

Noha Mousaad Taha Hassan Elemam

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Nationality: Egyptian



Education

Ph.D. Candidate, Dr. rer. hum. biol., Lübeck Institute of Experimental Dermatology (LIED), University of Lübeck, Germany, with a grade: *Magna Cum Laude*, October 2018- July 2020

Thesis title: **“Role of Natural Killer Cells in Cancer and Autoimmune Diseases: Colorectal Cancer and Rheumatoid Arthritis as a Model”**

Ph.D. Candidate (with Full Scholarship) in Molecular Medicine and Translational Research, College of Medicine, University of Sharjah, United Arab Emirates, September 2016- July 2020

Thesis title: **“Role of Natural Killer Cells in Cancer and Autoimmune Diseases: Colorectal Cancer and Rheumatoid Arthritis as Models”**

Clinical Pharmacotherapy Diploma Oxford Academy for Medical Science, United Kingdom, July 2017

M.Sc. Molecular Pharmacology with A+ Grade, The German University in Cairo, Egypt, May 2014

Thesis title: **“PU.1 Transcription Factor, microRNAs (miR-29a* and miR-155) Modulate the Expression of The Activating Receptor NKG2D in HCV”**

B.Sc. Pharmacy & Biotechnology, The German University in Cairo (in collaboration with University of Ulm and Stuttgart University in Germany), Egypt, July 2012

Major: Pharmacy

Minor: Biotechnology

GPA: 0.88 (German Grading System) Equivalent to Grade A+ (American Grading System)

High School Certificate High school diploma, The International School of Choueifat (CITA accredited school), Dubai, U.A.E, June 2007

High School Certificate. IGCSE certificate, University of Cambridge International Examinations & Edexcel, 2005-2007

Teaching Experience

- Assistant Lecturer at the German University in Cairo, Sep. 2014 – Jul. 2015
Egypt
- Subjects taught: Pharmacognosy
Analytical Chemistry
- Teaching Assistant at the German University in Cairo, Sept. 2013 – Feb. 2014
Egypt
- Subjects taught: Chemistry
- Teaching Assistant at the German University in Cairo, Feb. 2013 – Jun. 2013
Egypt
- Subjects taught: Microbiology & Immunology

Skills

Language Skills:

- Fluent in spoken & written English & Arabic
- Good understanding of German

Computer Skills:

- Proficient user of Microsoft Office programs.
- Ability to perform statistical analysis using GraphPad Prism Software and FlowJo, referencing using Endnote and to analyze and take real pictures using Zen Imaging Software.
- Good Internet research skills

Other Skills:

- Excellent presentation skills
- Excellent organization and problem-solving skills

- Excellent time management skills
- Excellent team leading skills
- Excellent communication skills
- Hard worker, ambitious, persistent, and enthusiastic.

Work Experience

- **Post-Doctoral Research Associate at University of Sharjah-Research Institute of Medical & Health Sciences, Sharjah, United Arab Emirates** **Sept. 2020-Present**
- **Ph.D. Fellow & Research Assistant at University of Sharjah-Research Institute of Medical & Health Sciences, Sharjah, United Arab Emirates** **Sept. 2016-Aug. 2020**
Ph.D. project is under supervision of Prof. Dr. Azzam Maghazachi and co-supervisor Assoc Prof. Dr. Suad Hannawi.
 - Learnt and experienced in isolation of natural killer cells from whole blood using StemCell Isolation kit-Ficoll.
 - Able to perform protein quantification using flow cytometry, western blot, ELISA and Bioplex-200.
 - Perform chemotaxis assay for natural killer cell migration using Boyden chamber method.
 - Mastered primer design for real time PCR using Primer3 design software.
 - Able to induce experimental autoimmune encephalitis (EAE) in SJL mice and perform dissection for organ collection.
 - Learnt how to perform cytotoxicity assay using calcein-AM method.
 - Learnt how to perform intracellular calcium mobilization upon binding of chemokine ligand to receptor.
 - Perform multiple *in vitro* assays such as assessment of apoptosis, cell proliferation and cell viability.

- Participated in teaching undergraduate medical students and contributed in their projects.

- **Ph.D. Fellow at University of Lübeck, Lübeck Institute for Experimental Dermatology (LIED), Germany** **Oct. – Nov. 2018**
Worked in the research group of Prof. Dr. Jennifer Hundt and attended the Research Training Group (RTG) *Modulation of Autoimmunity*

- Learnt and experienced in isolation of neutrophils from mouse bone marrow and human whole blood using murine neutrophil and human MACSxpress whole blood isolation kits.
- Learnt how to perform Reactive Oxygen Species (ROS) release assay using luminol.
- Able to perform protein quantification using immunofluorescence and immunohistochemistry in tissue sections.

- **Member in the Molecular Pathology Research Group (MPRG) at the German University in Cairo (GUC), Egypt** **Sept. 2012- Oct. 2015**

Under the supervision of Assoc. Prof. Dr. Ahmed Ihab Abdelaziz, winner of George Foster-Alexander Von Humboldt fellowship for experienced researchers in 2017 and winner of the State Incentive (Encouragement) Award in Advanced Technological Medical Sciences by The Academy of Scientific Research and Technology (ASRT).

- Learnt how to work with StepOne Real time PCR and quantification of miRNAs and genes.
- Learnt protein quantification using western blotting and immunofluorescence microscopy.
- Variant Cell culture techniques including adherent and suspension cells.
- Learnt and optimized how to isolate peripheral blood mononuclear cells (PBMCs) from human blood using Ficoll density gradient centrifugation.

- Learnt and optimized how to isolate natural killer cells from PBMCs using untouched magnetic isolation, using magnetic microbeads.
 - Production of hepatitis C virus cell replicons *in vitro*.
 - Extraction of viral RNA and quantification of HCV viral load.
 - Performed several transfections using miRNA oligos and siRNAs.
 - Performed miRNA-gene binding confirmation using luciferase reporter assays.
 - Participated in grant writing for future projects.
 - Responsible for financial budgeting for lab consumables.
 - Learnt how to trouble shoot any existent lab protocol and optimize many procedures.
- **Dealt with frog and mouse models in Pharmacology Practical Course during the 8th semester as an undergraduate at the GUC, where drugs are injected in animals to understand their symptoms** **February 2011**
 - **Trainee, Dubai Hospital pharmacy, Dubai, United Arab Emirates** **July 2010**
 - Dealt with inpatient and outpatient prescriptions
 - Dealt with narcotic prescriptions & their limited doses
 - Learned how to formulate “Total Parental Nutrition” (TPN) for new-born babies

Reviewer in peer-reviewed journals

1. Therapeutic Advances in Chronic Disease
2. Frontiers in Medicine
3. Oncotargets and therapy
4. Expert Review of Precision Medicine and Drug Development
5. Journal of Hepatocellular Carcinoma
6. Immunotargets and therapy
7. Hepatic Medicine: Evidence and Research
8. Journal of Blood Medicine

9. Journal of Inflammation Research
10. Open Access Rheumatology: Research and Reviews
11. The Application of Clinical Genetics

Publications (Scopus H Index = 6)

1. Hachim M.Y., **Elemam N.M.**, Ramakrishnan R.K., Salameh L., Olivenstein R., Hachim I.Y., Venkatachalam T., Mahboub B., Al Heialy S., Halwani R., Hamid Q., Hamoudi R. Blood and Salivary Amphiregulin Levels as Biomarkers for Asthma. *Front Med (Lausanne)*, 2020, 7: 561866 (Impact Factor=3.9).
2. Aljaibeji H.*, **Elemam N.M.***, Mohammed A.K., Hasswan H., Al Thahyabat M., Alkhayyal N., Sulaiman N., Taneera J. Let7b-5p is Upregulated in the Serum of Emirati Patients with Type 2 Diabetes and Regulates Insulin Secretion in INS-1 Cells. *Exp Clin Endocrinol Diabetes* 2020, 128: 1–8 (***First Author Equal Contribution**, Impact Factor=2.058).
3. Al-Ani M*, **Elemam NM***, Hundt JE, Maghazachi AA. Drugs for Multiple Sclerosis Activate Natural Killer Cells: Do They Protect Against COVID-19 Infection?. *Infect Drug Resist.* 2020,13:3243-3254 (***First Author Equal Contribution**, Impact Factor=2.984).
4. Dhaiban S, Al-Ani M, **Elemam NM**, Maghazachi AA. Targeting Chemokines and Chemokine Receptors in Multiple Sclerosis and Experimental Autoimmune Encephalomyelitis. *J Inflamm Res.* 2020,13:619-633 (Impact Factor=4.953).
5. Shihab I, Khalil BA, **Elemam NM**, Hachim IY, Hachim MY, Hamoudi RA, Maghazachi AA. Understanding the Role of Innate Immune Cells and Identifying Genes in Breast Cancer Microenvironment. *Cancers (Basel)*. 2020, 12(8): E2226 (Impact Factor=6.126).
6. **Elemam NM**, Hachim MY, Hannawi S, Maghazachi AA. Differentially expressed genes of natural killer cells can distinguish rheumatoid arthritis patients from healthy controls. *Genes* 2020, 11:492 (**First & Corresponding Author**, Impact Factor=3.331).

7. Hachim, M.Y., Aljaibeji, H., Hamoudi R, Hachim IY, **Elemam, N.M.**, Mohammed, A.K., Salehi, A., Taneera, J., Sulaiman, N. An Integrative Phenotype–Genotype Approach Using Phenotypic Characteristics from the UAE National Diabetes Study Identifies HSD17B12 as a Candidate Gene for Obesity and Type 2 Diabetes. *Genes* 2020, 11:461 (Impact Factor=3.331).
8. **Elemam NM**, Hannawi S, Maghazachi AA. Role of chemokines and chemokine receptors in rheumatoid arthritis. *Immunotargets and Therapy* 2020; 9: 43-56. (Impact Factor=10.5)
9. El-ani MR, Raju TK, Hachim MY, Hachim IY, **Elemam NM**, Guimei M, Bendardaf R, Maghazachi AA. Rituximab prevents the development of experimental autoimmune encephalomyelitis (EAE): comparison with prophylactic, therapeutic or combinatorial regimens. *Journal of Inflammation Research* 2020; 2020(13): 151-164.
10. Hachim MY, Khalil BA, **Elemam NM**, Maghazachi AA. Pyroptosis: the missing puzzle among innate and adaptive immunity crosstalk. *Journal of Leukocyte Biology* 2020: 1-16. (Impact Factor=4.012)
11. Hachim MY, **Elemam NM**, Ramakrishnan RK, Hachim IY, Salameh L, Mahboub B, Al Heialy S, Halwani R, Hamoudi R, Hamid Q. Confounding patient factors affecting the proper interpretation of the periostin level as a biomarker in asthma development. *Journal of Asthma and Allergy* 2020; 13: 23-37.
12. Taneera J, Mohammed I, Mohammed AK, Hachim M, Dhaiban S, Malek A, Duner P, **Elemam NM**, Sulaiman N, Hamad M, Salehi A. Orphan G-protein coupled receptor 183 (GPR183) potentiates insulin secretion and prevents glucotoxicity-induced β -cell dysfunction. *Molecular and Cellular Endocrinology* 2020; 499: 110592-110592. (Impact Factor=3.693)
13. Aljaibeji H, Mukhopadhyay D, Mohammed AK, Dhaiban S, Hachim MY, **Elemam NM**, Sulaiman N, Salehi A, Taneera J. Reduced expression of PLCXD3 associates with disruption of glucose sensing and insulin signaling in pancreatic β -cells. *Frontiers in Endocrinology* 2019; 10: 735-735. (Impact Factor=3.3634)

14. Hachim MY, Hachim IY, **Elemam NM**, Hamoudi RA. Toxicogenomic analysis of publicly available transcriptomic data can predict food, drugs, and chemical-induced asthma. *Pharmacogenomics and Personalized Medicine* 2019; 12: 181-199. (Impact Factor=2.721)
15. Muhammad JS, Jayakumar MN, **Elemam NM**, Venkatachalam T, Raju TK, Hamoudi RA, Maghazahi AA. Gasdermin D hypermethylation inhibits pyroptosis and LPS-induced IL-1 β release from NK92 cells. *ImmunoTargets and Therapy* 2019; 8: 29-41. (Impact Factor=10.5)
16. Mekky RY, El-Ekiaby N, El Sobky SA, **Elemam NM**, Youness RA, El-Sayed M, Hamza MT, Esmat G, Abdelaziz AI. Epigallocatechin gallate (EGCG) and miR-548m reduce HCV entry through repression of CD81 receptor in HCV cell models. *Archives of Virology* 2019; 164: 1587-1595. (Impact Factor=2.261)
17. **Elemam NM**, Al-Jaderi Z, Hachim MY, Maghazachi AA. HCT-116 colorectal cancer cells secrete chemokines which induce chemoattraction and intracellular calcium mobilization in NK92 cells. *Cancer Immunology, Immunotherapy: CII* 2019; 68: 883-895. (Impact Factor=4.9)
18. Hachim MY, **Elemam NM**, Maghazachi AA. The beneficial and debilitating effects of environmental and microbial toxins, drugs, organic solvents and heavy metals on the onset and progression of multiple sclerosis. *Toxins* 2019; 11: 147. (Impact Factor=3.895)
19. **Elemam NM**, Hannawi S, Maghazachi AA. Innate lymphoid cells (ILCs) as mediators of inflammation, release of cytokines and lytic molecules. *Toxins* 2017; 9. (Impact Factor=3.895)
20. Sourour SK, Aboelenein HR, **Elemam NM**, Abdelhamid AK, Salah S, Abdelaziz AI. Unraveling the expression of microRNA-27a* & NKG2D in peripheral blood mononuclear cells and natural killer cells of pediatric systemic lupus erythematosus patients. *International Journal of Rheumatic Diseases* 2017; 20: 1237-1246. (Impact Factor=1.938)

21. El Sobky SA, El-Ekiaby N, Mekky RY, **Elemam NM**, Mohey Eldin MA, El-Sayed M, Esmat G, Abdelaziz AI. Contradicting roles of miR-182 in both nk cells and their host target hepatocytes in HCV. *Immunology Letters* 2016; 169: 52-60. (Impact Factor=2.552)
22. **Elemam NM**, Mekky RY, El-Ekiaby NM, El Sobky SA, Mohey Eldin MA, Esmat G, Abdelaziz AI. Repressing PU.1 by miR-29a* in NK cells of HCV patients, diminishes its cytolytic effect on HCV infected cell models. *Human Immunology* 2015; 76(9): 687-694. (Impact Factor=2.202)
23. El-Ekiaby NM, Mekky RY, El Sobky SA, **Elemam NM**, El-Sayed M, Esmat G, Abdelaziz AI. Epigenetic harnessing of HCV via modulating the lipid droplet-protein, TIP47, in HCV cell models. *FEBS Letters* 2015; 589(17): 2266-2273. (Impact Factor=2.675)
24. Mekky RY, El-Ekiaby NM, Hamza MT, **Elemam NM**, El-Sayed M, Esmat G, Abdelaziz AI. Mir-194 is a hepatocyte gate keeper hindering HCV entry through targeting CD81 receptor. *Journal of Infection* 2015; 70(1): 78-87. (Impact Factor=5.099)

Oral Conferences

1. **Elemam NM**, Hachim MY, Hannawi S, Maghazachi AA. Natural killer cells gene expression can differentiate rheumatoid arthritis patients from healthy controls [abstract]. ACR/ARP Meeting, Atlanta, Georgia, United States of America, *Arthritis Rheumatology*, 2019; 71 (suppl 10). <https://acrabstracts.org/abstract/natural-killer-cells-gene-expression-can-differentiate-rheumatoid-arthritis-patients-from-healthy-controls>.
2. **Elemam NM**, Al-Jaideri Z, Maghazachi AA. HCT-116 colorectal cancer cells release chemokines that induce the chemotaxis and intracellular calcium mobilization in NK92 cell lines. UAE Graduate Student Research Conference, American University of Sharjah, Sharjah, United Arab Emirates, 2018.

Poster Conferences

1. **Elemam NM**, Hachim MY, Hannawi S, Maghazachi AA. Differentially Expressed Chemokines and Cytokines in Peripheral Blood Mononuclear Cells (PBMCs) of Rheumatoid Arthritis (RA) Patients [abstract]. ACR/ARP Meeting, Washington D.C., United States of America, Arthritis Rheumatology, 2020; 72 (suppl 10). <https://acrabstracts.org/abstract/differentially-expressed-chemokines-and-cytokines-in-peripheral-blood-mononuclear-cells-pbmcs-of-rheumatoid-arthritis-ra-patients/>
2. Hachim MY, **Elemam NM**, Hachim IY, Hannawi S, Hamoudi R, Maghazachi AA. Triple DMARD Treatment in early rheumatoid arthritis increase synovial activated natural killers and resting mast cells but decrease plasma cells and M1 macrophages. EULAR Congress 2020, Annals of the Rheumatic Diseases 2020;79:1308-1309.
3. **Elemam NM**, Hachim MY, Hannawi S, Maghazachi AA. Natural killer cells gene expression can differentiate rheumatoid arthritis patients from healthy controls [abstract]. 8th Pan Arab Human Genetics Conference; January 2020, Dubai, United Arab Emirates.
4. **Elemam NM**, Hachim MY, Hannawi S, Maghazachi AA. Natural killer cells gene expression can differentiate rheumatoid arthritis patients from healthy controls [abstract]. Clinical Research Forum 2019; Dubai, United Arab Emirates.
5. Hachim MY, **Elemam NM**, Hachim IY, Hannawi S, Hamoudi R, Maghazachi AA. Estimating the infiltration of immune cells in synovium of rheumatoid arthritis compared to osteoarthritis and healthy control using transcriptomic profiling [abstract]. ACR/ARP Meeting, Atlanta, Georgia, United States of America, Arthritis Rheumatology 2019; 71 (suppl 10). <https://acrabstracts.org/abstract/estimating-the-infiltration-of-immune-cells-in-synovium-of-rheumatoid-arthritis-compared-to-osteoarthritis-and-healthy-control-using-transcriptomic-profiling>.
6. **Elemam NM**, Hachim MY, Hannawi S, Maghazachi A. Natural killer cells gene expression can differentiate rheumatoid arthritis patients from healthy controls [abstract]. The 7th Emirati-German Congress in Medicine and Dentistry; November 2019, Sharjah, United Arab Emirates.

7. Maghazachi A, **Elemam NM**, Al-Jaderi Z. HCT116 colorectal cancer cells secrete chemokines which induce the chemotaxis and intracellular calcium mobilization of NK92 cells. Influence of dimethyl fumarate and monomethyl fumarate [abstract]. Experimental Biology, San Diego, United States of America, The FASEB Journal 2018; 32: 667.2-667.2.
8. Hamad MH, **Elemam NM**, Elsobky SA, Fawzy IO, Abdelaziz AI. miR-29a*, a potential microregulator of lipid droplet formation in the liver [abstract]. NAFLD Summit "Target-oriented Approach to Diagnosis and Pharmacotherapy of NASH: A Dialogue Between Academia and Industry", by European Association for the Study of Liver (EASL), Rome, Italy, 2017.
9. Mahdy MM, El-Ekiaby N, **Elemam NM**, ElSobky SA, Hanafi R, Abdelaziz AI. Controlling hepatocyte lipid droplet proteins through regulation of SREBP-1c and caveolin-2 by miR-29a in HCV infected cell models [abstract]. Monothematic Conference: 'Microbiota, Metabolism and NAFLD', by European Association for the Study of Liver (EASL), Innsbruck, Austria, 2015.
10. Fouad MM, **Elemam NM**, Sherif HB, El Sobky SA, Yacoub RA, Abelhamid AK, Elbaz T, Mohey El Din MA, Fawzy IO, El Tayebi HM, El-Ekiaby NM, Mekky RY, Esmat G, Abdelaziz AI. A coach, a playmaker, a defender and strikers: an epigenetic target interplay in HCV/HCC [abstract]. The International Liver Congress (ILC) by European Association for the Study of Liver (EASL), London, United Kingdom, 2014

Books

1. **Elemam NM** and Abdelaziz AI. Book title: "A coach, a playmaker, and a striker: Interplay between miR-2a*, PU.1 and NKG2D in natural killer cells in hepatitis C virus". Publisher: LAP LAMBERT Academic Publishing, Germany, 2016.
2. Sourour SK, **Elemam NM** and Abdelaziz AI. Book title: "microRNA-27a* & natural killer cells in systemic lupus erythematosus". Publisher: LAP LAMBERT Academic Publishing, Germany, 2017.