

Ahmad U. M. MAHMOUD, PhD

Lecturer of Cell Biology, Assiut University

- **Contact information:**

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- **Education:**

- **2017-2022:** PhD. in Experimental Medicine (Immunology and Cardiovascular disease), McGill University, Canada. Thesis title: “The Role of $\gamma\delta$ (gamma/delta) T-cell Subsets in Angiotensin II Induced-Hypertension and Vascular Injury”.
Advisor: *Ernesto L. Schiffrin*, C.M., MD, PhD, FRSC, FRCPC, FACP. Physician-in-Chief, Sir Mortimer B. Davis-Jewish General Hospital, professor, and vice-chair, department of Medicine, McGill University.
- **2012-2014:** M.Sc. in Molecular Oncology, National Tsing Hua University (NTHU), Hsinchu, Taiwan. Dissertation title: “The Effect of Over-expression of Matrix Metalloproteinase-2 (MMP2) on Murine Brain Tumor Growth and Its Responses Against the Cytotoxicity of Ionizing Radiation and Sigma-2 Receptor Agonist PB221 Drug”.
Advisor: *Chi-Shiun Chiang*, PhD. Professor and chairman of the department of Biomedical Engineering and Environmental Sciences at NTHU, Hsinchu, Taiwan.
- **2006-2009:** B.Sc. in Zoology, Faculty of Science, Assiut University, Egypt. (GPA: 4.0, with Honor Distinction).

- **Professional experience:**

- **2023-Present:** Lecturer, Zoology department, faculty of Science, Assiut University, Egypt.
- **2014-2022:** Assistant lecturer, Zoology department, faculty of Science, Assiut University.
- **2012-2014:** Teaching assistant, department of Biomedical Engineering and Environmental Sciences, College of Nuclear Science, NTHU, Hsinchu City, Taiwan.
- **2011-2012:** Demonstrator, Zoology department, faculty of Science, Assiut University.

- **Research interests:**

T cell biology, Immunology, Cancer Biology, and cardiovascular disease.

- **Research experience:**

- **Laboratory Skills:**

- Purified, quantified, and qualified antibodies extracted from hybridoma cell lines, then conjugated these antibodies with fluorochromes.
- Performed extracellular and intracellular immunofluorescent staining for BD LSRFortessa flow cytometry and developed gating strategies for data analysis.

- Designed oligonucleotide primers for qPCR using various bioinformatic tools, including UCSC Genome Browser, Primer3, Clone Manager 9, Mfold web server, Ensembl Genome Browser, and MultAlin.
- Extracted total RNA, performed RT-qPCR, applied molecular cloning techniques, conducted Western blotting (WB), assessed MMP2 activity using gelatin zymography, and executed agarose gel electrophoresis.
- Cultured cell lines and performed various cytotoxicity assays (MTT, XTT), colony-forming assays, cell invasion and migration assays, γ -H2AX assays, and utilized confocal microscopy to visualize nucleic acid staining with Propidium Iodide (PI) for assessing cell viability and DNA integrity.
- Conducted pressurized myography to assess the physiological function and mechanical properties of small vessels, and performed subcutaneous implantation of osmotic mini pumps in mice to establish hypertensive mouse models.
- Handled mouse models for tumor intracranial (IC) injection, intraperitoneal (IP) injection, and intravenous (IV) injection; performed cryosectioning, H&E staining, immunohistochemistry (IHC), immunofluorescence, and fluorescent microscopy.

- **Software Skills:**

GraphPad Prism 8.0, SigmaPlot V.12.5, FlowJo 10.5, Image-Pro PLUS 7.0, ImageJ 1.49, Cell Profiler 2.1, ModFit LT 3.2, ZEN 2009 Light.

- **Grants & scholarships:**

- **2022-2024:** Recipient of two Research Excellence Awards, Assiut University, Egypt (each valued at 25,000 EGP).
- **2021:** 1st Place, Basic Oral Presentation Award, 2021 Maurice McGregor CV Research Day, Montreal, Canada (1,000 CAD).
- **2020:** Poster Session Award, Annual McGill Biomedical Graduate Conference, Montreal, Canada (250 CAD).
- **2020:** Experimental Medicine Department (EXMD) Travel Award, McGill University, Canada (1,250 CAD).
- **2019:** Lady Davis Institute for Medical Research Travel Award, McGill University, Canada (1,250 CAD).
- **2019:** Star Rising Award for Oral Presentation, McGill Cardiovascular Research Day Conference, Montreal, Canada (250 CAD).
- **2017-2019:** Graduate Excellence Award, Experimental Medicine, McGill University, Canada (19,200 CAD).
- **2016-2017:** National Tsing Hua University Scholarship, Taiwan (2,600 USD).
- **2012-2014:** National Tsing Hua University Scholarship, Taiwan (11,500 USD).

- **List of publications:**

[1] **Mahmoud AUM**, Caillon A, Shokoples B, Ferreira NS, Comeau K, Hatano S, Yoshikai Y, Lewis JM, Tigelaar RE, Paradis P, Schiffrin EL. $V\gamma 6/V\delta 1^+$ $\gamma\delta$ T cells protect from angiotensin II effects on blood pressure and endothelial function in mice. J Hypertens. 2024 Sep 9. doi: 10.1097/HJH.0000000000003871. Epub ahead of print. PMID: 39248136, (IF= 4.78).

[2] Berillo O, Comeau K, Caillon A, Leclerc S, Shokoples BG, **Mahmoud AUM**, Andelfinger G, Paradis P, Schiffrin EL. CD28-expressing δ T cells are increased in

perivascular adipose tissue of hypertensive mice and in subcutaneous adipose tissue of obese humans. *J Hypertens.* 2024 Jul 1;42(7):1256-1268. doi: 10.1097/HJH.0000000000003725. Epub 2024 Mar 26. PMID: 38704218, (**IF= 4.78**).

[3] Higaki A, **Mahmoud AUM**, Paradis P, Schiffrin EL. Automated Detection and Diameter Estimation for Mouse Mesenteric Artery Using Semantic Segmentation. *J Vasc Res.* 2021;58(6):379-387. doi: 10.1159/000516842. Epub 2021 Jun 28. PMID: 34182554, (**IF= 1.8**).

[4] Higaki A, **Mahmoud AUM**, Paradis P, Schiffrin EL. Role of interleukin-23/interleukin-17 axis in T-cell-mediated actions in hypertension. *Cardiovasc Res.* 2021 Apr 23;117(5):1274-1283. doi: 10.1093/cvr/cvaa257. PMID: 32870976, (**IF= 7.5**).

[5] Mahmoud MH, Badr G, Badr BM, **Kassem AU**, Mohamed MS. Elevated IFN-alpha/beta levels in a streptozotocin-induced type I diabetic mouse model promote oxidative stress and mediate depletion of spleen-homing CD8⁺ T cells by apoptosis through impaired CCL21/CCR7 axis and IL-7/CD127 signaling. *Cell Signal.* 2015 Oct;27(10):2110-9. doi: 10.1016/j.cellsig.2015.07.005. Epub 2015 Jul 18. PMID: 26192098, (**IF= 4.64**).

- **Conferences:**

[1] The **2021 Maurice McGregor Cardiovascular Research Day**, May 27th, 2021, Online, (Oral presentation).

[2] The **9th Canadian Hypertension Congress (CHC) 2021**, May 13th-14th, 2021, Virtual congress, (Poster presentation).

[3] The **21st Annual McGill Biomedical Graduate Conference (AMBGC)**, May 11st, 2021, Online, (Poster presentation).

[4] The **8th Joint Meeting of the European Society of Hypertension (ESH) and International Society of Hypertension (ISH)**, April 11st to 14th, 2021, Glasgow, UK, (Poster presentation).

[5] The **29th Annual SQHA Scientific Meeting**, Jan. 22nd, 2021, Online, (Poster presentation).

[6] The **20th Annual McGill Biomedical Graduate Conference (AMBGC)**, Oct 21st, 2020, Online, (Poster presentation).

[7] The **28th Annual SQHA Scientific Meeting**, Jan. 23rd and 24th, 2020, Bonaventure Hotel, Montreal, Canada, (Poster presentation).

[8] The **8th Canadian Hypertension Congress (CHC)** in conjunction with the **2nd Young Investigator Forum**, Sept. 25th to 28th, 2019, The Westin Edmonton, Edmonton, Canada, (Oral presentation).

- [9] The Scientific Sessions of **the Council on Hypertension of the American Heart Association**, Sept. 05th to 08th, 2019, New Orleans Marriott, New Orleans, USA, ([Oral presentation](#)).
- [10] The **Annual McGill Cardiovascular Research Day 2019**, May. 29th, 2019, the Research-Institute of the McGill Health Center, Montreal, Canada, ([Oral presentation](#)).
- [11] The **10th Annual LDI Scientific Retreat**, May. 02nd, 2019, Gelber Conference Centre, Montreal, Canada, ([Poster presentation](#)).
- [12] The **19th Annual McGill Biomedical Graduate Conference (AMBGC)**, March 19th, 2019, Research Institute MUHC (Glen site), Montreal, Quebec, Canada, ([Poster presentation](#)).
- [13] The **27th Annual SQHA Scientific Meeting**, Jan 24th & Jan 25th, 2019, Hôtel Le Concorde, Quebec City, Quebec, Canada, ([Poster presentation](#)).
- [14] The **9th Annual LDI Scientific Retreat**, May 4th, 2018, La Plaza Hotel, Montreal, Quebec, Canada, ([Poster presentation](#)).
- [15] The **Annual McGill Cardiovascular Research Day 2017**, April 27th, 2017, the Research-Institute of the McGill Health Center, Montreal, Quebec, Canada.
- [16] The **17th Annual McGill Biomedical Graduate Conference (AMBGC)**, March 23rd, 2017, Omni Hotel, Montreal, Quebec, Canada.
- [17] The **11th International Conference of the Asian Clinical Oncology Society** in conjunction with the **19th Taiwan Joint Cancer Conference**, from May 2nd to 5th, 2014, TICC, Taipei, Taiwan, ([Poster presentation](#)).
- [18] The **1st Annual Meeting of the Middle-Eastern Association for Cancer Research (MEACR): Cancer from Bench to Clinic**, from December 27th to 29th, 2011, Tanta University, Tanta, Egypt.
- [19] The 1st International Conference of “**Nanotechnology-based Economy and its Applications**”, from June 21st to 23rd, 2011, Hilton Dream hotel, Dreamland, 6th October City, Egypt.
- [20] The **19th International Conference of the Egyptian German Society of Zoology**, from April 30th to May 2nd, 2011, Faculty of Science, Beni-Suef University, Beni-Suef, Egypt.
- [21] The **3rd Scientific Conference of Young Researchers for Basic Sciences and Technology**, from April 19th to 20th, 2011, Faculty of Science, Assiut University, Assiut, Egypt.

- **References:**

1- Prof. Dr. Ernesto L. Schiffrin, C.M., MD, PhD, FRSC, FRCPC, FACP,
(email: ernesto.schiffrin@mcgill.ca).

Physician-in-Chief, Sir Mortimer B. Davis-Jewish General Hospital, Canada Research Chair in Hypertension and Vascular Research, Lady Davis Institute for Medical Research & Professor and Vice-Chair (Research), Department of Medicine, McGill University, Canada.

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2- Dr. Pierre Paradis, PhD., (email: pierre.paradis@mcgill.ca)

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2- Dr. Antoine Caillon, PhD., (email: antoine.caillon.etud@gmail.com)

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