

Gamila Shanab

Professor

Department of Biochemistry
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EDUCATION

- Ph.D., Department of Biochemistry, North Carolina State University (NCSU), Raleigh NC, USA, December 1991.
Dissertation: Structure and intermolecular hybridization characteristics of mouse U14 small nuclear RNA.
- M.Sc., Department of Biochemistry, Faculty of Science, Ain Shams University, Cairo, Egypt, May 1984.
Thesis: Biochemical studies on prostaglandins and prostaglandin-like substances.
- B.Sc. (Honors), Department of Biochemistry, Faculty of Science, Ain Shams University, Cairo, Egypt, May 1978.

PROFESSIONAL BACKGROUND

- *Professor Emeritus*, 2017-present, Department of Biochemistry, Ain Shams University.
- *Professor*, 2015-2017, Department of Biochemistry, Ain Shams University.
- *Associate Professor*, 2003-2015, Department of Biochemistry, Ain Shams University.
- *Lecturer*, 1991-2003, Department of Biochemistry, Ain Shams University.
- *Assistant Lecturer*, 1984-1991, Department of Biochemistry, Ain Shams University.
- *Instructor (teaching/research assistant)*, 1978-1984, Department of Biochemistry, Ain Shams University.

AWARDS AND FELLOWSHIPS

- The Fulbright Senior Scholar Grant, academic year 1997-1998.
- The Anne A.J. Work Memorial Award, in recognition of outstanding graduate scholastic achievement in Biochemistry, by the Biochemistry Faculty of NCSU, January 1992.
- Phi Lambda Upsilon Honorary Chemical Society Membership, by the Beta Lambda Chapter of North Carolina, April 1987.
- The American Association of University Women (AAUW) International Fellowship for academic year 1985-1986.

INTERNATIONAL JOURNAL PUBLICATIONS

- Algharib, Ali Samy; Shanab, Gamila Mohamed-Labib; Abdel-Ghaffar, Abdel-Rahman Badr; Ismail, Mohamed Ahmed and Mohamed, Rania Hassan (2022). Bithiophene derivative induced apoptosis and suppression of Akt pathway in mouse leukemic model. *Tumor Biology* 44 (1):53-67
- Rabab Khairat, Markus Ball, Chun-Chi Hsieh Chang, Raffaella Bianucci, Andreas G. Nerlich, Martin Trautmann, Somaia Ismail, Gamila M. L. Shanab, Amr M. Karim, Yehia Z. Gad and Carsten M. Pusch (2013). First insights into the metagenome of Egyptian mummies using next-generation sequencing. *J Appl Genetics* 54(3): 309 – 325
- Ragheb R, Shanab G, Medhat A, Seoudi D, Adeli K and Fantus IG. (2009). Free fatty acid-induced muscle insulin resistance and glucose uptake dysfunction: evidence for PKC activation and

- oxidative stress-activated signaling pathways. *Biochem Biophys Res Commun.* 389(2): 211-216.
- Rafik Ragheb, Amina Medhat, Gamila Shanab, Dina M. Seoudi and Fantus I.G. (2009). Prolonged Treatment with Free Fatty Acids has Post Receptor Effect in Hepatic Insulin Resistance: Evidence that Fatty Acids, Oleate and Palmitate have Insignificant Effect on the Insulin Receptor Beta *In Vivo* and *Ex Vivo* Primary Hepatocytes. *Biochemistry Insights.*2: 29–36.
 - Ragheb, R., Medhat, A., Shanab, G. and Seoudi, D. (2008). Links between enhanced fatty acid flux, protein kinase C and NFκB activation, and lipoprotein production in the fructose fed hamster model of insulin resistance. *Biochem Bioph Res Comm* 23;370 (1):134-9.
 - Essawi, M.L., Effat, L.K., Shanab, G., Metwalli, G.M., el-Harouny, A.A. and Karim, A.M. (2007). Molecular analysis of SMN1 and NAIP genes in Egyptian patients with spinal muscular atrophy. *Bratisl Lak Listy*, 108 (3):133-137.
 - Jwanny, E.W., Salem, A.H., Shanab, G. and Rasmy, G.E. (2004). Improved lipid lowering activity of fibrates in combination with fish oil ethyl esters in hypertriglyceridemic hamsters. *Advances in Food Science*, 26 (4): 159-167.
 - El-Sayed M.H., Shanab, G., Karim, A.M., el-Tawil, A., Black, A. and Dixon, J.S. (2004). Lamivudine facilitates optimal chemotherapy in hepatitis B virus-infected children with hematological malignancies: a preliminary report. *Pediatr Hematol Oncol* 21(2):145-56.
 - Newman, D., Kuhn, J., Shanab, G., and Maxwell, E.S. (2000). Box C / D snoRNA-associated proteins: two pairs of evolutionarily ancient proteins and possible links to replication and transcription. *RNA.* 6: 861-879.
 - Shanab, G., Zahran, M., Abdallah, T. and Abdallah, N. (2000). Association of hepatitis C virus infection with anti-smooth muscle antibody (SMA) and rheumatoid factor (RF). *Egyptian J of Biochemistry* 18 (2 special issue): 17-30.
 - Shanab, G. & Maxwell, E.S. (1992). Determination of the nucleotide sequences in mouse U14 small nuclear RNA and 18S ribosomal RNA responsible for *in vitro* intermolecular base pairing. *Eur. J. Biochem.* 266: 391-400.
 - Shanab, G. & Maxwell, E.S. (1991). Proposed secondary structure of U14 snRNA. *Nucleic Acids Res.* 19: 4891-4894.

NATIONAL JOURNAL PUBLICATIONS

- Ghada M.M. Al-Ettribi, Laila K. Effat, Hala T. El-Bassyouni, Maha S. Zaki, Gamila Shanab, Amr M. Karim (2013). Clinical and molecular findings in eight Egyptian patients with suspected mitochondrial disorders and optic atrophy. *The Egyptian Journal of Medical Human Genetics* 14: 37–47
- Ghada M.M. Al-Ettribi, Laila K. Effat, Hala T. El-Bassyouni, Maha S. Zaki, Gamila Shanab, Amr Karim (2012). Screening seven common mitochondrial mutations in 28 Egyptian patients with suspected mitochondrial disease. *Middle East Journal of Medical Genetics* 2(1): 28-37
- Osman A.A., ElTelbany M.A.S., El Alfy M.S., Shanab, G.M.L., Nagy N.E. and Fayek M.H. (2010). The value of Tcell receptor gamma gene rearrangements in childhood acute lymphoblastic leukemia: A target for minimal residual disease detection. *Arab J Lab Med.* 36(2): 165-181.
- Rania M. I. Abou Ali, Gamila M. L. Shanab, A. S. El-din Haider, Hala F. Eissa and A. M. Salem (2010). Characterization and expression of abscisic acid inducible gene(s) in wild legumes. *Egypt. J. Genet. Cytol.*, 39: 57-71.
- Shanab, G., Mansour, M.T., Raafat, A.M. and Abdallah, N.M. (2002). HBeAb is a better serological marker than HBsAg for HBV infection in Egyptian patients with *S. mansoni*. *Journal of Egyptian Academic society for Environmental Development (C-Molecular Biology)* 2 (1): 67-87.
- Shanab, G., Helela, L., Sanad, H., Saleh, N., and Abou Gamrah, S. (2002). The possible therapeutic effects of inhaled nebulized recombinant interferon alpha on bronchial asthmatic patients. *The Egyptian Journal of Immunology*, 9: 51-61.

- Sabry, F.H., El-Danasoury, A.S., El-Kerdany, T.A., Hashem A.S. and Shanab, G. (2001). TEL/AML-1 fusion transcript in childhood acute lymphoblastic leukemia. *Egyptian J of Haematology*. 26(2): 403-424.

INTERNATIONAL CONFERENCE PARTICIPATIONS

- Ragheb, R., Medhat, A., Shanab, G., Seoudi, D., Fantus I.G. and Adeli K. "Evidence for a role of oxidative stress activated signaling pathways in mediating muscle insulin resistance and glucose uptake dysfunction". *The 7th Annual World Congress of the Insulin Resistance Syndrome*. 2009. San Francisco, California, USA.
- Ragheb, R., Medhat, A., Shanab, G., Seoudi, D., Fantus I.G. and Adeli K. " Prolonged treatment with free fatty acids has post receptor effect in hepatic insulin resistance: Evidence that fatty acids, oleate and palmitate have insignificant effect on the insulin receptor beta *in vivo* and *ex vivo* primary hepatocytes. *The 6th Annual World Congress of the Insulin Resistance Syndrome*. , 2008. Los Angeles, California, USA.
- Ragheb, R., Medhat, A., Shanab, G., Seoudi, D., Fantus I.G. and Adeli K. " Free fatty acids - induced PKC and NFκB activation as a mechanism for both insulin resistance and dyslipidemia in the fructose fed hamster model of insulin resistance". *The 5th Annual World Congress of the Insulin Resistance Syndrome*. October 11-13, 2007. Boston, Massachusetts, USA.
- Ragheb, R., Medhat, A., Shanab, G. and Seoudi, D., Fantus I.G. and Adeli K. "Different free fatty acids (FFAs)-induced serine 307 phosphorylation for IRS-1 as a novel mechanism for skeletal muscle insulin resistance". *The 5th Annual World Congress of the Insulin Resistance Syndrome*. October 11-13, 2007. Boston, Massachusetts, USA.
- Ragheb, R., Medhat, A., Shanab, G., Seoudi, D., Fantus I.G. and Adeli K. "Free fatty acids (FFAs) - induced PKC and NFκB activation, two key events in two different models for insulin resistance, the skeletal muscle and liver". *The 4th Annual World Congress of the Insulin Resistance Syndrome*. October 5-7, 2006. Las Vegas, Nevada, USA.
- El-Sayed, M.H., Shanab, G., Karim, A., Roopram, P. and Black, A. "Lamivudine facilitates chemotherapy in children with haematological malignancies and chronic HBV (CHB)." *36th Annual Meeting of the European Association for the study of the Liver*. April 18-22, 2001. Prague, Czech Republic.
- Newman, D., Kuhn, J., Shanab, G., and Maxwell, E.S. "The U14 snoRNP complex possesses three core proteins of 50, 55, and 65kDa: a model for the box C/D snoRNPs". *RNA '98. The third Annual Meeting of the RNA Society*. May 26-31, 1998. University of Wisconsin, Madison, WI.
- Shanab, G. & Maxwell, E.S. "Proposed secondary structure of eukaryotic U14 snRNA". *Cold Spring Harbor Meeting on RNA Processing*. May 15-19, 1991. Cold Spring Harbor, New York.
- Shanab, G. & Maxwell, E.S. "Mouse 4.5S hyb RNA utilizes its evolutionarily conserved 3'end for intermolecular hybridization with 18S rRNA". *Cold Spring Harbor Meeting on RNA Processing*". May 17-21, 1989. Cold Spring Harbor, New York.
- Maxwell, E.S., Trinh-Rohlik, Q., and Shanab, G. "Expression, gene organization and cellular distribution of mouse 4.5S hybrid RNA (hyb RNA)". *5th Annual Stony Brook Symposium on the Molecular Biology of RNA*. May 19-21, 1986. Stony Brook, New York.

NATIONAL CONFERENCE PARTICIPATIONS

- Shanab, G., Abd el-Kader, N., el-Dardiri, Z. and el-Sheikh, N. "Serological diagnosis of Tuberculosis using a cocktail of immunodominant antigens from Mycobacterium tuberculosis". *The 10th Annual Conference of the Egyptian Association of Immunologists*. November 23-25, 2005. Mansoura, Egypt.
- El-Lakany, N.M., Hanalah, S.B., Moussa, M.M., Mahmoud, S., Shanab, G., Karim A.M and Botros, S.S. " Possible restoration of praziquantel efficacy in mice harbouring praziquantel-insensitive *S.mansoni* isolate using combined treatment of PZQ and immunotherapy". *The International Conference of Theodor bilharz Research Institute*. March 23-25, 2002. Cairo, Egypt.

ACADEMIC & TEACHING EXPERIENCE

▪ *Program coordinator*

- Diploma of Molecular Biology: Academic years 2000 to 2021
- Diploma of Molecular Biology & Molecular Diagnostics: Academic years 2022 till present.

▪ *Course Instructor*

- BIOC 514: Gene Expression, advanced course for Molecular Biology & Molecular Diagnostics Diploma, [new credit hour system]. Department of Biochemistry, Faculty of Science, Ain Shams University. Spring 2023 & 2024
- BIOC 521: DNA Forensics, advanced course for Molecular Biology & Molecular Diagnostics Diploma, [new credit hour system]. Department of Biochemistry, Faculty of Science, Ain Shams University. Fall 2022 & 2023
- BIOC 405: Molecular Biology 2, course for Biochemistry major and Biochemistry/Chemistry double major, [new credit hour system]. Department of Biochemistry, Faculty of Science, Ain Shams University. Fall 2019 to 2025
- CHM 315: General Biochemistry, an introductory course for Chemistry and Biology majors, American University in Cairo. Fall 2001, 2010, 2011 and 2012
- BIOCH 404: Molecular Biology & Genetic Engineering, an introductory course for Biochemistry/Chemistry double major, Department of Biochemistry, Faculty of Science, Ain Shams University. Spring 2005 to 2013 [Genetic engineering part]
- BIOCH 404: Molecular Biology & Genetic Engineering, an introductory course for Biochemistry/Chemistry double major, Department of Biochemistry, Faculty of Science, Ain Shams University. Spring 2014 to 2020 [Molecular Biology part].
- BIOCH 412: Molecular Biochemistry, an introductory course for Biochemistry/Microbiology double major, Department of Biochemistry, Faculty of Science, Ain Shams University. Spring 2005, 2006, 2007, 2018 to 2020
- BIOCH 307: Nucleic Acids Metabolism, an introductory course for Biochemistry major, Department of Biochemistry, Faculty of Science, Ain Shams University. Spring 2008 to 2010
- BIOCH 516: Biological Information Transfer, an advanced course for Molecular Biology Diploma, Department of Biochemistry, Faculty of Science, Ain Shams University. Academic years: 2001 to 2014.
- BIOCH 515: DNA structure, Organization and Replication, an advanced course for Molecular Biology Diploma, Department of Biochemistry, Faculty of Science, Ain Shams University. Academic years 2000-2001, then from 2014 to 2021.
- BIOCH 340: Molecular Biology, an introductory course for Biophysics major, Department of Physics, Faculty of Science, Ain Shams University. Fall 1999 to 2002 and Fall 2013.

SCIENTIFIC REVIEW COMMITTEES

- Reviewer for applicants in the field of Molecular Biology for the AY 2009-2010 International Fulbright Science and Technology (IFST) Award.
- Member of the Selection Committee for the Fulbright Egyptian Scholar Program in the field of Biology and Agriculture, December 2009
- Member of the Selection Committee for the Fulbright Egyptian Student Program in the fields of Basic Science in Biochemistry, Chemistry and Pharmacy, September 2006 & 2007

LANGUAGES

- Arabic: mother tongue
- English/French: proficient