

# Mahmoud Mohamad Zhra

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**Nationality:** Syrian with transferable Iqama

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## Academic Qualification

- **MSc, MBS, Molecular and Cellular Biology**, G.P.A 3.92 of 4.00 (June 2020- Dec. 2022), Collage of Medicine, Alfaisal University , Saudi Arabia
- **MSc, Microbiology and Immunology**, G.P.A 84.6%. (Sep. 2012- May 2015), Jordan University of Science and Technology, Jordan.
- **B.S., Medical Laboratory Sciences**, G.P.A 3.02 out of 4.00. (Sep. 2007- Dec. 2011), University of Gezira, Sudan.

## Work Experience

- **Lecturer of Biochemistry and Molecular Medicine**, Molecular Medicine Department, Collage of Medicine, Alfaisal University, (June 2023 – Present), Riyadh, Saudi Arabia.
- **Teaching and Research Assistant**, Molecular Medicine Department, Collage of Medicine, Alfaisal University, (September 2019 – June 2023), Riyadh, Saudi Arabia.
- **R&D Specialist**, Alfaisal University, (Under contract with local companies), (May 2020 – June 2023), Riyadh, Saudi Arabia.
- **Research Assistant**, Biochemistry and Molecular Biology Department, Collage of Medicine, King Saud bin Abdul-Aziz University for Health Sciences (May 2015 – January 2019). Under **research grants** of KACST, KAIMRC, Riyadh, Saudi Arabia.

## Work Fields

- **Lecturer**, teaching molecular biology lab courses and biomedical research training programs for graduate and undergraduate medical students from Alfaisal University, King Saud University, and King Saud bin Abdul-Aziz University for Health Sciences.
- **Research Assistant**, working in fields of molecular biology, biochemistry, immunology, cancer and chemotherapy, inflammation, aging, nutrition, and diabetes.
- **Biotech Production Specialist**, responsible for the manufacturing and quality control of various biomedical and pharmaceutical industrial products, including:
  - Pharmaceutical products, such as oral dissolving films (ODF) and cosmetic products,
  - Molecular biology kits and reagents, such as COVID-19 rt-PCR kits, Real-time PCR buffers, VTM, RNA and DNA purification kits, Taq polymerase, and reverse transcriptase enzymes, and various reagents and buffers.
- **Lab Manager**, providing staff training programs, following up on staff tasks, and troubleshooting.
- **Expert** in many molecular biology, biochemistry, microbiology, and histopathology techniques.

## Further Information

### Publications:

- Lin Batha, Mohammad Azhar Aziz, **Mahmoud Zhra**, Jasmine Holail, Wedad S. Al-Qahtani, Rajaa Fakhoury, Ahmad Aljada. Differential Gene Expression Signatures and Cellular Signaling Pathways induced by Lamin A/C Transcript Variants in MCF7 Cell Line. *Front. Biosci. (Landmark Ed)* **2023**, 28(6), 113 <https://doi.org/10.31083/j.fbl2806113>
- Fakhoury, H.M.A.; Elahi, M.A.; Al Sarheed, S.; Al Dubayee, M.; Alshahrani, A.; **Zhra, M.**; Almassri, A.; Aljada, A. Gene Expression Profiling of Peripheral Blood Mononuclear Cells in Type 2 Diabetes: An Exploratory Study. *Medicina* **2022**, 58, 1829 <https://doi.org/10.3390/medicina58121829>
- AbuObead, D.A.; Alhomsy, T.K.; **Zhra, M.**; Alosaimi, B.; Hamza, M.; Awadalla, M.; Abdelhadi, O.E.; Alsharif, J.A.; Okdah, L.; AlKattan, K.; et al. Development and Validation of ScriptTaq COVID PCR: An In-House Multiplex rRT-PCR for Low-Cost Detection. *Curr. Issues Mol. Biol.* **2022**, 44, 6117-6131. <https://doi.org/10.3390/cimb44120417>
- Mariam Ahmed Galal, Mai Abdel Jabar, **Mahmoud Zhra**, Anas M. Abdel Rahman, Ahmad Aljada, Absolute quantification of senescence mediators in cells using multiple reaction monitoring liquid chromatography-Tandem mass spectrometry, *Analytica Chimica Acta*, Volume 1184, 2021, 339009, ISSN 0003-2670, <https://doi.org/10.1016/j.aca.2021.339009>
- Al Dubayee M, Alshahrani A, Aljada D, **Zahra M**, Alotaibi A, Ababtain I, Alnaim M, Alahmari A, Aljarallah A, Elahi MA, Fakhoury HMA. Gene Expression Profiling of Apoptotic Proteins in Circulating Peripheral Blood Mononuclear Cells in Type II Diabetes Mellitus and Modulation by Metformin. *Diabetes Metab Syndr Obes.* 2021;14:1129-1139 <https://doi.org/10.2147/DMSO.S300048>
- Gu X, Al Dubayee M, Alshahrani A, Masood A, Benabdelkamel H, **Zahra M**, Li L, Abdel Rahman AM and Aljada A (2020) Distinctive Metabolomics Patterns Associated With Insulin Resistance and Type 2 Diabetes Mellitus. *Front. Mol. Biosci.* 7:609806. <https://doi.org/10.3389/fmolb.2020.609806>
- Alshahrani A, AlDubayee M, **Zahra M**, Alsebayel FM, Alammari N, Alsudairy F, Almajed M, Aljada A. Differential Expression of Human N-Alpha-Acetyltransferase 40 (hNAA40), Nicotinamide Phosphoribosyltransferase (NAMPT) and Sirtuin-1 (SIRT-1) Pathway in Obesity and T2DM: Modulation by Metformin and Macronutrient Intake. *Diabetes Metab Syndr Obes.* 2019;12:2765-2774 <https://doi.org/10.2147/DMSO.S228591>
- Aljada A, AlGwaiz G.F, AlAyadhi D, Masuadi E, **Zahra M**, Al-Matar S.H, Al-Bawab A, Tamimi W, Jawdat D, Al-Dawood A, et al. Effect of Permissive Underfeeding with Intensive Insulin Therapy on MCP-1, sICAM-1, and TF in Critically Ill Patients. *Nutrients* 2019, 11, 987. <https://doi.org/10.3390/nu11050987>
- Al Dubayee MS, Alayed H, Almansour R, Alqaoud N, Alnamlah R, Obeid D, Alshahrani A, **Zahra MM**, Nasr A, Al-Bawab A and Aljada A (2018) Differential Expression of Human Peripheral Mononuclear Cells Phenotype Markers in Type 2 Diabetic Patients and Type 2 Diabetic Patients on Metformin. *Front. Endocrinol.* 9:537 <https://doi.org/10.3389/fendo.2018.00537>

- Alshahrani A, Bin Khunayfir A, Al Rayih M, Al Sayed H, Alsadoon A, Al Dubayee M, **Zahra M**, Alrumayyan Y, Al Zayer M, Nasr A and Aljada A (2017) Phenotypic Characterization of Human Monocytes following Macronutrient Intake in Healthy Humans. *Front. Immunol.* 8:1293. <https://doi.org/10.3389/fimmu.2017.01293>

### **Submitted Papers:**

- **Mahmoud Zhra**, Aljohara Al Saud, Maha Alzayer, Liliane Okdah, Hani Tamim, Hana M. A. Fakhoury, Ahmad Aljada. Cost-effective in-house COVID-19 reverse transcription-polymerase chain reaction testing with yeast-derived Taq polymerase. *Annals of Thoracic Medicine.* **2024.**
- **Mahmoud Zhra**, Rani J. Qasem, Ahmad M. Magableh, Lara M. Samhan, Lein M. Fatani, Ahmad Aljada. Expression Profiles of Aging and Anti-Aging Markers During Mesenchymal Stem Cell Differentiation. *Journal of Tissue Engineering and Regenerative Medicine.* **2024.**

### **Posters:**

- Lin Batha, Mariam Galal, Fai Aldossari, Jasmine Holail, **Mahmoud Zahra**, Maha Alzayer, Mohammad Azhar, Aziz, and Ahmad Aljada. **Anti-Cancer Drug Resistance Classification Based on Signal Transduction Pathways in MCF7 Sublines.** **1<sup>st</sup> Prize** winner poster at Alfaisal University, 14th Annual Research Day. March, 2023.
- Aljohara Al Saud, **Mahmoud Zhra**, Maha Alzayer, Liliane Okdah, Hani Tamim, Hanaa Fakhoury Hajeer, Ahmad Aljada. **Recombinant DNA Polymerase from Eukaryotes: A Novel Method for In-House COVID-19 RT-PCR Testing.** **3<sup>rd</sup> Prize** winner poster at Alfaisal University, 14th Annual Research Day. March, 2023.
- Ahmad Magableh, Lein Fatani, Lara Samhan, Hamzah M. Magableh, **Mahmoud Zhra**, Ahmad Aljada. **Expression Profile of Senescence Markers in Differentiating Mesenchymal Stem Cells.** Alfaisal University, 14th Annual Research Day. March, 2023.
- Lin Batha, Mohammad Azhar Aziz, **Mahmoud Zahra**, Rajaa Fakhoury, Jasmine Holail, and Ahmad Aljada. **Differential Gene Expression Signatures And Cellular Signaling Pathways of Lamin A/C Transcript Variants in MCF7 Cell Line By RNA Sequencing.** **1<sup>st</sup> Prize** winner poster at Alfaisal University, 13th Annual Research Day. March, 2022.
- **Mahmoud Zhra**, Hanaa Hajeer, Rajaa Fakhoury and Ahmad Aljada. **Establishment of Direct Multiplex rRT- PCR for SARS-CoV2 Detection without RNA Extraction.** **2<sup>nd</sup> Prize** winner poster at Alfaisal University, 13th Annual Research Day. March, 2022.
- Majeda Alrifai, Farah Alrass, **Mahmoud Zahra**, Hanaa Hajeer, Ahmad Aljada. **Development of In-house Real-Time Q-PCR Assay for Multiplexed Detection of Hepatitis B and C Viruses in Plasma.** **3<sup>rd</sup> Prize** winner poster at Alfaisal University, 13th Annual Research Day. March, 2022.
- Dana AbuObead, Tasnim Alhomsji, **Mahmoud Zahra**, Osama Abdelhadi, Joud Alsharif, Hanaa Hajeer, Ahmad Aljada. **Establishment of In-house RNA Isolation and COVID-19 Multiplex Real Time Reverse Transcriptase Polymerase Chain Reaction (rRT-PCR) Diagnostic Kits.** **1<sup>st</sup> Prize** winner poster at Alfaisal University, 12th Annual Research Day. March, 2021.

- Muhammad Affan Elahi, Hana M.A. Fakhoury, **Mahmoud Zahra**, Ahmad Aljada. **Gene Expression Profiling of Apoptotic Proteins in Circulating Peripheral Blood Mononuclear Cells in Type II Diabetes Mellitus and Modulation by Metformin**. 2<sup>nd</sup> Prize winner poster at Alfaisal University, 12th Annual Research Day. March, 2021.
- Muhammad Affan Elahi , Hana M.A. Fakhoury, Saud Al Sarheed, Mohammed Al Dubayee, Awad Alshahrani, **Mahmoud Zahra**, Ahmad Aljada. **Profiling of Peripheral Blood Mononuclear Cells in Type 2 Diabetes: Modulation by Metformin**. Alfaisal University, 11<sup>th</sup> Annual Research Day. March, 2020.
- Mohammed Alrayih, Abdalmalik Bin Khunayfir, Hasan Alsayed, Abdullah Alsadoon, **Mahmoud Zahra**, Maha AlZayer, Salman A. AlOtieschan, Mohammed Al Dubayee, Ahmad Aljada, Awad Alshahrani. **Effect of Macronutrient Intake on Sirtuin 1 and 7 Expression in Mononuclear Cells of Normal Subjects**. Endocrine Society EXPO 2017. Florida, April 2017.
- Abdalmalik Bin Khunayfir, Mohammed Alrayih, Hasan Alsayed, Abdullah Alsadoon, **Mahmoud Zahra**, Yousof Alrumayyan, Maha AlZayer, Mohammed Al Dubayee, Amre Nasr, Ahmad Aljada, Awad Alshahrani. **Monocyte Differentiation and Macrophage Polarization in Circulation in Response to Macronutrient Intake in Healthy Humans**. Endocrine Society EXPO 2017. Florida, April 2017.

### **Seminars and Workshops:**

- **International Conference on Genomic Medicine 2023**, King Faisal Specialist Hospital & Research Centre, Riyadh, Saudi Arabia. November, 2023.
- **Pre-congress workshop on NGS-based diagnostics in rare disease and oncology**, King Faisal Specialist Hospital & Research Centre, Riyadh, Saudi Arabia. November, 2023.
- **International Conference on Genomic Medicine 2022**, King Faisal Specialist Hospital & Research Centre, Riyadh, Saudi Arabia. November, 2022.
- **Driving precision gender health: the rise of molecular diagnostics**, SANSURE, Marriot Hotel. Riyadh, Saudi Arabia. November, 2022.
- **8<sup>th</sup> Annual Forum For Medical Research**, KAIMRC, National Guard, Riyadh, Saudi Arabia. December, 2017.
- **MERS-CoV Research Network Day**, KAIMRC, National Guard, Riyadh, Saudi Arabia. November, 2016.
- **6<sup>th</sup> Annual Forum For Medical Research**, KAIMRC, National Guard, Riyadh, Saudi Arabia. December, 2015.
- Cleveland Clinic Conference, **Oxidative stress, DNA damage and apoptosis in male infertility**, Ashok Agarwal, Jordan University of Science and Technology, Jordan. April, 2013.

### **Certificates:**

- Certificate of Completion of **Research Bioethics Course**, NCBE platform, King Abdulaziz City for Science and Technology (KACST), Riyadh, Saudi Arabia, 2023
- Certificate of attendance and participate in **Introductory Course on Laboratory Safety**. Alfaisal University, Riyadh, Saudi Arabia. 2018.
- Certificate of attendance and participate in **Laboratory Safety Training Program**. KSAU-HS, National Guard. Riyadh, Saudi Arabia. 2016.
- Certificate of attendance and participate in **Neuro Linguistic Programming (NLP)** course (16hrs.). University of Gezira, Sudan. July 2011.
- **Basic Life Support (BLS)**, American Heart Association. Feb, 2018 –Feb, 2020.

### **Computer Skills:**

- Graphpad Prism
- Sigma Stat
- Sigma Plot
- Jamovi
- Microsoft Softwares
- Adobe Photoshop
- Adobe Illustrator