 1994.
18. **Aljamal, J. A.**, Genchi, G., Depinto, V., Stefanizzi, L., DeSantis, A., Benz, R., and Palmieri, F. Purification and Characterization of Porin from (*Zea mays* L.) Mitochondria. *Plant Physiol.*, 102: 615-621; 1993.
19. Depinto, V., **Aljamal, J. A.**, and Palmieri, F.
Location of the DCCD-Reactive Glutamate Residue in Bovine Heart Mitochondrial Porin. *J. Biol Chem.*, 268: 12977-12982; 1993.
20. DePinto, V., **Aljamal, J. A.**, Benz, R. Genchi, G., and Palmieri, F.
Characterization of SH Groups in Porin of Bovine Heart Mitochondria. Porin Cysteines are Localized in the Channel Walls. *Eur. J. Biochem.*, 202: 903-911; 1991.
21. **Aljamal, J. A.**, DePinto, V., and Palmieri, F.
Transmembrane disposition of bovine mitochondrial porin. Italian Biochemical Society 1991

22. DePinto, V., **Aljamal, J. A.**, Benz, R. and Palmieri, F.
Positive Residues Involved in the Voltage-Gating of the Mitochondrial Porin-Channel are Localized in the External Moiety of the Pore. *FEBS*, 274: 122-126; 1990.
23. DePinto, V., **Aljamal, J. A.**, and Palmieri, F.
Localization of Positive Residues on the mouth of Porin- Pore. *Biophysical Journal*, vol. 57, 1990.
24. **Aljamal, J. A.**, DePinto, V., and Palmieri, F.
Characterization of Positive Residues Located on the Exterior of the Porin-Pore. *Minerva Biotecnologica*, vol. 2, N. 3, 1990.
25. **Aljamal, J. A.**
The inhibitory effect of some drugs on the activity of erythrocyte hexokinase, The 13th Pharmaceutical Conference, Amman, Jordan. 4, 2010.
26. **Aljamal J. A.**, Postnatal Mitochondrial Differentiation in Rabbit Brain; Regulation by Thyroid Hormones of the Mitochondrial Channel Protein, VDAC. The Royal Medical Services. 12, 2004.
27. **Aljamal J. A.**, The Voltage Sensor in the Mitochondrial Channel, VDAC, the 10th Pharmaceutical Conference, Jordan Pharmacists Association, Amman, Jordan. 5, 2002.
28. **Aljamal J. A.**, Probing for the Voltage Sensor in the Mitochondrial Channel, VDAC, Using Different Chemical Modifiers. The 5th Scientific Congress of the Association of the Colleges of Pharmacy in the Arab Word, and the Second International Conference of the Faculty of Pharmacy, 16-18 10 2002.
29. Alshabib A., **Aljamal J. A.** and Alkofahi A. MIC Value of Some Medicinal Plants Against Chronic Infection Strains. The First Medicinal Plants Conference, Applied Science University, 5, 23-24, 1998.
30. Alshabib A., **Aljamal J. A.** and Alkofahi A. Grouping and Pooling of Plant Extracts According to their Inhibition Pattern. The First Scientific Conference for the Arab Colleges of Pharmacy, Jordan University of Science and Technology, 13-15 10, 1997.
31. **Aljamal J. A.**, Alshabib A. and Ismaiel A. Inhibition Effect of Certain Triazoles on Pathogenic Bacteria. The First Scientific Conference for the Arab Colleges of Pharmacy, Jordan University of Science and Technology, 13-15 4, 1997.
32. **Al jamal, J. A.** VDAC, a Voltage Dependent Anion Channel in the Outer Mitochondrial Membrane, the First Scientific Conference, Faculty of Pharmacy, Philadelphia University, 4, 18-19, 1995.