

**Dr. M. MohanaSundari M.Sc., Ph.D, Postdoc (USA)**  
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### **GENERAL INFORMATION**

Name : Dr. M. Mohanasundari  
Father Name : Mylsamy Gounder  
Department : Zoology  
Post Applied for : Assistant Professor  
Category : BC

### **OBJECTIVE**

Looking to contribute my knowledge and skills to the academic institution which offers an opportunity for career progression.

### **EDUCATION**

**Ph.D - Department of Zoology, Annamalai University, Tamilnadu** **2007**

**Mentor: Dr. M. Sabesan M.Sc, M.Phil, Ph.D.,** Professor and Dean, Annamalai University

Doctoral research work was effect of antioxidant and neuroprotective substances on MPTP (1- methyl 4-phenyl 1, 2, 3, 6 - tetrahydropyridine) induced Parkinson's disease (PD) in mice. The plant *Hypericum perforatum*, contains hypericin (present in leaf extract), which is a neuroprotective and antioxidant compound. The PD mice treated with *Hypericum Perforatum* leaf extract (HPE) significantly improved the behavioral responses, cellular antioxidant systems and biochemical changes specifically increased level of neurotransmitters. These properties were more effective when combined with bromocriptine, Dopamine D2 receptor agonist treatment in mice.

<b>High School</b>	<b>Govt HSS</b>	<b>1993</b>	<b>73.6 %</b>	<b>First Class</b>
<b>Higher Secondary School</b>	<b>SVG Udumalpet</b>	<b>1995</b>	<b>65.3%</b>	<b>First Class</b>
<b>UG Zoology</b>	<b>Vishalakhi College Udumalpet</b>	<b>1998</b>	<b>79.18 %</b>	<b>First Class with Distinction</b>
<b>PG Zoology</b>	<b>Annamalai University</b>	<b>2002</b>	<b>74.6%</b>	<b>First Class</b>
<b>PhD Zoology</b>	<b>Annamalai University</b>	<b>2007</b>		
<b>Clinical Research Certificate</b>	<b>Indiana University Purdue University Indianapolis (IUPUI) USA</b>	<b>2013</b>		

## **WORK EXPERIENCE**

**Foundation Course Biology Trainer, Sri Vidhya Mandhir, Pushpathur, Palani.**

**June 2022 to May 2023**

**Assistant Professor, PG Department of Zoology, Arulmigu Palani Andavar Arts College for Women, Palani**

**Aug.2019 to May 2022**

**Post-Doctoral Fellow, Department of Pediatrics, School of medicine, West Virginia University (WVU), USA.**

**2010 - 2013**

The project was 'Obesity induced asthma in newborn babies' using Rat model. The blood and BALF neurotropic factors were higher in pups of rat fed with high fat diet, correlated with obesity and mediated the asthma development in pups. Observed and used gene expression and proteomics techniques such as protein purification and Immunoblotting.

**Research fellow, Dr. Gangaraju's lab Department of ophthalmology, School of medicine Indiana University-Purdue University (IUPUI), Indianapolis, USA**

**2014 to 2015**

The research project on human adipose derived stem cells treated to neurovascular pathology in diabetic rats. Developed in vivo and in vitro models to explore stem cell replacement therapy in diabetic retinopathy.

**UGC Project fellow, Department of Zoology, Annamalai University, India 2002 to 2007**

**Title: “Efficacy of Herbal Treatment on MPTP induced Parkinson’s Disease in Experimental Animals”**

**Investigator: Dr. M. Sabesan, M.Sc., M.Phil.,PhD., Department of Zoology, Annamalai University**

### **SKILLS:**

#### **Animal techniques and Expertise**

- Maintenance of small animals (rodents) colony
- Administration of drugs by various methods, Rodents Genotyping
- Monitor and assess the motor and cognitive behaviors using Narrow Beam Maze, Rota-rod, Gait measurement, T-Maze, Elevated Plus Maze, Morris Water Maze.
- Micro dissection of brain areas, Euthanasia and collection of organs and tissues, Collection of blood and urine
- Small animal lung lavage
- Microinjections and Stereotaxic surgery

#### **Communication, Project Management and Leadership skills**

- Proficient in oral and writing communication in English
- Technical writing in research proposal, Experimental design, research articles for publications and Interpretation and presentation of results
- Equipment maintenance and Trouble shooting
- Taught laboratory and research techniques to undergraduate and graduate students

#### **Molecular and Bioanalytical Techniques**

- Enzyme linked immunosorbent assay (ELISA),
- SDS-PAGE electrophoresis, Western blot, Immunofluorescence
- RNA and DNA isolations, PCR, Quantitative real time PCR
- HPLC, Antioxidant and Lipid peroxidation assays

#### **Hematology and Cell Culture Techniques**

- Serum and Plasma preparation, Serum RNA extraction and Serum protein Estimations
- Mammalian Cell culture, Stem Cell Culture, plate reading and Media preparation
- CHO cell lines mRNA, siRNA transfections
- Gene Expression using Plasmid Vector, MTT assays

## Imaging

- Electron microscopy Light microscopy
- Microtome sectioning, Histology and Histochemistry techniques (GFAP)
- Confocal microscopic fixed and live probes

## Software Skills

- MS Office, Excel, PowerPoint, SPSS 10.0, Windows 10 XP, MATLAB, Video tracking software (VedioMot2)

## PUBLICATIONS

- Kanagasabai S. **Mohanasundari. M**, Gugan K et al.,(2023) Antihypertensive effects of pentacyclic triterpenoid from *Convolvulus pluricaulis* and its plausible mechanism of action hypothesizing its selectively targeting Mineralocorticoid receptor of RAAS, *Phytomedicine plus* Vol 3 Issue1

**Impact factor 2.46**

- Umamaheswari. R, **Mohanasundari. M**, Pavadharani. P, Prema. R, Krishnamoorthy. S, (2021) Preliminary phytochemical investigation of brown sea weed *Sargassum wightii* and *Turbinaria conoids*.. *Intern.J.Botany studies* 6,-1371-1375.
- **Mohanasundari. M** and Sabesan.M. (2007). Modulating effect of *Hypericum perforatum* extract on astrocytes in MPTP induced Parkinson's disease in mice. *Eur Rev Med Pharmacol. Sci.*,11 17-20

**Impact factor: 3.0**

- **Mohanasundari.M**. Srinivasan,M.S.,Sethupathy.S.,and Sabesan.M. (2006). "Enhanced neuroprotective effect by combination of bromocriptine and *Hypericum perforatum* extract against MPTP induced neurotoxicity in mice. *J Neurol Sci.*,249, 140-14

**Impact Factor : 4.45**

- **Mohanasundari.M**,Sethupathy.S, and Sabesan.M. (2006). Effect of *Hypericum perforatum* extract against the neurochemical and behavioral changes induced by MPTP in mice. *Indian J of Pharm.*, 38 (4) 266-270

**Impact Factor : 2.83**

- **Mohanasundari. M.**, Sabesan. M., and Sethupathy.S. (2005). Reno protective effect of grape seed extract in ethylene glycol induced Nephrotoxic mice. *Indian J. Exp. Biol.*,43(4): 356-359

**Impact factor: 0.94**

## PRESENTATION/ABSTRACTS

### National and International

- **Mohanasundari, M.,** Sethupathy, S., and Sabesan, M. Effect of *Bacopamoniera* plant extract on MPTP induced Parkinson's disease in mice. *ICIPG-2003 an International Congress*, Chidambaram, Tamilnadu, India, 2003.
- **Mohanasundari, M.,** Sethupathy, S., and Sabesan, M. Beneficial effect of natural antioxidants on MPTP induced Parkinson's disease in mice. *National Symposium on Recent Trends in Environment and Biotechnology*, Kumbakonam, Tamilnadu, India, 2004.
- **Mohanasundari, M.,** Sethupathy, S., and Sabesan, M. Hypolipidemic effect of fiber and taurine in high fat diet fed rats. *International Symposium on Efficacious Drugs, IABMS-2004*, Chennai, Tamilnadu, India, 2004.
- **Mohanasundari, M.,** Sethupathy, S., and Sabesan, M. Neuroprotective effect of bromocriptine against MPTP induced Parkinson's disease in mice. *4<sup>th</sup> National level Biological Congress*, Rasipuram, Tamilnadu, India, 2005.
- **Mohanasundari, M.,** Sethupathy, S., and Sabesan, M. Effect of MPTP induced locomotors disability and motor deficits in mice. *National Seminar on Biovision*, Chidambaram, Tamilnadu, India, 2005.
- **Mohanasundari, M.,** Sethupathy, S., and Sabesan, M. Neuroprotection of *Hypericum perforatum* against MPTP induced neurotoxicity in mice. *National Symposium on Molecular Basis of Disease*, Chennai, Tamilnadu, India, 2005.
- **Mohanasundari, M.,** Sethupathy, S., and Sabesan, M. Antioxidant effect of *Hypericum perforatum* on MPTP induced Parkinson's disease in mice. *National Symposium on Scope and Opportunities of Medicinal Plant Research*, Pudukkottai, Tamilnadu, India, 2005.
- **Mohanasundari, M.,** Sethupathy, S., and Sabesan, M. Efficacy of Combined Therapy of Bromocriptine and *Hypericum perforatum* extract against MPTP induced Parkinson's disease mice, *Symposium on Emerging Trends in Neurosciences & XXIII Annual Meeting of Indian Academy of Neurosciences*, Bangalore, Karnataka, India, 11-14 December 2005.
- **Mohanasundari, M.,** Sethupathy, S., and Sabesan, M. Synergistic effect of deprenyl and *Hypericum hookerianum* on MPTP induced Parkinson's disease in mice. *XXIV Annual Conference of Indian Academy of Neurosciences and International Update on Basic and Clinical Neuroscience Advances*, Lucknow, Uttar Pradesh, India, 17-20 December 2006.
- **Mohanasundari, M.,** Role of Neurotoxic effect of 1-methyl -4-phenyl-1,2,3,6 -tetra hydropryrene induced Parkinson's disease in mice. *International Conference on "Emerging trends in Chemical Sciences"* APA College for women, Palani, Tamilnadu, India .6<sup>th</sup> September 2019.

- **Mohanasundari, M.**, Enterpreneur Development Program, Participated, APA College for women, Palani, Tamilnadu, India. 18<sup>th</sup> September 2019
- **Mohanasundari, M.**, Enterpreneur Development Program In Sericulture, Participated, APA College for women, Palani, Tamilnadu, India. 16<sup>th</sup> December 2019
- **Mohanasundari, M.**, Role of Antioxidant Effect of Hypericum perforatum on 1-methyl -4-phenyl-1,2,3,6 –tetra hydropyrine induced Parkinson’s disease in mice. International Conference on “Current Scenario in Plant Science And Environmental Conservation ” APA College for women, Palani, Tamilnadu, India .7<sup>th</sup> Januaruy 2020
- **Mohanasundari, M.**, Effect of Ginko Biloba leaf extract on 1-methyl -4-phenyl-1,2,3,6 –tetra hydropyrine induced Parkinson’s disease in mice. International Conference on “Environmental Degradation and its impact on society: Measurement Management and Conservation ” APA College for women, Palani, Tamilnadu, India .20<sup>th</sup> Januaruy 2020
- **Mohanasundari, M.**, One day Workshop on Biological Inputs For Future Agriculture And Ecoenterprises, Participated, APA College for women, Palani, Tamilnadu, India. 24<sup>th</sup> Febuary 2020
- **Mohanasundari, M.**, Orientation and Retraining of Teachers, Participated, APA College for women, Palani, Tamilnadu, India. 9<sup>th</sup> March 2020
- **Mohanasundari, M.**, Faculty Development Program on Teaching, Learning and Evolution , Participated, APA College for women, Palani, Tamilnadu, India. 4<sup>th</sup> to 6<sup>th</sup> May 2020
- **Mohanasundari, M.**, Faculty Development Program on Enterpreneurship Development, Participated, Mother Teresa Women’s University, Kodaikanal, Palani, Tamilnadu, India. 4<sup>th</sup> to 6<sup>th</sup> May 2020

#### **PROGRAM ORGANISER:**

- A Short term course on Bio Informatics conducted by PG Department of Zoology, APACW, from 25-05-2020 to 30-5-2020
- An one day International Webinar on “Recent Progress in applications of Nanoparticles in Aquaculture” conducted by PG Department of Zoology, APACW on 12/08/2020
- The world kidney day – online quiz program conducted by PG Department of Zoology, APACW on from 03/04/21 to 04/04/21
- One day webinar on Protecting youth from alcohol and drug abuse conducted by PG Department of Zoology, APACW on 26/06/21
- Two days online quiz program on “END INQUALITIES, ENDAIDS, END PANDAMICS” PG Department of Zoology, APACW on from 25-12-21 to 26-12-21

## **Group projects**

### **2019-20**

Physiochemical analysis of water quayin Shanmuganadhi river

### **2020-21**

Black soldier fly: Effective waste management towards generation of Animal feed supplementation

### **2021-22**

Effect of panchakavya on seedling growth of balsam

## **ADDITIONAL RESPONSIBILITIES OTHER THAN TEACHING**

- UG & PG Admission, PG Department of Zoology of Arulmigu Palaniandavar Arts College for Women, Palani.
- Invigilation
- Paper Valuation- External Examiner
- Project Guidance to UG and PG students
- Organizing webinars for National and International day celebrations.
- Remedial course coordinator
- Member of College disciplinary committee

## **TRAINING AND AWARDS**

- Electron Microscopic training, National Institute of Mental Health and Neuroscience (NIMHANS), Bangalore, India
- Rodent Stereotaxic Surgery, Department of Neurophysiology, NIMHANS, Bangalore. India
- Certificate in Clinical Research 2013 – IUPUI
- Research Fellowship, 2002-07, Annamalai University, India
- Life member in Indian Neuroscience society

## **CORE COMPETENCE FOR BUILDING STUDENT AND DEPARTMENT SUCCESS**

- To motivate skill based studies for students to create placement opportunities.
- To teach Various Bio - Analytical Techniques to Students.
- To provide hands on training to fresh faculty members and young researchers.
- To assist with the senior members for Faculty Development Program.

- Based on my Clinical Research Certificate qualification to facilitate consultancy, like Stem cell culture center for collaborate with hospitals and private laboratories, it may help to generate fund, and image to department and Institutions.
- Promising Knowledge in writing research projects to get extramural funds from various funding agencies, Industrial and hospital Collaborations.
- To pave the way to get International collaborations for research.

**Contact Address:**

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