

CURRICULUM VITAE

Noha M. Mesbah

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PERSONAL INFORMATION

Name: Noha Mostafa Kamel Mesbah

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ONLINE RECORDS

Scopus Author ID: 13102576800

Google scholar ID: https://scholar.google.com/citations?user=e_t9Ik4AAAAJ&hl=en

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ORCID: 0000-0002-8863-968X

EDUCATION

Ph.D, University of Georgia, Athens GA

December 2008

B. Pharmaceutical Sc. Faculty of Pharmacy, Suez Canal University, Egypt

May 2002

PROFESSIONAL EXPERIENCE

Professor

April 2020 – Present

Department of Biochemistry and Molecular Biology, Faculty of Pharmacy, Suez Canal University

Vice Dean for Post-graduate Affairs and Research

September 2019 – Present

Institute of Biotechnology for Post-graduate Studies and Research, Suez Canal University

Department Head

September 2016 - Present

Department of Biochemistry and Molecular Biology, Faculty of Pharmacy, Suez Canal University

Associate Professor

February 2015 – April 2020

Department of Biochemistry and Molecular Biology, Faculty of Pharmacy, Suez Canal University

Head, Grants and International Collaboration Office

March 2014 – March 2018

Technology Innovation and Commercialization Offices, Suez Canal University

Executive Board Member

December 2009 – June 2015

Biotechnology research center, Suez Canal University

Assistant Professor

September 2009 – February 2015

Department of Biochemistry and Molecular Biology, Faculty of Pharmacy, Suez Canal University

Post-doctoral Research Associate

January 2009-August 2009

Department of Microbiology, University of Georgia, Athens, GA USA

Graduate Research Assistant

August 2003-December 2008

Department of Microbiology, University of Georgia

Dissertation title: “Anaerobic Halophilic Alkalithermophiles: Diversity and Physiological Adaptations to Multiple Extreme Conditions”

Demonstrator

August 2002- July 2003

Department of Biochemistry and Molecular Biology, Faculty of Pharmacy, Suez Canal University, Ismailia, Egypt

ADDITIONAL EXPERIENCE

Associate editor, *Frontiers in Bioengineering and Biotechnology*, Section: Industrial Biotechnology, June 2022 - Present

Member of editorial board of the journal “*Extremophiles*” (Springer), January 2016 - Present

Guest associate editor, *Frontiers in Endocrinology* (Frontiers). Launched the research topic “Application of Nanotechnology for Treating Endocrine Complications”, January 2022 - Present

Review editor, *Frontiers in Bioengineering and Biotechnology*, Section: Bioprocess engineering, September 2021 – May 2022

Guest associate editor, *Frontiers in Bioengineering and Biotechnology* (Frontiers). Launched the research topic “Enzymes from Extreme Environments: Volume II”, October 2020 – October 2021

Convener for the session “Extremophilic Enzymes”, Society for Industrial Microbiology and Biotechnology (SIMB) Annual Meeting, Denver, CO, USA, July 30 – August 3, 2017

Member of organizing committee, 1stConference on Clinical Pharmacy, Faculty of Pharmacy, Suez Canal University, November 25, 2017

Guest associate editor, *Frontiers in Bioengineering and Biotechnology* (Frontiers). Launched the research topic “Enzymes from Extreme Environments”, June 2014 – February 2016

Participated as a reviewer for the 4th Young Researchers Conference, Suez Canal University, April 29 - 30, 2017

Participated as a reviewer for the 3rd Young Researchers Conference, Suez Canal University, May 6 – 7, 2016

Reviewer for the journals *Extremophiles*, *Bioresource Technology*, *Biochimica Biophysica Acta: Biomembranes*, *Journal of Molecular Catalysis B: Enzymatic*, *International Journal of Biological Macromolecules*, *Frontiers in Bioengineering and Biotechnology* and *PLoS One*

Member of organizing committee, 1st annual Young Researcher Conference, Suez Canal University, Ismailia, Egypt, March 6 – 7, 2013

Visiting scientist, Institute of Molecular Biosciences, Johannes Wolfgang Goethe Universität Frankfurt am Main. October 2011 – December 2011

Lecturer at workshop entitled: “Principles of Biotechnology and Genetic Engineering and its Applications”, Biotechnology Research Center, Suez Canal University, Ismailia, Egypt, May 4 – 6, 2010

Visiting scientist, Department of Microbiology and Immunology, University of Otago, Dunedin, New Zealand, *Contact: Dr. Gregory Cook*, February 2007 – May 2007

Workshop Coordinator at Suez Canal University (Egypt) for *Workshop on Marine Natural Products, Discovery, Biosynthesis and Development*, December 2002
— workshop held at the Suez Canal University

RESEARCH PROJECTS AND FUNDING RECEIVED

Egyptian science and technology development fund (STDF) US-Egypt Joint grant: “Isolation, Purification and Characterization of Novel Halophilic, Alkalithermophilic Enzymes of Industrial Interest from the Alkaline, Hypersaline Lakes of the Wadi An Natrun, Egypt”, project duration 5 years (2010 – 2015), co-principal investigators Noha M. Mesbah (Egypt), Juergen Wiegel (USA). Funds received: EGP 434,260

National Science Foundation Grant “MIP: Bioenergetics of 'Natronanaerobium thermophilum' JW/NM-L6" (MCB-0604224), September 2006

— Assisted major professor in formulating hypotheses, experimental design and compiling background information for full grant proposal

HONORS AND AWARDS

Best oral presentation award, 16th Annual Conference of the National and Biochemistry and Molecular Biology Committee “Recent Trends in Biochemistry and Molecular Biology: Towards Vision 2030”, American University in Cairo, Cairo, September 2019

Excellence in Externally Funded Research Projects Award, Suez Canal University, December 2018.

Bilateral Exchange of Academics research scholarship, German Academic Exchange Service (DAAD), Johannes Wolfgang Goethe Universität Frankfurt am Main. October 2011 – December 2011

Robert C. Anderson Memorial Award for outstanding research, University of Georgia Research Foundation, Athens, GA USA, March 2009

Jack and Jane Payne Fellowship for outstanding accomplishments in research, teaching and service, University of Georgia, Athens, GA USA, December 2008

Graduate School Dissertation Completion Assistantship Award, University of Georgia, Athens, GA USA August 2007 – August 2008

Sigma Xi Grant-in-Aid of Research Award, Sigma Xi Scientific Research Society, Raleigh, NC USA, April 2006

PEER REVIEWED JOURNAL PUBLICATIONS

Xing, Q., **N.M. Mesbah**, H. Wang, Y. Zhang, J. Li, B. Zhao. (2023) Tandem mass tag (TMT)-based quantitative proteomics reveals osmotic adaptation mechanisms in *Alkalicoccus halolimnae* BZ-SZ-XJ29T, a halophilic bacterium with a broad salinity range for optimal growth. *Environ. Microbiol.* In press. DOI: 10.1111/1462-2920.16428

Fattah, S.A., M.S. Selim, M.A. Abdelfattah, D.M. Abo-Elmatty, **N.M. Mesbah**, A.R. Abdel hamed. (2023) Serum transforming growth factor Beta 1 and its genetic variants are associated with increased macrophage inflammatory protein Beta 1 and susceptibility to idiopathic carpal tunnel syndrome. *J. Pers. Med.* 13: 715

Xing, Q, **N.M. Mesbah**, H. Wang, J. Li, B. Zhao. (2023) Quantitative evaluation of endogenous reference genes for ddPCR under salt stress using a moderate halophile. *Extremophiles.* 27: 8

Mesbah, N.M. (2022) Industrial biotechnology based on enzymes from extreme environments. *Front. Bioeng. Biotechnol.* 10:870083

Wahba, A.S., M.E. Ibrahim, **N.M. Mesbah**, S.M. Saleh, D.M. Abo-elmatty, E.T. Mehanna. (2022) Long non-coding RNA MEG3 and its genetic variant rs941576 are associated with rheumatoid arthritis pathogenesis in Egyptian patients. *Arch Physiol Biochem.* 128 (6): 1571 – 1578.

Al-Noshokaty, T.M., **N.M. Mesbah**, D.M. Abo-Elmatty, A.I. Abulsoud, A.R. Abdel-Hamed. (2022). Selenium nanoparticles overcomes sorafenib resistance in thioacetamide induced hepatocellular carcinoma in rats by modulation of mTOR, NF- κ B pathways and LncRNA-AF085935/GPC3 axis. *Life Sci.* 303: 120675

Fattah, S.A., M.A. Abdel Fattah, **N.M. Mesbah**, S.M. Saleh, D.M. Abo-elmatty, E.T. Mehanna. (2022). The expression of zinc finger 804a (ZNF804a) and cyclin-dependent kinase 1 (CDK1) genes is related to the pathogenesis of rheumatoid arthritis. *Arch. Physiol. Biochem.* 128: 688 - 693

Elgebaly, M.M., A.R. Abdel-Hamed, **N.M. Mesbah**, D.M. Abo-Elmatty, A. Abouzid, M.A. Abdelrazek (2022) Hypothyroidism affect progression and worse outcomes of breast cancer but not ovarian cancer, *J Immunoassay Immunochem.* 43: 288 - 298

Elkashef, K.A., W.A. Emam, **N.M. Mesbah**, D.M. Abo-Elmatty, A.R. Abdel-hamed. (2022) Prevalence of occult hepatitis C virus infection in Egyptian patients with lymphoma: A new vision. *Diagnostics.* 12: 1015.

Zabady, S., N. Mahran, M.A. Soltan, M. Alaa Eldeen, R.A. Eid, S. Albogami, E. Fayad, M. Matboli, E.K. Habib, A.H. Hasanin, M.A. Ali, **N.M. Mesbah**, D.M. Abo-Elmatty, A.R. Abdel-Hamed (2022) Cyanidin-3-glucoside modulates hsa_circ_0001345/ miRNA106b/ ATG16L1 axis expression as a potential protective mechanism against hepatocellular carcinoma. *Curr. Issues Mol. Biol.* 44: 1677 – 1687.

Fattah, S.A., M.A. Abdel Fattah, **N.M. Mesbah**, S.M. Saleh, D.M. Abo-elmatty (2022) YWHAH genetic variants are associated with increased hypoxia inducible factor-1 α / vascular endothelial growth factor in Egyptian rheumatoid arthritis patients. *Biochem. Genet.* 60: 1986-1999.

Asal, D.M., **N. M. Mesbah**, D. M. Abo-elmatty, H. Fathy, A.R. Abdel-Hamed. (2022) Association of vaspin rs2236242 and Val109Asp omentin genes polymorphism and their serum levels with increased risk of breast cancer. *Meta Gene.* 31: 101016.

Mehanna, E.T., S.S. Khalaf, **N.M. Mesbah**, D.M. Abo-elmatty, M.M. Hafez. (2022) Anti-oxidant, anti-apoptotic, and mitochondrial regulatory effects of selenium nanoparticles against vancomycin induced nephrotoxicity in experimental rats. *Life Sci.* 288: 120098

Mehanna, E.T., A.A. Ali, F. El-Shaarawy, **N.M. Mesbah**, D. M. Abo-Elmatty, N.M. Aborehab. (2021) Anti-oxidant and anti-inflammatory effects of lipopolysaccharide from *Rhodobacter sphaeroides* against ethanol-induced liver and kidney toxicity in experimental rats. *Molecules.* 26: 7437

Mesbah, N.M. (2021) Editorial: Enzymes from Extreme Environments, Volume II. *Front. Bioeng. Biotechnol.* 9: 799426

Hazem, R.M., A.A. Mohamed, N. Ghareeb, E. T. Mehanna, **N.M. Mesbah**, D. M. Abo-Elmatty, M.S. Elgawish. (2021) Anti-cancer activity of two novel heterocyclic compounds through modulation of VEGFR and miR-122 in mice bearing Ehrlich ascites carcinoma. *Eur J Pharmacol.* 892: 173747.

Mohamed, A.A., D.M. Abo-elmatty, O.I. Ezzat, A.A. Youssef, E.T. Mehanna, A.A., Hassnine, **N.M. Mesbah**, S. Saed, E.A. Sayed, M. Hamada, A.F. Khamis, A. Elsentenawy, M.S.E. Abd El-Raouf, S. Abd-Elsalam, A.M. Elsayed. (2021) Expression of disintegrin and metalloprotease 10 gene polymorphisms in a cohort of Egyptian patients with hepatocellular carcinoma. *Curr. Cancer Ther. Rev.* 17: 312 - 318

Abo Mansour, H.E., M. El-Batsh, N. Badawy, E. T. Mehanna, **N. M. Mesbah**, D.M. Abo-elmatty. (2021) Ginger extract loaded into chitosan nanoparticles enhances cytotoxicity and reduces cardiotoxicity of doxorubicin in hepatocellular carcinoma in mice. *Nutr Cancer.* 73:2347 – 2362.

Abo Mansour, H.E., M.M. El-Batsh, N.S. Badawy, E.T. Mehanna, **N.M. Mesbah**, D.M. Abo-Elmatty. (2020) Effect of co-treatment with doxorubicin and verapamil loaded into chitosan nanoparticles on diethylnitrosamine-induced hepatocellular carcinoma in mice. *Hum. Exp. Toxicol.* 39: 1528 – 1544.

Khalil, M.R., R.S. El-Demerdash, H.H. Elminshawy, E.T. Mehanna, **N.M. Mesbah**, D.M. Abo-Elmatty. (2020) Therapeutic effect of bone marrow mesenchymal stem cells in a rat model of carbon tetrachloride induced liver fibrosis. *Biomed. J.* 44: 598-610.

Sorokin, D.Y., A.Y. Merkel, E. Messina, M.M. Yakimov, T. Itoh, **N.M. Mesbah**, J. Wiegel. A. Oren. (2020) Reclassification of the genus *Natronolimnobius*: proposal of two new genera, *Natronolimnohabitans* gen. nov. to accommodate *Natronolimnobius innermongolicus* and *Natrarchaeobaculum* gen. nov. to accommodate *Natronolimnobius aegyptiacus* and *Natronolimnobius sulfurireducens*. *Int. J. Syst. Evol. Microbiol.* 70: 3399 – 3405

Wahba, A.S., M.E. Ibrahim, **N.M. Mesbah**, S.M. Saleh, D.M. Abo-elmatty, E.T. Mehanna. (2020) Serum LINC00305 expression and its genetic variant rs2850711 are associated with clinical and laboratory features of rheumatoid arthritis. *Brit J Biomed Sci.* 77: 142 - 147

Mosalam, E.M., A.A. Zidan, E.T. Mehanna, **N.M. Mesbah**, D.M. Abo-elmatty. (2020) Thymoquinone and pentoxifylline enhance the chemotherapeutic effect of cisplatin by targeting notch signaling pathway in mice. *Life Sci.* 244: 117299.

Fakhry, M.M., A.R. Abdel-Hamed, D.M. Abo-elmatty, **N.M. Mesbah**, A. Al-Sawaf, O. Ezzat, H. Al-Sawaf. (2020) A possible novel co-relation of locus 7q11 rs1761667 polymorphism with the severity of preeclampsia in Egyptian pregnant women. *Meta Gene.* 24: 100650.

Abou-Hashem, M.M.M., D.M. Abo-Elmatty, **N.M. Mesbah**, A.M. Abd El-Mawgoud. (2019) Induction of sub-G0 arrest and apoptosis by seed extract of *Moringa peregrina* (Forssk.) Fiori in cervical and prostate cancer cell lines. *J. Integr. Med.* 17:410-422.

Mesbah, N.M. (2019) Covalent immobilization of a halophilic, alkalithermostable lipase LipR2 on Florisil® nanoparticles for production of alkyl levulinates. *Arch. Biochem. Biophys.* 667: 22-29.

Khalaf, S.S., M.H. Hafez, E.T. Mehanna, **N.M. Mesbah**, D.M. Abo-Elmatty. (2019) Combined vildagliptin and memantine treatment downregulates expression of amyloid precursor protein, total and phosphorylated tau in a rat model of combined Alzheimer's disease and type 2 diabetes. *Naunyn-Schmiedeberg's Arch. Pharmacol.* 392: 685-695.

Mesbah, N.M. and J. Wiegel. (2018) Improvement of activity and thermostability of agar-entrapped, thermophilic, haloalkaliphilic amylase AmyD8. *Catal. Lett.* 148:2665-2674.

Zhao, B., Q. Hu, X. Guo, Z. Liao, K.J. Bowers, F. Sarmiento, **N.M. Mesbah**, Y. Yan, J. Li, J. Wiegel. (2018). Corrigendum: *Natronolimnobius aegyptiacus* sp. nov., an obligately aerobic, extremely halophilic alkalithermophilic archaeon isolated from the athalassohaline Wadi AnNatrun, Egypt. *Int. J. Syst. Evol. Microbiol.* 68: 3954-3954.

Badawy, H.K., D.M. Abo-Elmatty, **N.M. Mesbah**. (2018) Differential expression of microRNA let-7e and 296-5p in plasma of Egyptian patients with essential hypertension. *Heliyon.* 4: e00969.

Mohamed, H.E., D. M. Abo-Elmatty, **N.M. Mesbah**, S.M. Saleh, A.A. Ali, A.T. Sakr. (2018) Raspberry ketone preserved cholinergic activity and antioxidant defense in obesity induced Alzheimer disease in rats. *Biomed. Pharmacother.* 107: 1166-1724.

Eman, R., M. Ghattas, **N.M. Mesbah**, D.M. Abo-Elmatty, E.T. Mehanna. (2018) Relation of locus 1p13 rs646776 polymorphism with the risk of preeclampsia. *Hypertens. Pregnancy.* 37: 81 - 86.

Abd El-Fatah, R.M., **N.M. Mesbah**, D.M. Abo-Elmatty, K.A., Aly. (2018) The C-terminus of the ESAT6-like secretion system virulence factor EsxC mediates divalent cation-dependent homodimerization. *Toxicon.* 146: 129-137.

Badawy, H.K., D.M. Abo-Elmatty, **N.M. Mesbah**. (2018) Association between serum microRNA-605 and microRNA-623 expression and essential hypertension in Egyptian patients. *Meta Gene:*16: 62-65.

Mesbah, N.M. and J. Wiegel. (2018) Biochemical characterization of halophilic, alkalithermophilic amylopullulanase PulD7 and truncated amylopullulanases PulD7 Δ N and PulD7 Δ C. *Int. J. Biol. Macromol.* 111C: 632-638.

Zhao, B., Q. Hu, X. Guo, Z. Liao, F. Sarmiento, **N.M. Mesbah**, Y. Yan, J. Li, J. Wiegel. (2018). *Natronolimnobius aegyptiacus* sp. nov., an obligately aerobic, extremely halophilic alkalithermophilic archaeon isolated from the athalassohaline Wadi AnNatrun, Egypt. *Int. J. Syst. Evol. Microbiol.* 68: 498-506.

Abdel-Hamed, A.R., **N.M. Mesbah**, M.H. Ghattas, D.M. Abo-Elmatty, S. M. Saleh. (2017). Serum miRNA-122 expression in non-alcoholic fatty liver disease among Egyptian patients and its correlation with interleukin-1A gene polymorphism. *Meta Gene.* 14: 19-23

Abdel-Hamed, A.R., M.H. Ghattas, **N.M. Mesbah**, S.M. Saleh, D.M. Abo-Elmatty. (2017). Association of interleukin-1A insertion/deletion gene polymorphism and possible high risk factors with non-alcoholic fatty liver disease in Egyptian patients. *Arch Physiol Biochem.* 123: 330-333.

Mesbah, N.M. and J. Wiegel. (2017). A halophilic, alkalithermostable, ionic liquid tolerant cellulase and its application in in situ saccharification of rice straw. *Bioeng Res*10: 583-591

Khatab, S.A., D.M. Abo-Elmatty, M.H. Ghattas, **N.M. Mesbah**, E.T. Mehanna. (2017). Intestinal fatty acid binding protein Ala54Thr polymorphism is associated with peripheral atherosclerosis combined with type 2 diabetes mellitus. *Journal of Diabetes.* 9: 821-826

Abdel-Hamed, A.R., D.M. Abo-Elmatty, J. Wiegel, **N.M. Mesbah**. (2016) Biochemical characterization of a halophilic, alkalithermophilic protease from *Alkalibacillus* sp. NM-Da2. *Extremophiles.* 20: 885-894

Mesbah, N.M. and F.A. Sarmiento. (2016) Editorial: Enzymes from extreme environments. *Front. Bioeng. Biotechnol.* 4:24

Hussein, J., D.M. Abo-Elmatty, D. Medhat, **N.M. Mesbah**, A.R. Farrag, H. Fahmy. (2016) Effect of omega-3 on chemically induced hepatitis in rats. *Planta Med.* 82(S 01): S1-S381.

- Abd-Elbaky, A.E., D.M. Abo-Elmatty, **N.M. Mesbah**, S.M. Saleh, A.M. Abdel Hamid. (2016). Adiponectin (+276 G/T), tumor necrosis factor alpha (-308 G/A) and interleukin-6 (-174 C/G) genes polymorphisms in Egyptian type 2 diabetic patients. *J. Diabetes Metab.* 7: 673.
- Hussein, J, D.M. Abo-Elmatty, D. Medhat, **N.M. Mesbah**, A. Farrag, H. Fahmy. (2016) Flaxseed oil attenuates experimental liver hepatitis. *Der Pharmacia Lettre.* 8: 142-150.
- Abd-Elbaky, A.E., D.M. Abo-Elmatty, **N.M. Mesbah**, S.M. Ibrahim. (2016). Omentin and apelin concentrations in relation to obesity, diabetes mellitus type two, and cardiovascular diseases in Egyptian population. *Int. J Diabetes Dev Ctries.* 36: 52-58.
- Mehanna, E.T., **N.M. Mesbah**, M.H. Ghattas, S.M. Saleh, D.M. Abo-Elmatty. (2015) Association of chemerin Rs17173608 and vaspin Rs2236242 gene polymorphisms with metabolic syndrome in Egyptian women. *Endocrine Research* .41:43-48.
- Elshaffei, I.M., N. Gupta, C.H. Wu, D.C. Wu, L.N. Hammad, D.M. Abo-Elmatty, **N.M. Mesbah**, G.Y. Wu. (2015) Effects of short RNA structural analogs against hepatitis C virus genotypes 2,3 and 4 in replicon cells. *J. Dig. Dis.* 16: 449 - 455.
- Mehanna, E.T., M.H. Ghattas, **N.M. Mesbah**, S.M. Saleh, D.M. Abo-Elmatty. (2015). Association of microRNA-146a rs2910164 gene polymorphism with metabolic syndrome. *Folia Biologica (Praha).* 61: 43-48.
- Mehanna, E.T., S.M. Saleh, M.H. Ghattas, **N.M. Mesbah**, D.M. Abo-Elmatty. (2015). Relation of myeloperoxidase-463G/A polymorphism with metabolic syndrome and its component traits in Egyptian women. *Arch. Physiol. Biochem.* 121: 13-18.
- Mehanna, E.T., D.M. Abo-Elmatty, M.H. Ghattas, **N.M. Mesbah**, S.S. Saleh. (2015). Apelin rs2235306 polymorphism is not related to metabolic syndrome in Egyptian women. *Egyptian Journal of Human Medical Genetics.* 16:35-40.
- Mesbah, N.M.** and J. Wiegel. (2014) Halophilic alkali- and thermostable amylase from a novel polyextremophilic *Amphibacillus* sp. NM-Ra2. *Int. J. Biol. Macromol.* 70: 222-229.
- Mesbah, N.M.** and J. Wiegel. (2014) Purification and characterization of a halophilic, alkalithermophilic extracellular protease from *Alkalibacillus* sp. NM-Fa4 isolated from the Wadi An Natrun, Egypt. *J. Mol. Catalysis B: Enzymatic.* 105: 74-81.
- Ghattas M, El-shaarawy F, **Mesbah N**, Abo-Elmatty D. (2014) DNA methylation status of the methylenetetrahydrofolate reductase gene promoter in peripheral blood of end-stage renal disease patients. *Mol. Biol. Rep.* 41: 683-688.
- Ghattas M, El-shaarawy F, **Mesbah N**, Abo-Elmatty D (2013) The methylation profile of IFN- α , SOCS1 and SOCS3 promoter regions in end-stage renal disease. *J Data Mining Genomics Proteomics* 4:144. doi: 10.4172/2153-0602.1000144

Ghattas, M.H., E.T. Mehanna, **N.M. Mesbah**, and D.M. Abo-Elmatty. (2013) Association of estrogen receptor alpha gene polymorphisms with metabolic syndrome in Egyptian Women. *Metabolism*. 62: 1437-1442.

Ghattas, M.H., H. Badawy, **N.M. Mesbah**, and D.M. Abo-Elmatty. (2013) Apolipoprotein CIII3238C/G gene polymorphism influences oxidized low – density lipoprotein with a risk of essential hypertension. *J. Biochem. Pharm. Research*. 1: 143 - 147

Ghattas, M.H., E.T. Mehanna, **N.M. Mesbah**, and D.M. Abo-Elmatty. (2013) Relaxin-3 is associated with metabolic syndrome and its component trains in women. *Clinical Biochem*. 46: 45 – 48.

Mesbah, N.M., and J. Wiegel. (2012) Life under multiple extreme conditions: Diversity and physiology of the halophilic alkalithermophiles. *Appl. Environ. Microbiol*. 78: 4074-4082.

Eid, E.S., D.M. Abo-Elmatty, A. Hanora, **N.M. Mesbah**, and S.H. Abou-El-Ela. (2011). Molecular and protein characterization of the latrunculin-producing sponge *Negombata* from the Red Sea. *J. Pharm. Biomed. Analysis*. 56:911-915.

Zhao, B., **N.M. Mesbah**, E. Dalin, L. Goodwin, M. Nolan, S. Pitluck, O. Chertkov., T.S. Brettin, J. Han., F.W. Larimer, M.L. Land, L. Hauser, N. Kyrpides and J. Wiegel. (2011). Complete genome sequence of the anaerobic, halophilic alkalithermophile *Natranaerobius thermophilus* JW/NM-WN-LF^T. *J. Bacteriol*. 193:4023-4024.

Mesbah, N.M. and J. Wiegel. (2011). The Na⁺-translocating F₁F_o-ATPase from the halophilic, alkalithermophile *Natranaerobius thermophilus*. *Biochim. Biophys. Acta – Bioenergetics*. 1807: 1133 – 1142.

Bowers, K.J., **N.M. Mesbah**, and J. Wiegel. 2009. Biodiversity of poly-extremophilic Bacteria: Does combining the extremes of high salt, alkaline pH and elevated temperature approach a physio-chemical boundary for life? *Saline Systems*. **5:9**

Mesbah, N.M., G.M. Cook and J. Wiegel. (2009). The halophilic alkalithermophile *Natranaerobius thermophilus* adapts to multiple environmental extremes using a large repertoire of Na⁺(K⁺)/H⁺ antiporters. *Mol. Microbiol*. 74: 270-281.

Mesbah, N.M. and J. Wiegel. (2009). *Natronovirga wadinatrunensis* gen. nov. sp. nov. and *Natranaerobius trueperi* sp. nov., two halophilic, alkalithermophilic microorganisms from soda lakes of the Wadi An Natrun, Egypt. *Int. J. Syst. Evol. Microbiol*. 59: 2042-2048.

Mesbah, N.M., D.B. Hedrick, A. Peacock, M. Rohde, and J. Wiegel. (2007) *Natranaerobius thermophilus* gen. nov. sp. nov., a halophilic, alkalithermophilic bacterium from soda lakes of the Wadi An Natrun, Egypt, and proposal of *Natranaerobiaceae* fam. nov. and *Natranaerobiales* ord. nov. *Int. J. Syst. Evol. Microbiol*. 57: 2507-2512.

Mesbah, N.M., S.H. Abou-El-Ela, and J. Wiegel. (2007) Novel and unexpected prokaryotic diversity in water and sediments of the alkaline, hypersaline lakes of the Wadi An Natrun, Egypt. *Microbial Ecol*. **54**: 598-617.

Sung, Y., K.E. Fletcher, K.M. Ritalahti, R.P. Apkarian, N. Ramos-Hernández, R.A. Sanford, **N.M. Mesbah**, and F.E. Löffler. (2005) *Geobacterlovleyi* strain SZ sp. nov., a novel metal-reducing and tetrachloroethene (PCE)-dechlorinating bacterium. Appl. Environ. Microbiol. 72:2775-2782.

BOOK CHAPTERS

Mesbah, N.M. 2023. The Wadi An Natrun lakes, Egypt: Diversity, physiology, and biotechnological potential. p. 289 – 324. In M. El-Sheekh and H.E. Elsaied (eds.), Lakes of Africa: Microbial Diversity and Sustainability, Elsevier, Amsterdam, The Netherlands.

Mesbah, N. M. 2019. *Natranaerobius*. In S. Dedysh, P. De Vos, B.P. Hedlund, P. Kampfer, F. A. Rainey, M.E. Trujillo, and W. B. Whitman (eds.), Bergey's Manual of Systematics of Archaea and Bacteria, Wiley. doi:10.1002/9781118960608.gbm01727.

Mesbah, N. M. 2019. *Natronovirga*. In S. Dedysh, P. De Vos, B.P. Hedlund, P. Kampfer, F. A. Rainey, M.E. Trujillo, and W. B. Whitman (ed.), Bergey's Manual of Systematics of Archaea and Bacteria, Wiley. doi:10.1002/9781118960608.gbm01728.

Mesbah, N. M. 2019. *Natranaerobiales*. In S. Dedysh, P. De Vos, B.P. Hedlund, P. Kampfer, F. A. Rainey, M.E. Trujillo, and W. B. Whitman (eds.), Bergey's Manual of Systematics of Archaea and Bacteria, Wiley. doi:10.1002/9781118960608.obm00162.

Mesbah, N. M. 2019. *Natranaerobiaceae*. In S. Dedysh, P. De Vos, B.P. Hedlund, P. Kampfer, F. A. Rainey, M.E. Trujillo, and W. B. Whitman (eds.), Bergey's Manual of Systematics of Archaea and Bacteria, Wiley. doi:10.1002/9781118960608.fbm00356.

Mesbah, N.M., I. Haanelt, B. Zhao and V. Muller. 2014. Microbial adaptation to saline environments: lessons learned from the genomes of *Natranaerobius thermophilus* and *Halobacillus halophilus*. p. 107-128. In R.T. Papke and A. Oren (eds), Halophiles: Genetics and Genomes. Caister Academic Press, Norfolk.

Mesbah, N.M., W.B. Whitman and M.K. Mesbah. 2011. Determination of the G+C content of bacteria. p. 299-324. In F.A. Rainey and A. Oren (eds), Methods in Microbiology, volume 38: Taxonomy of Prokaryotes. Elsevier Academic Press, London.

Mesbah, N.M. and J. Wiegel. 2011. Halophiles exposed concomitantly to multiple stressors: Adaptive mechanisms of halophilic alkalithermophiles. p. 249-273. In A. Oren, F. Rainey and Y. Ma (eds). Halophiles and Hypersaline Environments: Current Research and Future Trends, Springer, New York.

Mesbah, N. M. 2009. Genus *Halanaerobacter*. p. 1212-1215. In P. De Vos, G. Garrity, D. Jones, N. R. Krieg, W. Ludwig, F. A. Rainey, K.-H. Schleifer, and W. B. Whitman (ed.), Bergey's Manual of Systematic Bacteriology, 2nd ed, vol. 3. Springer, New York.

Mesbah, N.M. and J. Wiegel. 2008. Life at extreme limits: The anaerobic halophilic alkalithermophiles. p 44-57. In J. Wiegel, M. Adams and R. Maier (eds.), The Incredible Anaerobes: From Physiology to Genomics to Fuels". Annals of the New York Academy of Sciences, New York.

Mesbah, N.M. and J. Wiegel. 2006. Isolation, cultivation and characterization of alkalithermophiles, p 451-468. *In* F. A. Rainey and A. Oren (eds.), *Methods in Microbiology* volume 35: Extremophiles. Elsevier, London.

Mesbah, N.M. and J. Wiegel. 2005. Halophilic thermophiles: A novel group of extremophiles, p. 91-118. *In* T. Satyanarayana and B.N. Johri (eds.), *Microbial diversity: Current perspectives and potential applications*. I.K. International Publishing House Pvt. Ltd., New Delhi.

CONFERENCES:

A. ORAL PRESENTATIONS

Seminar, 2nd International Conference for the Faculty of Pharmacy, Suez Canal University “Pharmaceuticals used in internal medicine”, Ismailia, Egypt, December 8 – 9, 2019

— “Superior performance of immobilized extremozymes”

Seminar, 16th Annual Conference of the National and Biochemistry and Molecular Biology Committee “Recent Trends in Biochemistry and Molecular Biology: Towards Vision 2030”, American University in Cairo, Cairo, Egypt, September 14 – 15, 2019

— “Superior performance of immobilized extremozymes”

Seminar, 5th FUE Conference of Pharmaceutical Sciences, Cairo, Egypt, January 28 – 30, 2019

— “Halophilic, alkalithermophilic glycosidases from the Wadi An Natrun, Egypt and their biotechnological applications”

Seminar, 12th International Congress on Extremophiles (Extremophiles 2018), Ischia Island, Naples, Italy, September 16 – 20, 2018

— “Halophilic, Alkalithermophilic Glycosidases from the Wadi An Natrun, Egypt and their Biotechnological Applications”

Seminar, International Conference of Biochemistry and Molecular Biology “Biochemistry and Molecular Biology in the 21st Century: Bridges to Translational Medicine and Pharmaceutical Technology”, German University in Cairo, Cairo, Egypt, March 24 – 25, 2018

— “Heterologous Expression and Biochemical Characterization of Novel Halophilic, Alkalithermostable Glycosidases from the Hypersaline Lakes of the Wadi An Natrun, Egypt”

Seminar, 1st International Conference of Pharmaceutical and Medical Science, Faculty of Pharmacy, Suez Canal University, Cairo, Egypt, April 1 – 2, 2017

— “Purification and Characterization of Halophilic, Alkalithermophilic Amylases, Proteases and Cellulases from the Alkaline, Hypersaline Lakes of the Wadi An Natrun, Egypt”

Seminar, 4th FUE Conference of Pharmaceutical Sciences, Cairo, Egypt, January 31– February 2, 2017

— “Heterologous expression and biochemical characterization of an ionic liquid stable cellulase and its application in in situ saccharification of rice straw”

Seminar, Halophiles Conference 2016, San Juan, Puerto Rico, May 22 – 27, 2016

- “Production and characterization of halophilic, alkalithermophilic enzymes from soda lakes of the Wadi An Natrun, Egypt”

Seminar, Society for Industrial Microbiology and Biotechnology (SIMB) annual meeting and exhibition, Philadelphia, PA, USA, August 2 – 6, 2015

- “Purification and characterization of halophilic, alkalithermophilic amylases, proteases, cellulases and lipases from the alkaline, hypersaline lakes of the Wadi An Natrun, Egypt”

Seminar, Halophiles Conference 2013, Storrs, CT, USA, June 23 – 27, 2013

- “Purification and characterization of halophilic and alkaliphilic protease and an amylase from the alkaline, hypersaline lakes of the Wadi An Natrun, Egypt”

Seminar, National Conference for the Egyptian Society of Biochemistry and Molecular Biology, Cairo, Egypt, April 19 – 20, 2012

- “Purification and Biochemical Characterization of the F_1F_0 -ATPase from *Natranaerobius thermophilus*”

Seminar, Air Force Office of Scientific Research Program Review, Arlington, VA, January 20 – 21, 2009

- “Life at the edge: Elucidation of the mechanisms of how novel halophilic alkalithermophiles cope with the combined stress of high salt, alkaline pH, and elevated temperature”

Invited symposium speaker, 7th International Congress Exploring Life at High Salinity, Colchester, UK, September 2 – 6, 2007

- “Bioenergetic properties of *Natranaerobius thermophilus*, a novel anaerobic halophilic, alkalithermophilic bacterium”

Seminar, Air Force Office of Scientific Research Program Review, NSF, Arlington, VA, August 15 – 16, 2007

- Presented data and updated the review panel on progress made for the project: “Elucidation of adaptive mechanisms of triple extremophiles; the halophilic alkalithermophiles”

B. PUBLISHED ABSTRACTS / POSTER PRESENTATIONS

Abd El-Fatah, R.M., **N.M. Mesbah**, D.M. Abo-Elmatty, K.A., Aly. The C-terminus of the *Staphylococcus aureus* ESAT-6 Virulence Component EsxC is a Calcium-Dependent homodimerization domain. 1st International Conference of Pharmaceutical and Medical Sciences, Cairo, Egypt, 1 – 2 April, 2017.

Emam, R.H., M.H. Ghattas, **N.M. Mesbah**, D.M. Abo-Elmatty, E.T. Mehanna. Rs646776 polymorphism in locus 1p13 is associated with the risk of preeclampsia in Egyptian women. 1st International Conference of Pharmaceutical and Medical Sciences, Cairo, Egypt, 1 – 2 April, 2017.

Badawy, H.K., **N.M. Mesbah**, D.M. Abo-Elmatty. MicroRNA let-7e is a potential biomarker for essential hypertension. 1st International Conference of Pharmaceutical and Medical Sciences, Cairo, Egypt, 1 – 2 April, 2017.

Khattab, S.A., D.M. Abo-Elmatty, G.H. Ghattas, **N.M. Mesbah**, E.T. Mehanna. Intestinal fatty acid binding protein Ala54Thr polymorphism is associated with peripheral atherosclerosis combined with Type 2 diabetes. 1st International Conference of Pharmaceutical and Medical Sciences, Cairo, Egypt, 1 – 2 April, 2017.

Abd El-Fatah, R.M., **N.M. Mesbah**, D.M. Abo-Elmatty, K.A. Aly. The C-terminus of *Staphylococcus aureus* ESAT-6 virulence component EsxC is a calcium-dependent homodimerization domain. American Society for Microbiology 116th General Meeting, Boston, MA 16-20 June, 2016.

Wiegel, J. **N.M. Mesbah**, B. Zhao. Polyextremophilic thermophiles: Haloalkaliphilic thermophiles. 13th International Thermophiles Meeting, Santiago, Chile, August 30 – September 4, 2015.

Abdel-Hamed, A.R., **N.M. Mesbah**, D.M. Abo-Elmatty, Juergen Wiegel. Purification and characterization of a halophilic, alkalithermophilic protease from *Alkalibacillus* sp. Da2. 6th International Conference on Natural Toxins, Suez Canal University, Ismailia, Egypt, December, 2014.

Mesbah, N.M., A. Ramadan and J. Wiegel. Isolation of halophilic alkalithermophiles with industrial potential from the alkaline, hypersaline lakes of the Wadi An Natrun, Egypt. 1st Annual Young Researcher Conference, Suez Canal University, Ismailia, Egypt, March 6 – 7, 2013.

Mesbah, N.M. and J. Wiegel. Purification and biochemical characterization of the F₁F_o-ATPase from the halophilic, alkalithermophile *Natranaerobius thermophilus*. 9th International Congress on Halophilic Microorganisms, Beijing, China, 29 June – 3 July. 2010

Mesbah, N.M. and J. Wiegel. Adaptation to Multiple Extreme Growth Conditions in the Anaerobic Halophilic Alkalithermophile, *Natranaerobius thermophilus*. American Society for Microbiology 109th General Meeting, Philadelphia, PA 17 – 21 May, 2009.

Mesbah, N.M., and J. Wiegel. Adaptation to alkaline stress and osmotic stress in the anaerobic halophilic, alkalithermophile, *Natranaerobius thermophilus*. American Society for Microbiology 108th General Meeting, Boston, MA 1-5 June, 2008.

Bowers, K.J., **N.M. Mesbah** and J. Wiegel. *Natranaerobius grantii* and *Natranaerobius jonesii* spp. nov., two anaerobic halophilic alkalithermophiles isolated from the Kenyan-Tanzanian Rift. American Society for Microbiology 108th General Meeting, Boston, MA 1-5 June, 2008.

Mesbah, N.M. S.H. Abou-El-Ela and J. Wiegel. Novel and unexpected prokaryotic diversity in water and sediments of the alkaline, hypersaline lakes of the Wadi An Natrun, Egypt. 7th International Congress Exploring Life at High Salinity, Colchester, UK, 2-6 Sept. 2007.

Mesbah, N.M. and J.Wiegel. Isolation of novel halophilic, alkalithermophilic microorganisms from the alkaline, hypersaline lakes of the Wadi An Natrun, Egypt. Academy of the Environment Symposium, Athens, GA, 23 October, 2006.

Mesbah, N.M. and J.Wiegel. Isolation of novel anaerobic halophilic alkalithermophilic microorganisms of the genus “*Natronanaerobium*” from the soda lakes of the Wadi An Natrun, Egypt. American Society for Microbiology 106th General Meeting, Orlando, FL 21-25 May 2006.

Mesbah, N.M., S.H. Abou-El-Ela and J. Wiegel. Molecular analysis of the prokaryotic community from the soda lakes of the Wadi An Natrun, Egypt. Ninth International Conference for the Society of Salt Lake Research. Perth, Australia, 26-30 September 2005.

Mesbah, N.M., S.H. Abou-El-Ela and J. Wiegel. Isolation of novel anaerobic halophilic alkalithermophilic microorganisms from the soda lakes of the Wadi An Natrun, Egypt. Eighth International Thermophiles Conference. Queensland, Australia, 18-22 September, 2005.

Mesbah, N.M., J.M. Fiser, C.L. Zhang, C.S. Romanek, G. Mills and J. Wiegel. Isolation of novel halophilic alkalithermophilic microorganisms from salt flats of Northern Nevada. International Workshop “Biodiversity, Molecular Biology and Biogeochemistry of Thermophiles”. Paratunca, Kamchatka (Russia), 21-25 August, 2005.

Mesbah, N.M., S.H. Abou-El-Ela and J. Wiegel. Diversity of the Egyptian soda lakes of the Wadi An Natrun assessed by molecular methods. American Society for Microbiology 105th General Meeting. Atlanta, GA, 5-9 June 2005.

Mesbah, N.M., P. Maurizio, C. L. Zhang, C.S. Romanek, G. Mills and J. Wiegel. Isolation of halophilic thermophilic ‘*Caloramator halophilus*’ sp. nov. from salt flats of Northern Nevada. American Society for Microbiology 105th General Meeting. Atlanta, GA, 5-9 June 2005.

C. ATTENDANCE

13th International Congress on Extremophiles (Extremophiles 2022), Loutraki, Greece, September 18 – 22, 2022

Virtual conference “The 7th International Euro-Mediterranean Conference of Life Sciences, Pharmacy and Biomedicine BioNat-7”, October 6 – 7, 2021

Virtual conference “17th International Conference of National Committee of Biochemistry and Molecular Biology ‘Covid-19: Preparing for the Next Pandemic’”, September 14 – 15, 2021.

Symposium “Recent Trends in Cancer Biology and Treatment”, Children’s Cancer Hospital 57357, Cairo, February 15, 2020

The 6th BioKMT Research Network “Roadmap and Invigorating Scientific Research in Egypt”, Academy of Scientific Research and Technology, Cairo, December 21, 2019

15th International Conference on Thermophiles (Thermophiles 2019), Kyushu University, Fukuoka, Japan, September 2 – 6, 2019

2nd Suez Canal University Conference on Clinical Pharmacy, Faculty of Pharmacy, Suez Canal University, November 20, 2018

Biovision Alexandria 2018, Bibliotheca Alexandria, Alexandria, Egypt, April 20 – 22, 2018

1st Suez Canal University Conference on Clinical Pharmacy, Faculty of Pharmacy, Suez Canal University, November 25, 2017

2017 Society for Industrial Microbiology and Biotechnology (SIMB) Annual Meeting and Exhibition, Denver, CO USA, July 30 – August 3, 2017

4th Young Researcher's Conference "Community Oriented Scientific Research", Suez Canal University, April 29-30, 2017

3rd Young Researchers Conference "Quality, Excellence and Sustainability", Suez Canal University, May 6 – 7, 2016

3rd Annual Conference of the Medical Biochemistry and Molecular Biology Department, Kasr Al Ainy School of Medicine (Biochem Cairo), 12 March, 2016

4th International Conference on Natural Toxins, Ismailia, Egypt, December 20 – 22, 2010

3rd Scientific Conference of Medical Biochemistry Department, Faculty of Medicine, Mansoura University, Mansoura, Egypt, 11 – 12 November 2010

1st Pharmaceutical Development Conference, Sinai University, October 6 – 8, 2010

WORKSHOPS AND COURSES

Attended special module entitled "Universities of Applied Sciences. Concept, Practice, Orientation, and Industrial Links". DAAD Kairo Akademie, Conrad Hotel Cairo, March 6 – 7, 2023.

Attended special module entitled "Are you well positioned for International Cooperation? From Internationalization Strategy to the Structures of an International Office." DAAD Kairo Akademie, Conrad Hotel Cairo", December 14 – 15, 2022.

Attended special module entitled "How to Strengthen the Employability of Egyptian Graduates", DAAD Kairo Akademie, Marriott Hotel, Zamalek, Cairo, July 18 – 19, 2022.

Attended online seminar/workshop entitled: "Systematic Reviews and Meta-analyses", Nature Research Academies in collaboration with Egyptian Knowledge Bank, February 19, 2021.

Attended online seminar/workshop entitled: "Communicating Science to the Public", Nature Research Academies in collaboration with Egyptian Knowledge Bank, February 8, 2021.

Attended online seminar/workshop entitled: “Journal Editor 2”, Nature Research Academies in collaboration with Egyptian Knowledge Bank, January 8, 2021.

Attended online seminar/workshop entitled: “Journal Editor 1”, Nature Research Academies in collaboration with Egyptian Knowledge Bank, December 17, 2020.

Attended online seminar/workshop entitled: “Successful Grant Applications with Funding Institutional – Real Examples and Supporting Tools”, Researcher Academy on Campus (Elsevier) in collaboration with Egyptian Knowledge Bank, October 26, 2020.

Attended workshop entitled: “Clinical Research Methodology”, Nature Research Academies in collaboration with Egyptian Knowledge Bank, Faculty of Pharmacy, Suez Canal University, October 16, 2019.

Attended seminar entitled: “University Teacher Support”, Higher Education Reform Experts (HEREs) – National Erasmus Office, Faculty of Engineering, Ain Shams University, July 25, 2019.

Attended workshop entitled: “Student-Centered Learning in Practice”, Higher Education Reform Experts (HEREs) – National Erasmus Office, Faculty of Engineering, Cairo University, February 27 – 28, 2019.

Attended workshop entitled: “Constructive Assessment for Learning”, DAAD Kairo Akademie, Suez Canal University, February 18, 2019.

Attended workshop entitled: “Managing Innovation in Academia; Institutional Development” DAAD Kairo Akademie, Suez Canal University, March 6, 2018.

Attended workshop entitled: “Pre-Empting and Managing Conflict”, DAAD Cairo Regional Office, February 8, 2018.

Attended DIES workshop entitled: “Evolution of Entrepreneurial Universities in the MENA Region”, Steigenberger Hotel, Cairo, Egypt, November 15 – 16, 2017.

Attended workshop entitled: “Research Ethics and Methodology”, Faculty of Pharmacy, Suez Canal University, October 16, 2017

Attended course entitled: “National and International Collaboration, Funding Resources and Contractual Obligations” Academy of Scientific Research and Technology, Technology Innovation and Commercialization Offices, March 15 - 16, 2017.

Attended workshop entitled: “Researcher Connect: Foundation module; effective e-mails; persuasive proposals; academic collaboration”, British Council in coordination with the Technology Innovation and Commercialization Office, Suez Canal University, March 7 – 9, 2017

Attended workshop entitled: “Responsible Conduct of Research, How to avoid plagiarism, falsification and fabrication”, Technology Innovation and Commercialization Office, Suez Canal University, May 10, 2016

Attended course entitled: “From Research Laboratory to Market, Putting it all Together” Academy of Scientific Research and Technology, Technology Innovation and Commercialization Offices, October 21 – 26, 2015.

Attended workshop entitled: “Teaching and Learning Strategies”, Faculty of Pharmacy, Suez Canal University, October 13, 2015

Attended course entitled: “Preparing a Winning Proposal”, Academy of Scientific Research and Technology, Technology Innovation and Commercialization Offices, April 29 – 30, 2015

Attended 2nd MENA Educational Institute on Responsible Science, Trieste, Italy, May 7 – 12, 2014

Attended workshop entitled: “New Trends of Preventing Public Food Poisoning Nationwide”, Faculty of Pharmacy, Suez Canal University, March 2013

Participated as lecturer in workshop “Principles of Biotechnology and Genetic Engineering and its Applications”, Biotechnology Research Center, Suez Canal University, May 4 – 6, 2010

Attended workshop on use of computer databases and bioinformatics, Suez Canal University, Ismailia, Egypt, November 24 – 25, 2009

Attended “Manual Genome Annotation Workshop”, OakRidge National Laboratory, OakRidge, TN, August 2006

PROFESSIONAL MEMBERSHIPS

Pharmaceutical Society of Egypt

Egyptian Society for Biochemistry and Molecular Biology

International Society for Extremophiles