



Suez Canal University
Faculty of Veterinary Medicine
Dep. of Cytology and Histology

CURRICULUM VITAE

PERSONAL INFORMATION:

- ❖ **Name:** Elsayed Metwally Mahmoud Metwally.
- ❖ **Date of Birth:** 04/01/1987.
- ❖ **Place of Birth:** Egypt.
- ❖ **Citizenship:** Egyptian.
- ❖ **Passport:** A24920943.
- ❖ **Mobile:** +20-1099398979
- ❖ **Marital Status:** Married.
- ❖ **E-mail:** elsayedalfey@vet.suez.edu.eg
- ❖ **Current Address:** Department of Cytology and Histology, Faculty of Veterinary Medicine Suez Canal. University, Ismailia 41522, Egypt.
- ❖ **Websites:** Elsayed Metwally_vet.staff.scuegypt.edu.eg& <https://orcid.org/0000-0002-7471-3148>& https://www.researchgate.net/profile/Elsayed_Metwally.



EDUCATION:

Ph.D. (Neurobiology), China, 2013-2017

- State Key Laboratory for Molecular and Developmental Biology, CAS Center for Excellence in Brain Science and Intelligence Technology, Institute of Genetics and Developmental Biology (IGDB), Chinese Academy of Sciences (CAS), China.
- Supervisor: Prof. Yong Q. Zhang.
- Title: Ttm50 interacts with calpain and facilitates its proteolytic activity against glutamate receptors.

M.V.Sc. (Cytology and Histology), Egypt, 2009-2012

- Faculty of Veterinary Medicine, Suez Canal University, Egypt.
- Title: Prenatal Development of the Camel's Retina with Special Reference to the Histochemistry of Photoreceptors.



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B.V.Sc. (Veterinary Medical Sciences), Egypt, 2004-2009

- Faculty of Veterinary Medicine, Suez Canal University, Egypt.

ACADEMIC POSITIONS:

Lecturer of Cytology and Histology, Egypt, 2017 to present

- Cytology and Histology Department, Faculty of Veterinary Medicine, Suez Canal University, Egypt.
- Tasks: Teaching the practical and theoretical courses of Cytology and Histology to undergraduate and postgraduate students.

Research Scholar, USA, 07/2022

- University of Nevada, Reno (UNR), School of Medicine, United States of America (USA) from 26/06/2022
- Tasks: Research fellow at Scott Earley Laboratory, to study the molecular mechanisms underlying small cerebral vessel diseases in mice model.

Postdoctoral fellow, China, 2018-2020, PIFI Fellowship

- State Key Laboratory for Molecular and Developmental Biology, CAS Center for Excellence in Brain Science and Intelligence Technology, Institute of Genetics and Developmental Biology, Chinese Academy of Sciences.
- CAS President's International Fellowship Initiative (PIFI).
- Tasks: Research fellow at Yong Q. Zhang Laboratory, to study the molecular mechanisms underlying calpain regulation using *Drosophila* as a model system.

Doctoral fellow, China, 2013-2017

- State Key Laboratory for Molecular and Developmental Biology, CAS Center for Excellence in Brain Science and Intelligence Technology, Institute of Genetics and Developmental Biology, Chinese Academy of Sciences.
- Tasks: Ph.D. fellow at Yong Q. Zhang Laboratory, to study the molecular mechanisms underlying glutamate receptors using *Drosophila* as a model system.



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Assistant Lecturer, Egypt, 2012-2013

- Cytology and Histology Department, Faculty of Veterinary Medicine, Suez Canal University.
- Tasks: Teaching the practical courses of Cytology and Histology to undergraduate students.

Demonstrator, Egypt, 2009-2012

- Cytology and Histology Department, Faculty of Veterinary Medicine, Suez Canal University.
- Tasks: Preparation of a master thesis in addition to working as a technician in the Histo-lab for the preparation of the histology and embryology slide sets.

RESEARCH INTEREST:

- Taking an interdisciplinary approach including biochemical, molecular, and genetic methods to study synapse development, structure, and function, using *Drosophila*, mice, and dog as a model system.
- Study mechanisms underlying glutamate receptor regulation at synapses.
- Study mechanisms underlying calcium-dependent protease calpain regulation.
- Interested in finding new pathways involved in axon degeneration/regeneration after injury.
- Dissecting the molecular mechanisms underlying small cerebral vessel diseases in mice model

TECHNIQUES APPLIED:

- **Cell culture:** (S2 cells and human cells).
- **Animal handling:** Expert in *Drosophila* and mice genetics.
- **Molecular biology:** Isolation of DNA, RNA, and Proteins from cell lines and animal tissues Reverse Transcriptase-PCR, Quantitative Real Time-PCR, SDS-PAGE and Western blotting, Colorimetric assays, and Knockdown of the gene using si-RNA, site-directed mutagenesis.
- **Microscopy:** Light, Immuno-fluorescence, and confocal microscopy.
- **Histology:** Immunohistochemistry, Immunocytochemistry, and calcium imaging.



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- **Protein biochemistry and biophysical techniques:** Protein/protein interaction by immunoprecipitation (IP) and Co-IP. Recombinant protein production; Purification of GST and His tag proteins (GST and Ni-NTA column), Sub-cellular fractionation.
- **Computer and other skills:** Windows, Microsoft Office, Various bioinformatics tools like BLAST, FASTA, PubMed tools, Endnote, GraphPad Prism software, Densitometric analysis using Image J.
- **Writing and editing research proposals and manuscripts**

TRAINING COURSES:

- University administration- Faculty members and leaders Development Center (FLDC) Suez Canal University (SCU).
- Effective teaching (FLDC) (SCU).
- The use of technology in teaching (FLDC) (SCU)
- Mini teaching (UEDC) (SCU).
- International publication (FLDC) (SCU).
- Ethics of scientific research (FLDC) (SCU).
- International scientific publishing- (FLDC) (SCU).
- How to link bio-safety and security- Animal Research Institute, Ismailia.
- Preparation course for the English language- Language Center (SCU).
- ICDL course computer- Ministry of Communications, Egypt.
- Workshop on writing research project- The German organization DAAD – Cairo.
- Workshop on the digital library and scientific journals (FLDC) (SCU).
- Workshop Endnote training course (FLDC) (SCU).
- Strategic planning in education (FLDC) (SCU).
- Building scientific courses (FLDC) (SCU).
- Responsible behavior in the university (FLDC) (SCU).
- The use of credit hours in university (FLDC) (SCU).



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- Data Analysis and Interpretation, Egyptian Knowledge Bank.
- How to select novel research points, Egyptian Knowledge Bank.
- How to design your scientific experiments, Egyptian Knowledge Bank
- Preventing Harassment & Discrimination, UNR, USA.
- CITI - Collaborative Institutional Training Initiative, UNR, USA.
- Laboratory Biosafety Training, UNR, USA.

MEMBERSHIPS

- Syndicate of the Egyptian Veterinarians, 2009 to present.
- Society for Neuroscience: Washington D.C., District of Columbia, USA. 2019
-Regular member.

AWARDS

- CAS President's International Fellowship Initiative (PIFI) award for postdoctoral studies in 2018.
- Institute of Genetics and Developmental Biology (IGDB) award for the best postdoctoral researcher in 2020 (Honorary credential).
- International publication award from Suez Canal University (SCU) in 2019, 2020 and 2021.

ORAL/POSTER PRESENTATION

- **Poster** at the 6th FAONS Congress and the 11th Biennial Conference of CNS, China, 2015.
- **Poster** at 4th Asia-Pacific Drosophila Research Conference, APDRC4, Japan, 2017.



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- **Speaker** at the annual *Drosophila* meeting at Pecking University, China, 2017.
- **Poster** at Asia Pacific *Drosophila* Neuroscience Conference, Academia Sinica, Taiwan, 2019.
- **Speaker** at the 44th Annual Conference of the Egyptian Society of Histology & Cytology, Egypt, 2020.
- **Speaker** at the virtual 18th European neurobiology conference -Neurofly, 2021, Spain.

PUBLICATIONS: (<https://orcid.org/0000-0002-7471-3148>)

(2022)

- ❖ **Metwally, E.,** Al-Abbadi, H.A., Hashem, M.A., Mahmoud, Y.K., Ahmed, E.A., Maaty, A.I., Helal, I.E., and Ahmed, M.F. (2022). Selective Calpain Inhibition Improves Functional and Histopathological Outcomes in a Canine Spinal Cord Injury Model. [International Journal of Molecular Sciences](https://doi.org/10.3390/ijms231911772). <https://doi.org/10.3390/ijms231911772>.
- ❖ Hendawy, H., **Metwally, E.,** Elfadadny, A., Yoshida, T., Ma, D., Shimada, K., Hamabe, L., Sasaki, K., Tanaka, R.J.B., and Pharmacotherapy (2022). Cultured versus freshly isolated adipose-derived stem cells in improvement of the histopathological outcomes in HCL-induced cystitis in a rat model. [Biomedicine & Pharmacotherapy](https://doi.org/10.1016/j.biopha.2022.113422). <https://doi.org/10.1016/j.biopha.2022.113422>.
- ❖ Hendawy, H., Kaneda, M., Yoshida, T., **Metwally, E.,** Hamabe, L., Yoshida, T., Shimada, K., & Tanaka, R. (2022). Heterogeneity of adipose stromal vascular fraction cells from the different harvesting sites in rats. [Anatomical Record](https://doi.org/10.1002/ar.24915), American Association for Anatomy. <https://doi.org/10.1002/ar.24915>.
- ❖ Ahmed, M.F., **Metwally, E.,** Mahmoud, Y.K., Abuzeid, S.M., El-Daharawy, M.H., and Hashem, M.A. (2022). Augmentation cystoplasty in dogs: A comparative study of different tunica vaginalis grafts. [Veterinary and Animal Science](https://doi.org/10.1016/j.vas.2022.100247). <https://doi.org/10.1016/j.vas.2022.100247>.



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- ❖ Farouk, S.M., Abdellatif, A.M., and **Metwally, E.** (2022). Outer and inner mitochondrial membrane proteins TOMM40 and TIMM50 are intensively concentrated and localized at Purkinje and pyramidal neurons in the New Zealand white rabbit brain. *Anatomical Record*, American Association for Anatomy. <https://doi.org/10.1002/ar.24689>.

(2021)

- ❖ **Metwally, E.**, Zhao, G. and Zhang, Y.Q. (2021). The calcium-dependent protease calpain in neuronal remodeling and neurodegeneration. *Trends in Neurosciences*, Cell Press. <https://doi.org/10.1016/j.tins.2021.07.003>.
- ❖ **Metwally, E.**, Zhao, G., Wang, Q. and Zhang, Y.Q. (2021). Ttm50 facilitates calpain activation by anchoring it to calcium stores and increasing its sensitivity to calcium. *Cell Research*, Nature Publishing Group. <https://doi.org/10.1038/s41422-020-0388-4>.
- ❖ Hussain, T., Wang, J., Murtaza, G., **Metwally, E.**, Yang, H., Kalhoro, M.S., Kalhoro, D.H., Rahu, B.A., Tan, B., Sahito, R.G.A., et al. (2021). The Role of Polyphenols in Regulation of Heat Shock Proteins and Gut Microbiota in Weaning Stress. *Oxidative Medicine and Cellular Longevity*. <https://doi.org/10.1155/2021/6676444>.
- ❖ Hussain, T., Murtaza, G., **Metwally, E.**, Kalhoro, D.H., Kalhoro, M.S., Rahu, B.A., Sahito, R.G.A., Yin, Y., Yang, H., Chughtai, M.I., et al. (2021). The Role of Oxidative Stress and Antioxidant Balance in Pregnancy. *Mediators of Inflammation*. <https://doi.org/10.1155/2021/9962860>.
- ❖ Hendawy, H., Kaneda, M., **Metwally, E.**, Shimada, K., Tanaka, T., and Tanaka, R. (2021). A Comparative Study of the Effect of Anatomical Site on Multiple Differentiation of Adipose-Derived Stem Cells in Rats. *Cells*. <https://doi.org/10.3390/cells10092469>.



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- ❖ Hussain, T., Murtaza, G., Kalhoro, D.H., Kalhoro, M.S., **Metwally, E.**, Chughtai, M.I., Mazhar, M.U., and Khan, S.A. (2021). Relationship between gut microbiota and host-metabolism: Emphasis on hormones related to reproductive function. *Animal Nutrition*. <https://doi.org/10.1016/j.aninu>.

(2020)

- ❖ Zhao, K., Hong, H., Zhao, L., Huang, S., Gao, Y., **Metwally, E.**, Jiang, Y., Sigrist, S.J., and Zhang, Y.Q. (2020). Postsynaptic cAMP Signalling Regulates the Antagonistic Balance of Glutamate Receptor Subtypes. *Development*, Company of Biologists. <https://doi.org/10.1242/dev.191874>.
- ❖ Hussain, T., Tan, B., Murtaza, G., **Metwally, E.**, Yang, H., Kalhoro, M.S., Kalhoro, D.H., Chughtai, M.I., and Yin, Y. (2020). Role of Dietary Amino Acids and Nutrient Sensing System in Pregnancy Associated Disorders. *Frontiers in pharmacology*. <https://doi.org/10.3389/fphar.2020.586979>.

(2019)

- ❖ **Metwally, E.**, Zhao, G., Li, W., Wang, Q., and Zhang, Y.Q. (2019). Calcium-Activated Calpain Specifically Cleaves Glutamate Receptor IIA But Not IIB at the Drosophila Neuromuscular Junction. *The Journal of Neuroscience*, Society for Neuroscience. <https://doi.org/10.1523/jneurosci.2213-17.2019>.
- ❖ **Metwally, E.**, Farouk, S.M., Hossain, M.S., and Raihan, O. (2019). Expression of glial cells molecules in the optic nerve of adult dromedary camel (*Camelus dromedarius*): A histological and immunohistochemical analysis. *Anatomia, Histologia, Embryologia*. <https://doi.org/10.1111/ah.12413>.
- ❖ Metwally, E., Farouk, S.M., and Osman, A.K. (2019). Molecular cloning and cellular expression of the cholesterol synthesizing enzymes during the prenatal development of the optic nerve in the dromedary camel (*Camelus Dromedarius*). *Acta Histochemica*. <https://doi.org/10.1016/j.acthis.2019.05.001>.



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- ❖ Ismail, M., Wahdan, A., Yusuf, M.S., **Metwally, E.**, Mabrok, M. (2019). Effect of dietary supplementation with a synbiotic (Lacto Forte) on growth performance, haematological and histological profiles, the innate immune response and resistance to bacterial disease in *Oreochromis niloticus*. [Aquaculture Research](https://doi.org/10.1111/are.14212). <https://doi.org/10.1111/are.14212>.

PEER REVIEW JOURNALS

- ❖ Cells
- ❖ The Anatomical Record
- ❖ Biology
- ❖ Applied Science
- ❖ Microscopy Research and Technique
- ❖ Evidence-based Complementary and Alternative Medicine
- ❖ Oxidative Medicine and Cellular Longevity
- ❖ Frontiers in Veterinary Science

EDITOR ROLES

- ❖ Guest Associate Editor in Veterinary Experimental and Diagnostic Pathology
- ❖ Guest Associate Editor in Oxidative Medicine and Cellular Longevity

DECLARATION: I, hereby declare that all particulars furnished by me are true to the best of my knowledge and belief

Elsayed Metwally