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Education:

2008: University of Tennessee Health Science Center (UTHSC), Memphis, TN.

PhD in Biochemistry, Department of Molecular Sciences

Dissertation title: "Biochemical and Immunological Mechanisms Underlying Differential Interaction of Streptococcal Superantigens with Host Immunogenetic Factors"

Advisor: Malak Y. Kotb PhD

1997: Faculty of Pharmacy, Cairo University (FOPCU), Cairo, Egypt

BSc in Pharmaceutical Sciences

Career Progress:

Dec 2014 - present : Associate professor, Biochemistry Dept., FOPCU, Cairo, Egypt

Aug 2009 - Aug 2011: Postdoctoral trainee, Pharmacology Dept., UTHSC Memphis TN, USA

Jul 2009 - Dec 2014 : Lecturer, Biochemistry Dept., FOPCU, Cairo, Egypt

May 2008-May 2009: Postdoctoral trainee, Molecular Sciences Dept., UTHSC Memphis TN, USA

Aug 2002- May 2008: Graduate Teaching Assistant, Molecular Sciences Dept., UTHSC, Memphis, TN, USA

Nov 1997 - Aug 2002: Graduate Teaching Assistant, Biochemistry Dept., FOPCU, Cairo, Egypt

Visiting Scholarships:

Mar 2017- May 2017: **Visiting scholar** at Pharmacology Dept., UTHSC Memphis TN, USA: Continuing work on preparing single cell suspension of cardiomyocytes from adult male rats heart to study trafficking of β 1-AR.

Nov 2015 - Jan 2016: **Visiting scholar** at Pharmacology Dept., UTHSC Memphis TN, USA: Studying the role of retromer/WASH complexes in sorting β 1-AR from endosomes to the plasma membrane. (Publication 8)

May 2013- Aug 2013: **Visiting scholar** at Pharmacology Dept., UTHSC Memphis TN, USA: Developing a roadmap for β 1-AR trafficking and elucidating the crucial role of SAP97 and AKAP5 in signaling and trafficking of the β 1-AR in mouse neonatal cardiac myocytes and mammalian cell line. (Publications 13 & 14)

Aug 2009 - Aug 2011: **Postdoctoral trainee** at Pharmacology Dept., UTHSC Memphis TN, USA: characterizing the domains in SAP97 that were involved in recycling and resensitization of the β 1-AR in HEK-293 cells. (Publication 15)

Funded Projects:

May 2015- May 2018: Interdisciplinary Research Grant (IRG) funded by FOPCU, (125,000 EGP)

Co PI with Drs. Ramy K. Aziz (Microbiology and Immunology Dept.), Maggie M. Abbassi (Clinical Pharmacy Dept.) and Medhat Elghobashy (Analytical Chemistry Dept.) for the project: “Pharmacometric, Microbiological and Pharmacogenetic Monitoring of Voriconazole-treated Pediatric Cancer Patients: A Step Towards Personalized Therapeutics”

May 2011-Jan 2014: Interdisciplinary Research Grant (IRG) funded by FOPCU (125,000 EGP)
Co PI with Drs. Medhat Elghobashy (Analytical Chemistry Dept.) Aliaa El-Meshad (Pharmaceutics Dept.) and Rania Mohsen (Pharmacology & Toxicology Dept.) for the project: “Development, Characterization and Evaluation of a Therapeutic Vaccine for Treatment of Multiple Sclerosis” (Publication 7)

Technical Skills:

1. Molecular biology techniques including DNA and RNA extraction and purification, nucleic acid electrophoresis, PCR, qPCR, gene cloning and restriction digestion analysis and Calcium flux studies using flow cytometry.
2. Cell culture techniques including transient and stable transfection of eukaryotic cells, T cell purification and proliferation assays, flow cytometry.
3. Protein chemistry techniques including SDS PAGE, protein expression and purification, Western Blot Analysis.
4. Laboratory animal handling including i.v. injection, blood sampling and organ extraction.

Masters and Ph.D. Theses supervision:

Master Theses

Aliaa Selim

Manal Yousry

Sally Mohamed Abd EL Azim

Mira Magdy William (Awarded, 2017)

Heba Ramadan Ghaiad (Awarded, 2016)

Ph.D. Theses

Heba Ramadan Ghaiad

Maha Adel Rabie (Awarded, 2016)

Akram El-Kashlan (Awarded, 2015)

Teaching Experience:

Undergraduate courses:

Participation in lectures, practical sessions and examination committee of the following courses

1. Biochemistry-1 for third pharmacy students at FOPCU.
2. Biochemistry-2 for third pharmacy students at FOPCU.
3. Clinical biochemistry for fourth years pharmacy students at FOPCU
4. Clinical nutrition for level five students, credit hours program at FOPCU
5. Clinical Biochemistry for level four students, credit hours program at FOPCU
6. Biochemistry at Oman Assistant Pharmacy Institute, Masqat Sultanate Oman, Feb-May 2014
7. Metabolism summer course at Heliopolis University, July-Aug 2016

Postgraduate courses:

8. Advanced biochemistry for biochemistry Masters students at FOPCU
9. Clinical nutrition courses for The Board of American Society for Parenteral and Enteral Nutrition, Center for Continuous Education, FOPCU.

Scientific Bodies Membership:

- 1- Member of the American Society of Biochemistry and Molecular Biology (ASBMB)
- 2- Member of the Egyptian Society of Biochemistry and Molecular Biology (ESBMB)

Activities in the field of development and ensuring the quality of performance:

- 1- Participating in preparation of course files of different courses for the undergraduate and graduate programs at the Biochemistry Department.
- 2- Participation in the preparation of the research plan for the Biochemistry Department.
- 3- Participation in receiving the internal audit teams.

Committees membership:

- 1- Member of the disaster management committee in the period 2012 - 2013.
- 2- Member of the instrument committee of Biochemistry Department.

Training and workshops:

- 1- FLDC Training courses (11):
 - "Problem Solving and Decision Making" in the period 16-5-2018 to 17-5-2018
 - "Statistical Analysis of Bio-experiments" in the period 25-11-2017 to 26-11-2017
 - "Creative Thinking" in the period 10-10-2015 to 11-10-2015
 - "Meeting and Managing Time" in the period 9-5-2015 to 10-5-2015
 - "International Publication of Scientific Research" in the period 7-3-2015 to 8-3-2015
 - "Research Ethics" in the period 14-5-2014 to 15-5-2014.
 - "University Management" in the period 17-9-2013 to 19-9-2013.
 - "Financial Aspects & University Legal" in the period 7-5-2013 to 9-5-2013.
 - "Communication Skills" in the period 19-1-2013 to 21-1-2013.
 - "Strategic Planning" in the period 11-9-2012 to 13-9-2012.
 - "Competitive Research Projects" in the period 2-1-2012 to 4-1-2012.
- 2- "Constructive assessment for learning" workshop held at DAAD Cairo Office on 28-2-2018
- 3- "Designing the effective exam" workshop held at DAAD Cairo Office on 20-3-2018
- 4- "Responsible conduct of research" workshop held at the University of Tennessee on 15-10-2009
- 5- "The Second Clinical Nutrition Course" workshop held at the National Cancer Institute - Cairo on 24-09-2012.
- 6- "From Active Learning to Learning by Research" DAAD workshop held at FOPCU in the period 12-12-2012 to 16-12-2012.
- 7- Attend and pass the online course "Take Your Medicine" in the period from 13-9-2013 to 13-11-2013
- 8- Biostatistics for the health sciences I, UTHSC, Memphis TN (3 credit hours, Fall 2006)
- 9- AAI advanced course in immunology, Stanford University, CA (3 credit hours, Summer 2006)
- 10- Scientific writing workshop, University of Memphis, Memphis-TN (4 credit hours, Fall 2005)
- 11- Bioinformatics: a two-module course, UTHSC, Memphis-TN (3 credit hours, Spring 2004)
- 12- Special topics: B cell biology, UTHSC, Memphis-TN (2 credit hours, Fall 2003)

- 13- **Undergraduate intern** at the QC department in Glaxo Pharmaceutical Company, Salam City, Egypt. Summer1996.
- 14- **Undergraduate intern** at the QC department in Bristol Myers Squibb Pharmaceutical Company, Giza, Egypt, Summer 1995.

Awards/ Honors

- The best research article in Biochemistry, FOPCU 9th international conference, **April 2018**
- The best research article in Biochemistry, FOPCU 6th international conference, **April 2015**
- A certificate of appreciation from the FOPCU for participating and getting funded from the Interdisciplinary Research Grant program in the period January **2012 - 2014**
- UTHSC postdoctoral travel award, 2011 Experimental Biology, Washington DC, **April 2011**
- Cairo University Excellence in Publication awards every year between **2011-2017**
- ASM student travel award, ASM 107th General Meeting, Toronto, Canada, **May 2007**
- UTHSC student travel award, AAI 93rd Annual Meeting, Boston, MA, **June 2006**
- ASM student travel award, ASM 104th General Meeting, New Orleans, LA, **May 2004**

Conference Abstracts:

1. **Mohammed M Nooh**, Salvator Mancarella and Suleiman Bahouth. Novel Paradigms Governing β 1-Adrenergic Receptor Trafficking in Primary Adult Rat Cardiacmyocytes. Experimental Biology, San Diego CA , USA, **April 2018**
2. **Mohammed Nooh** and Suleiman Bahouth. New Insights in G-protein Coupled Receptors (GPCR) Trafficking Using β 1-Adrenergic Receptor (B1-AR) as a Model. 4th Future International Conference of Pharmaceutical Sciences. **Jan 31st – Feb 2nd 2017**. Invited speaker
3. Suleiman Bahouth and **Mohammed M Nooh**: A Road Map for GPCR Trafficking Pathways. Experimental Biology, San Diego CA , USA, **April 2014**
4. **Mohammed M Nooh** and Suleiman Bahouth: Characterizing the Structural Elements Involved in β 1-Adrenergic Receptor Interaction with SAP97. Experimental Biology, Boston MA, USA, **April 2013**
5. **Mohammed Nooh** and Suleiman Bahouth. Biochemical and Functional Characterization of SAP97 Interaction with β 1-Adrenergic Receptor. Egyptian Society of Biochemistry and Molecular Biology (ESBMB) Annual Scientific Conference, Ain Shams University **Apr 2012**. Oral presentation
6. **Mohammed Nooh** and Malak Kotb. Biochemical Investigation of Molecular Mechanisms Underlying the Effects of HLA Class II Allelic Variations in Modulating Streptococcal Superantigens Responses. Third International Scientific Conference of Faculty of Pharmacy Cairo University. **Apr 2012**.
7. **Mohammed M. Nooh**, S. Bahouth: SAP 97 Controls β 1-Adrenergic Receptor Trafficking in a PDZ Dependent Manner. Experimental Biology, Washington DC, USA, **April 2011**
8. **Mohammed M. Nooh**, R. Kansal and M. Kotb: Molecular Basis for HLA Class II Differential Presentation of Streptococcal Superantigens Involved in GAS Sepsis. XVII LANCEFIELD international symposium on Streptococci & streptococcal diseases. Porto Heli, Greece, **June 2008**
9. **Mohammed M. Nooh**, R. Kansal and M. Kotb: Distinct HLA Class II Haplotypes/Alleles Play a Dominant Role in Controlling The Response to Streptococcal Superantigens. ASM 107th General Meeting, Toronto, Canada, **May 2007**

10. **Mohammed M. Nooh**, R. Kansal, D. Brand, and M. Kotb: Evidence for a Direct Role of HLA Class II Allelic Variation in Potentiating Susceptibility to Severe Invasive Streptococcal Infection. AAI Annual Meeting, Boston, MA, **June 2006**
11. **Mohammed M. Nooh**, DE Low, A McGeer, A Norrby-Teglund and M. Kotb. Active suppression of Responses to Streptococcal Superantigens by an HLA Class II Allele Associated with Protection from Severe GAS Infections. ASM 105th General Meeting, Atlanta, GA, **June 2005**
12. **Mohammed M. Nooh**, N. Gengehi, R. Kansal, C. David, and M. Kotb; Validation of the Involvement of Host Genetic Factors in Determining the Outcome of Invasive Group A Streptococcus Infection Using Humanized HLA Transgenic Mice. ASM 104th General Meeting, New Orleans, LA, **May 2004**

Publications:

1. **Nooh MM**, Mancarella S, and Bahouth SW. Novel paradigms governing β 1-adrenergic receptor trafficking in primary adult rat cardiac myocytes. **Molecular Pharmacology**. May 30 2018, Epub ahead of print. **IF: 3.9**
2. El-Boghdady NA., Abdeltawab NF and **Nooh MM**. Resveratrol and Montelukast Alleviate Paraquat-Induced Hepatic Injury in Mice: Modulation of Oxidative Stress, Inflammation, and Apoptosis. **Oxidative Medicine and Cellular Longevity**. Volume 2017, Article ID 9396425, 9 pages. doi.org/10.1155/2017/9396425. **IF: 4.6**
3. Elbanna AH, **Nooh MM**, Mahrous EA, Khaleel AE, Elalfy TS. Extract of Bauhinia vahlii Shows Antihyperglycemic Activity, Reverses Oxidative Stress, and Protects against Liver Damage in Streptozotocin-induced Diabetic Rats. **Pharmacognosy Magazine**. Oct;13:S607-S612. doi: 10.4103/pm.pm_4_17. **IF: 1.07**
4. **Nooh MM**, Bahouth SW. Visualization and quantification of GPCR trafficking in mammalian cells by confocal microscopy. **Methods Cell Biol**. 2017;142:67-78. doi: 10.1016/bs.mcb.2017.07.010. **IF: 1.3**
5. Bahouth SW, **Nooh MM**. Barcoding of GPCR trafficking and signaling through the various trafficking roadmaps by compartmentalized signaling networks. **Cell Signal**. 2017 Aug ;36 :42-55. doi: 10.1016/j.cellsig.2017.04.015. **IF: 3.9**
6. Ghaiad HR, **Nooh MM**, El-Sawalhi MM, Shaheen AA. Resveratrol Promotes Remyelination in Cuprizone Model of Multiple Sclerosis: Biochemical and Histological Study. **Mol Neurobiol**. 2017 Jul; 54(5):3219-3229. doi: 10.1007/s12035-016-9891-5. **IF: 6.19**
7. Al-Ghobashy MA, ElMeshad AN, Abdelsalam RM, **Nooh MM**, Al-Shorbagy M, Laible G. Development and Pre-Clinical Evaluation of Recombinant Human Myelin Basic Protein Nano Therapeutic Vaccine in Experimental Autoimmune Encephalomyelitis Mice Animal Model. **Sci Rep**. 2017 Apr 20; 7: 46468. doi: 10.1038/srep46468. **IF: 4.25**
8. **Nooh MM**, Bahouth SW. Two barcodes encoded by the type-1 PDZ and by phospho-Ser312 regulate retromer/WASH-mediated sorting of the β 1-adrenergic receptor from endosomes to the plasma membrane. **Cell Signal**. 2017 Jan; 29: 192-208. doi: 10.1016/j.cellsig.2016.10.014. **IF: 3.9**
9. **Nooh MM**, Mancarella S, Bahouth SW. Identification of novel transplantable GPCR recycling motif for drug discovery. **Biochem Pharmacol**. 2016 Nov 15; 120 :22-32. doi:10.1016/j.bcp.2016.09.011. **IF: 5.09**

10. Rasheed H, Hegazy RA, Gawdat HI, Mehaney DA, Kamel MM, Fawzy MM, **Nooh MM**, Darwish HA. Serum Vitamin D and Vitamin D Receptor Gene Polymorphism in Mycosis Fungoides Patients: A Case Control Study. **PLoS One**. 2016 Jun 23;11(6):e0158014. doi: 10.1371/journal.pone.0158014. **IF: 3.05**
11. El-Kashlan AM, **Nooh MM**, Hassan WA, Rizk SM. Therapeutic Potential of Date Palm Pollen for Testicular Dysfunction Induced by Thyroid Disorders in Male Rats. **PLoS One**. 2015 Oct 1;10(10):e0139493. doi: 10.1371/journal.pone.0139493. **IF: 3.23**
12. Mehaney DA, Darwish HA, Hegazy RA, **Nooh MM**, Tawdy AM, Gawdat HI, El-Sawalhi MM. Analysis of oxidative stress status, catalase and catechol-O-methyltransferase polymorphisms in Egyptian vitiligo patients. **PLoS One**. 2014 Jun 10;9(6):e99286. **IF: 3.53**
13. **Nooh MM**, Chumpia MM, Hamilton TB, Bahouth SW. Sorting of beta1-Adrenergic Receptors is Mediated by Pathways That are Either Dependent or Independent of Type-1 PDZ, PKA and SAP97. **J Biol Chem**. 2014 Jan 24;289(4):2277-94. **IF: 4.6**
14. Li X, **Nooh MM**, Bahouth SW. Role of AKAP79/150 Protein in β 1-Adrenergic Receptor Trafficking and Signaling in Mammalian Cells. **J Biol Chem**. 2013 Nov 22;288(47):33797-812. **IF: 4.65**
15. **Nooh MM**, Naren AP, Kim SJ, Xiang YK, Bahouth SW. SAP97 controls the trafficking and resensitization of the beta-1-adrenergic receptor through its PDZ2 and I3 domains. **PLoS One**. 2013 May 16;8(5):e63379. **IF: 3.73**
16. Pagadala J., Williams-Guy K., **Nooh MM**., Steinle JJ. and Miller DD. Beta-adrenergic Receptor Signaling by the Isomers of Isoproterenol and Like Drugs in Retinal Endothelial Cells and Müller Cells. **Med. Chem. Commun**. 2011 June 2, 726-730. **IF: 2.8**
17. **Nooh MM**, Nookala S, Kansal R, Kotb M. Individual Genetic Variations Directly Effect Polarization of Cytokine Responses to Superantigens Associated with Streptococcal Sepsis: Implications for Customized Patient Care. **J Immunol**. 2011 Mar 1;186(5):3156-63. **IF: 5.74**
18. Kasper KJ, Xi W, Nur-Ur Rahman AK, **Nooh MM**, Kotb M, Sundberg EJ, Madrenas J, McCormick JK. Molecular Requirements for MHC Class II Alpha-chain Engagement and Allelic Discrimination by the Bacterial Superantigen Streptococcal Pyrogenic Exotoxin C. **J Immunol**. 2008 Sep 1;181(5):3384-92. **IF: 6.06**
19. Abdeltawab NF, Aziz RK, Kansal R, Rowe SL, Su Y, Gardner L, Brannen C, **Nooh MM**, Attia RR, Abdelsamed HA, Taylor WL, Lu L, Williams RW, Kotb M. An Unbiased Systems Genetics Approach to Mapping Genetic Loci Modulating Susceptibility to Severe Streptococcal Sepsis. **PLoS Pathog**. 2008 Apr 18;4(4):e1000042. **IF: 9.33**
20. Li H, **Nooh MM**, Kotb M, Re F. Commercial Peptidoglycan Preparations are Contaminated with Superantigen-like Activity that Stimulates IL-17 Production. **J Leukoc Biol**. 2008 Feb;83(2):409-18. **IF: 4.12**
21. Aziz RK, Kansal R, Abdeltawab NF, Rowe SL, Su Y, Carrigan D, **Nooh MM**, Attia RR, Brannen C, Gardner LA, Lu L, Williams RW, Kotb M. Susceptibility to Severe Streptococcal Sepsis: Use of a Large Set of Isogenic Mouse Lines to Study Genetic and Environmental Factors. **Genes Immun**. 2007 Jul;8(5):404-15. **IF: 4.53**
22. **Nooh MM**, El-Gengehi N, Kansal R, David CS, Kotb M. HLA Transgenic Mice Provide Evidence for a Direct and Dominant Role of HLA Class II Variation in Modulating the Severity of Streptococcal Sepsis. **J Immunol**. 2007 Mar 1;178(5):3076-83. **IF: 6.29**

23. **Nooh MM**, Aziz RK, Kotb M, Eroshkin A, Chuang WJ, Proft T, Kansal R. Streptococcal Mitogenic Exotoxin, Smez, Is The Most Susceptible MIT1 Streptococcal Superantigen To Degradation By The Streptococcal Cysteine Protease, SpeB. **J Biol Chem.** 2006 Nov 17;281(46):3528. **IF: 5.8**

Book Sections:

- 1- Kotb M, Williams RW, Fathey N, **Nooh M**, Rowe S, Kansal R, and Aziz R. Biotools for determining the genetics of susceptibility to infectious diseases and expediting research translation into effective countermeasures. Jul 2008. In National Institute of Allergy and Infectious Diseases, NIH: Volume 1: Frontiers in Research (Infectious Disease) Vassil St. Georgiev. Humana Press. (ISBN: 978-1934115770)