

## **CURRICULUM VITAE**

**Thangaraju Murugesan, Ph. D.**

*Research Associate*

Duke Center for Nicotine and Smoking Cessation Research, Department of Psychiatry,  
School of Medicine, Duke University Medical Center,  
Durham, NC 27705. Phone: 919-416-4355; Fax-919-286-1388. E-mail: murug002@mc.duke.edu

### **Residence:**

3020 Moneta Way, Apt #101, Durham, NC 27703. Phone: 919-806-3727

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### **CURRENT RESEARCH:**

The primary focus of my current research is to understand and elucidate the biological mechanisms underlying tobacco addiction, psycho-stimulants addiction (drug abuses) and to develop and promote more effective treatments for smoking cessation and drug abuse. To accomplish these goals, we evaluate the rational combination of existing behavioral and pharmacologic approaches to smoking cessation and drug addiction treatment. We are conducting clinical trials to assess the acute effects of nicotinic agonists and antagonists on smoking behavior, nicotine withdrawal symptoms and cognitive performance to develop neuronal nicotinic receptor agonist and antagonists for possible therapeutic use in smoking cessation and psycho-stimulant abuse. Furthermore, we are profiling the pharmacokinetic and bio-analytical data on the drug molecules and its metabolites, to investigate the efficacy of new approaches for smoking cessation treatments. Additionally, we also conduct experiments to design and develop an efficient nicotine delivery through aerosol system; and to identify novel compounds from cigarette smoke that show promise for medication development through laboratory animal models.

### **KEY RESPONSIBILITY:**

Development of analytical procedures and methods for metabolite profiling of nicotine, other tobacco compounds and investigational drug molecules in a variety of biological matrices

### **EDUCATIONAL PROFILE:**

**1998 – 2001** - Jadavpur University, Calcutta, India. **Ph. D. (Pharmacy)**

**1995 – 1997** - Jadavpur University, Calcutta, India, **M. S (Pharmacy)**

**1991 – 1995** - Madras Medical College, Madras, India, **B. S (Pharmacy)**

### **POST DOCTORAL EXPERIENCE:**

**April 2001-April 2004** – In the laboratory of **Prof. Neal Castagnoli Jr.**, Harvey W. Peters Research Center for the Study of Parkinson's disease and disorders of CNS, Department of Chemistry, Virginia Polytechnic Institute and State University, Blacksburg, Virginia, USA.

Performed research activities to understand and demonstrate the mechanistic role of Monoamine Oxidase (MAO) inhibitors on Neurodegenerative disorders with special focus on Parkinson's disease (PD). The research works have emphasized on development and implication of MAO-inhibitor for the possible treatment of PD and Smoking Cessation. My responsibilities were centered on conception, design and execution of pharmacological, biochemical and bio-analytical experiments pertaining to evaluate the effect of tobacco/tobacco smoke derived MAO-inhibitors on the brain and liver MAO activities in various animal models; Human platelet rich plasma and Human placental mitochondrial homogenates. Furthermore, we designed a suitable animal model (in rodents) to study the inverse correlation of cigarette smoking and the level of MAO activities in the brain and liver.

### **PROFESSIONAL TEACHING EXPERIENCE:**

Prepared and Presented courses in chemistry, pharmacology and analytical instrumentation for the II year and IV year Bachelor of Pharmacy students (1997-1999) at Maharaji College of Pharmacy, Chennai

(Madras), India, and presented special coaching classes for the Pharmacy students to acquire higher rank in national level competitive exams in the field of Pharmaceutical and Medical Research (1998-2001) at Jadavpur University, Kolkata (Calcutta), India.

## **MENTORING EXPERIENCE:**

*The Tamilnadu Dr. MGR Medical University, Chennai, India*

Undergraduate Students (1997-1999):

- L. Manikandan, Maharaji College of Pharmacy, Chennai, India
- K. B. Suresh, Maharaji College of Pharmacy, Chennai, India
- Raj Kumar, Maharaji College of Pharmacy, Chennai, India
- Sheba Rani, Maharaji College of Pharmacy, Chennai, India
- Nazeer Ahamed, Maharaji College of Pharmacy, Chennai, India
- Sangeetha Rajaram, Maharaji College of Pharmacy, Chennai, India
- Radha Saluja, Maharaji College of Pharmacy, Chennai, India
- S. Lakshmi, Maharaji College of Pharmacy, Chennai, India
- G. Ramya, Maharaji College of Pharmacy, Chennai, India
- J. Chitra, Maharaji College of Pharmacy, Chennai, India
- S. Kathirava Karthikeyan, Maharaji College of Pharmacy, Chennai, India

Projects Guided (for undergraduate students):

- Pharmacological and Phytochemical evaluations of *Clerodendrum phlomidis* Linn
- Some Pharmacological evaluation of *Jussiaea suffruticosa* Linn

## **APPOINTMENTS:**

April 2004 – Present: **Research Associate**, Duke University Medical Center, Durham, USA  
2001 – 2004: **Postdoctoral Associate**, Virginia Tech, Blacksburg, Virginia, USA  
1998 – 2001: **Senior Research Fellow**, CSIR at Jadavpur University, Kolkata, India  
1997 – 1998: **Lecturer**, Maharaji College of Pharmacy, Chennai, India  
1995 – 1997: **Junior Research Fellow** at Jadavpur University, UCG, New Delhi, India

## **ACADEMIC EXCELLENCE/AWARDS/HONORS:**

- Awarded **Senior Research Fellowship** by the Council of Scientific and Industrial Research (CSIR), Human Resource Development, Ministry of Health, New Delhi, India (1999-2001).
- Awarded **Travel Grant** from Council of Scientific and Industrial Research (CSIR), Human Resource Development, Ministry of Health (HRD) and from Department of Science and Technology (DST), Ministry of Health, New Delhi, India to attend conference in France (2000).
- Awarded **Junior Research Fellowship** by the University Grant Commission (UGC), Department of Human Resource Development (HRD), Ministry of Health, New Delhi, India (1995-1997).
- Qualified in National level competitive examination of Graduate Aptitude Test in Engineering (**GATE-95**), particular in Pharmaceutical Sciences securing 91.31 percentile with All India rank of 94.
- *Reviewer, Journal of Ethnopharmacology*, Elsevier Sciences (Since 2001).
- *Reviewer, Indian Journal of Medical Sciences*, Medknow Publications (Since 2004).

- Reviewer, *Pharmacognosy Magazine*, Phcog.net (Since 2005)
- Reviewer, *Life Sciences*, Elsevier Sciences (Since 2005)

## HIGHLIGHTS OF RESEARCH EXPERIENCE AND SKILLS ACQUIRED:

### Pharmacological and Biochemical:

- Isolation of mitochondria (from brain and liver) of rodents as well as from human placenta for quantification of MAO activity (Enzymology).
- High Throughput Screening (HTS) by Microplate Reader: Quantification of MAO-B enzyme activity in smoker and non-smokers platelet rich plasma; *In-vitro* bioassay to determine the MAO inhibition of drug candidates.
- *In-vivo, ex-vivo and in-vitro* pharmacological screenings of various natural products isolates for a variety of activities in several experimental animal models.

### Bio-Analytical:

- *Chromatography* – HPLC, HPTLC and GC-NPD (Method developments).
- *Spectroscopy* - GC-MS, NMR and UV-Visible.
- *Other instruments* – UV-Microplate reader, Polarimeter, Flame photometer, Coulter Counters and Borgwaldt smoking machine

### Phytochemical:

- Bioassay guided fractionation of bioactive metabolites from natural products using classical and modern Chromatography and Spectroscopic techniques.

### Computer:

- Evaluation of Bio-medical data using specialized software like Graph pad Prism V2, MS Excel programs.
- Experienced with Internet applications for scientific research activities.
- Experienced in the use of MS office (MS word, MS excel, Power point) and other software packages such as Chemdraw etc.

## PUBLICATION PROFILE:

### BOOK CHAPTER:

**Thangaraju Murugesan**, B. P. Saha. Antioxidant and free radical scavenging properties of methanolic extract and a flavonoid obtained from *Jussiaea suffruticosa*. Recent Progress in Medicinal Plants, STUDIUM PRESS LLC, Houston, Texas, U.S.A (Submitted)

### REVIEW ARTICLES:

1. Kay Castagnoli and **Thangaraju Murugesan**. Tobacco Leaf, Smoke and Smoking, MAO Inhibitors, Parkinson's Disease and Neuroprotection; Are There Links? NeuroToxicology, Monoamine Oxidases: Molecular, Pharmacological and Neurotoxicological Aspects; A Tribute to Prof. Merton Sandler, Elsevier Science, UK (January, 2004) 25(1-2): pp 279-291.
2. **T. Murugesan**, Sanghamitra Sinha, M. Pal and B. P. Saha, Review on Phytochemical and Medicinal aspects of *Jussiaea suffruticosa* Linn. Ancient Science of Life, XXI (3); 205-207, 2002

**PUBLICATIONS IN PEER-REVIEWED JOURNALS:**

1. **T. Murugesan**, Kay Castagnoli, Neal Castagnoli, "Quantification of MAO-A and B enzyme activities in the brain mitochondrial homogenates of two different species of rodents exposed chronically to main stream cigarette smoke"- (Under preparation).
2. Kay Castagnoli, **T. Murugesan**, Izel Fourie, Neal Castagnoli, "Effect of cigarette smoke exposure on the level of monoamine oxidase enzyme activity in rats" (Under preparation).
3. W. J. Geldenhuys, S. F. Malan, **T. Murugesan**, C. J. Van der Schyf and J. R. Bloomquist, "Synthesis and biological evaluation of pentacyclo (5.4.0.0<sup>2,6</sup>.0<sup>3,10</sup>.0<sup>5,9</sup>) undecane derivatives as therapeutic agents in Parkinson's disease". Bioorganic & Medicinal Chemistry 12(7): 1799-806, (2004 April 1
4. V. Suba, **T. Murugesan**, M. Pal. Subhash C. Mandal and B. P. Saha. "Anti-ulcer activity of methanolic fraction of *Barleria lupulina* Lindl in animal models". Phytotherapy Research. (In Press, 2004)
5. V. Suba, **T. Murugesan**, R. Kumaravelrajan, B. P. Saha, Subhash C, Mandal. "Anti-inflammatory, analgesic and anti-peroxidative efficacy of *Barleria lupulina* Lindl. Extract". Phytotherapy Research. (Accepted in Oct. 2004).
6. V. Suba, **T. Murugesan**, R. Bhaskara Rao, Lopamudra Ghosh, M. Pal, Subhash C. Mandal, B. P. Saha. Anti-diabetic potential of *Barleria lupulina* extract in rats. Fitoterapia, 75: 1-4, 2004.
7. L. Ghosh, J. R. Gayen, **T. Murugesan**, S. Sinha, M. Pal, B. P. Saha. Evaluation of purgative activity of roots of *Rumex nepalensis*. Fitoterapia, 74: 372-374, 2003.
8. V. Suba, **T. Murugesan**, R. B. Rao, M. Pal, Subhash C. Mandal, B. P. Saha. Neuropharmacological profile of *Barleria lupulina* Lindl. Extract in animal models. Journal of Ethnopharmacology, 81: 251-255, 2002.
9. R. Bhaskara Rao, K. Anupama, K. R. L. Anand Swaroop, **T. Murugesan**, M. Pal, and S. C. Mandal. Evaluation of anti-pyretic potential of *Ficus racemosa* bark. Phytomedicine, 9(8): 731-733, 2002.
10. Swati Biswas, **T. Murugesan**, Sanghamitra Sinha, Kuntal Maiti, Gia Rahaman Gayen, M. Pal and B. P. Saha. Antidiarrhoeal activity of *Strychnos potatorum* seed extract in rats. Fitoterapia 73(1); 43-47, 2002.
11. K. Srikanth, **T. Murugesan**, Ch. Anil Kumar, V. Suba, Amit K. Das, Sanghamitra Sinha, G. Arunachalam, Manikandan, L. Effect of *Trichodesma indicum* Extract on cough reflex induced by sulphur dioxide in mice. Phytomedicine, 9(1): 75-77, 2002.
12. L. Ghosh, G. Arunachalam, **T. Murugesan**, M. Pal and B.P. Saha. Studies on the psychopharmacological activities of *Rumex nepalensis* Spreng. root extract in rats and mice. Phytomedicine, 9(3): 202-206, 2002.
13. Bhaskara Rao, **T. Murugesan**, Sanghamitra Sinha, B. P. Saha, M. Pal and Subhash C. Mandal. Glucose lowering efficacy of *Ficus racemosa* extract in normal and alloxan induced diabetic rats. Phytotherapy Research, 16(6), 590-2, 2002.

14. **T. Murugesan**, K. S. Saravanan, S. Lakshmi, G. Ramya, K. Thenmozhi. Evaluation of Psychopharmacological effects of *Clerodendrum phlomidis* Linn. Extract. Phytomedicine, 8(6); pp. 472-476, 2001.
15. Sanghamitra Sinha, **T. Murugesan**, Kuntal Maiti, Jiaur Rahaman Gayen, M. Pal and B. P. Saha. Evaluation of Anti-inflammatory potential of *Bergenia ciliata* Sternb. Rhizome extract in rats. Pharmacy and Pharmacology, 53 (2), 193-196, 2001.
16. Sanghamitra Sinha, **T. Murugesan**, M. Pal and B. P. Saha. Evaluation of Anti-tussive activity of *Bergenia ciliata* Sternb. Rhizome extract in mice. Phytomedicine, 8(4), 298-301, 2001.
17. Swati Biswas, **T. Murugesan**, Kuntal Maiti, Lopamudra Ghosh, M. Pal, B. P. Saha. Study on the diuretic activity of *Strychnos potatorum* Linn. seed extract in albino rats. Phytomedicine, 8(6); 469-471, 2001.
18. Sanghamitra Sinha, **T. Murugesan**, Kuntal Maiti, J. R. Gayen, Basudeb Pal, M. Pal and B. P. Saha. Anti-bacterial activity of *Bergenia ciliata* Sternb. Rhizome. Fitoterapia, 72(5): 550-552, 2001.
19. **T. Murugesan**, Lopamudra Ghosh, Pulok K. Mukherjee, M. Pal and B. P. Saha. Evaluation of anti-tussive potential of *Jussiaea suffruticosa* Linn. Extract in albino mice. Phytotherapy Research, 14(7); 541-542, 2000.
20. **T. Murugesan**, Lopamudra Ghosh, K. Mukherjee, J. Das, M. Pal and B. P. Saha. Evaluation of anti-diarrhoeal profile of *Jussiaea suffruticosa* Linn. Extract in albino rats. Phytotherapy Research, 14; 381-383, 2000.
21. **T. Murugesan**, S. C. Mandal, T. Bhakta, J. Das, M. Pal and B. P. Saha. Evaluation of Anti-pyretic potential of *Jussiaea suffruticosa* Linn. Extract in rat. Phytomedicine, 7(3), 231-234, 2000.
22. **T. Murugesan**, Bhaskara Rao, Sanghamitra Sinha, Swati Biswas, M. Pal, B. P. Saha. Anti-diabetic evaluation of *Jussiaea suffruticosa* extract in rats. Pharmacy and Pharmacology Communications, 6; 1-4, 2000.
23. **T. Murugesan**, Jiaur Rahman Gayen, Jayanthi Poddar, Swati Biswas, M. Pal and B. P. Saha. Evaluation of Tincture prepared from *Jussiaea suffruticosa* Linn. Journal of Scientific & Industrial Research, 59: 587-590, July 2000.
24. S. C. Mandal, Ashok Kumar C. K., S. Mohana Lakshmi, Sanghamitra Sinha, **T. Murugesan**, B. P. Saha, M. Pal. Anti-tussive effect of *Asparagus racemosus* against sulphurdioxide induced cough in mice. Fitoterapia, 71 (6), 689-691, 2000.
25. **T. Murugesan**, L. Manikandan, K. B. Suresh, M. Pal and B. P. Saha. Evaluation of Diuretic potential of *Jussiaea suffruticosa* Linn. Extract in albino rats. Indian Journal of Pharmaceutical Sciences, 150-151, 2000.
26. Sanghamitra Sinha, **T. Murugesan**, K. Maiti, J. R. Gayen, M. Pal and B. P. Saha. Evaluation of anti-pyretic potential of *Bergenia ciliata* Sternb. Rhizome extract. Pharmacy and Pharmacology Communications, 6(12): 549-551, 2000.
27. **T. Murugesan**, Lopamudra Ghosh, M. Pal and B. P. Saha. CNS Activity of *Jussiaea suffruticosa* Linn. Extract in Rats and Mice. Pharmacy and Pharmacology Communications, 5; 663-666, 1999.

28. Sheba Rani N. D., Nazeer Ahemad, Sangheetha Rajaram, Radha Saluja, S. Thenmozhi and **T. Murugesan**. Anti-diarrhoeal evaluation of *Clerodendrum phlomidis* Linn. Leaf extract in rats. Journal of Ethnopharmacology, **68**; 315-319, 1999.
29. Pulok K. Mukherjee, Kakali Saha, **T. Murugesan**, S. C. Mandal, M. Pal and B. P. Saha. Screening of anti-diarrhoeal profile of some plant extracts of a specific region of West Bengal, India. Journal of Ethnopharmacology, **60**; 85-89, 1998.
30. Kakali Saha, Pulok K. Mukherjee, **T. Murugesan**, B. P. Saha and M. Pal. Studies on *in-vivo* anti-tussive activity of *Leucas lavandulaefolia* Rees. (Family: Labiatae) using a cough model induced by sulphurdioxide gas in mice. Journal of Ethnopharmacology, **57**; 89-92, 1997.

**SCIENTIFIC ABSTRACTS:**

1. Prabhu Daniel, V. Suba, Kumaravel Rajan R, **Murugesan T.** Is Nicotine Pro-oxidant or Anti-oxidant in CNS. International conference on "Anti-oxidant & free radicals in Health nutrition and Radio protectors" IV Annual conference of SFRR-India, 10-12, Jan 2005 (Accepted).
2. Geldenhuys, W. J., **Murugesan, T.**, Malan, S. F., Bloomquist, J. R., Van der Schyf, C. J.; Molecular modeling studies on the inhibition of monoamine oxidase B by petacycloundecylamines. *Society for Neuroscience (SFN) meeting*, San Diego, USA, 23-28 October, 2004.
3. Geldenhuys, W. J., Jochen Klein, Sarel F. Malan, **Thangaraju Murugesan**, Cornelis J. Van der Schyf and J. R. Bloomquist. Inhibition of monoamine oxidase B by derivatives of pentacyclo[5.4.0.0<sup>2,6</sup>.0<sup>5,9</sup>]undecane. *Microsomes and Drug Oxidations 2004*, P9-CH-19. Mainz, Germany, July 4 -9, 2004.
4. Castagnoli, Kay, Fourie, Izel, Van der Schyf, Cornelis J., **Murugesan, Thangaraju.**, Castagnoli, Neal. Inhibition of monoamine oxidase by tobacco smoke. *224th ACS National Meeting*, Boston, MA, USA, 2002.
5. V. Suba, **T. Murugesan**, R. Kumaravelrajan, Murugan, Subhash C. Mandal and B. P. Saha. Anti-tussive effect of *Barleria lupulina* Lindl. Extract in Mice. Indian Pharmaceutical Congress, Pune, India. 2002.
6. R. Bhaskararao, **T. Murugesan**, B. P. Saha, M. Pal and S. C. Mandal. Anti-inflammatory efficacy of the isolated tritpenoid  $\beta$ -Amyrin from the petroleum ether fraction of methanolic extract of the stem bark of *Ficus racemosa*. Indian Pharmaceutical Congress, New Delhi, India. 2001.
7. Sanghamitra Sinha, **T. Murugesan**, Kuntal Maiti, Jiaur Rahaman Gayen, M. Pal and B. P. Saha. *Bergenia ciliata* affords potent anti-diarrheal profile in albino rats. 52<sup>nd</sup> Indian Pharmaceutical Congress, Hyderabad, India. 2000.
8. **T. Murugesan**, P. K. Mukherjee, M. Pal and B. P. Saha. Hypoglycaemic potential of *Jussiaea suffruticosa* extract in rats. 3<sup>rd</sup> International Congress on Phytomedicine, Munich, Germany. P-7, 2000.
9. **T. Murugesan**, M. Pal and B. P. Saha. Anti-inflammatory potential of *Jussiaea suffruticosa* Linn. Extract in albino rat. International Congress on Ethnopharmacology, 4<sup>th</sup> European Colloquium of Ethnopharmacology, Metz, France. P N<sup>o</sup> 54, 2000.

10. S. C. Mandal, Ashok Kumar C. K., **T. Murugesan**, B. P. Saha and M. Pal. Studies on Anti-tussive activity of *Asparagus racemosus* Willd. (Lilliaeceae) root extract. Proceedings of the Eighty Seventh Session of the Indian Science Congress, Pune, India. pp. 14, 2000.
11. Sanghamitra Sinha, Kuntal Maiti, Jiaur Rahaman Gayen, **T. Murugesan**, M. Pal and B. P. Saha. In-vitro Anthelmintic evaluation of *Bergeria ciliata* Sternb. Rhizome. 52<sup>nd</sup> Indian Pharmaceutical Congress, Hyderabad, India. 2000.
12. Jayanti Poddar, Swati Biswas, Tejendra Bhakta, **T. Murugesan**, M. Pal and B. P. Saha. Psychopharmacological evaluation of *Ocimum sanctum* Linn. (Family; Labiatae) root extract. 51<sup>st</sup> Indian Pharmaceutical Congress, Indore, India. p. 62, 1999.
13. Swati Biswas, Jayanthi Poddar, Tejendra Bhakta, **T. Murugesan**, M. Pal and B. P. Saha. Evaluation of anti-diarrhoeal activity of *Strychnas potatorum* Linn. Seeds extract. 51<sup>st</sup> Indian Pharmaceutical Congress, Indore, India. p. 62, 1999.
14. S. Lakshmi, G. Ramya, Nazeer Ahamed, A. J. Chitra, S. Kathirava Karthikeyan, N. D. Sheba Rani, S. Thenmozhi and **T. Murugesan**. Evaluation of some psychopharmacological activities of *Clerodendrum phlomidis* Linn. Leaf extract. (Family; Verbanaceae). 50<sup>th</sup> Indian Pharmaceutical Congress Golden Jubilee Commemoration & 17<sup>th</sup> Asian Congress of Pharmaceutical Sciences, Mumbai, India. pp. 136, 1998.
15. Sheba Rani, Sangeetha Rajaram, Radha Saluja, Pulok K. Mukherjee, S. Thenmozhi and **T. Murugesan**. Anti-diarrhoeal evaluation of *Clerodendrum phlomidis* Linn. (Family; Verbanaceae) leaf extract"-50<sup>th</sup> Indian Pharmaceutical Congress Golden Jubilee Commemoration & 17<sup>th</sup> Asian congress of Pharmaceutical Sciences, Mumbai, India. pp. 128, 1998.
16. Kakali Saha, P. K. Mukherjee, J. Das, **T. Murugesan**, S. C. Mandal, M. Pal and B. P. Saha. Anti-tussive evaluation of methanolic extract of *Leucas lavandulaefolia* Rees. (Family; Labiatae). Scientific abstract, 48<sup>th</sup> Indian Pharmaceutical Congress, Chennai, India. C2P6, 1996.

#### **SELECT RESEARCH MEDIA COVERAGE:**

- My graduate research activities were telecasted as "the importance of herbal drug research in India" by Doordharshan Regional Television, Calcutta (Kolkata), India (November, 2001).
- One of my current research interests with my picture appeared in Triangle Business Journal, Raleigh, North Carolina, USA. July 9, 2004.

#### **PROFESSIONAL MEMBERSHIP IN LEARNED SOCIETIES AND ORGANIZATIONS:**

1. Society for Neurosciences (SFN), USA (Since 2005)
2. American Chemical Society (ACS), USA (Since 2001)
3. American Society of Pharmacognosy (ASP), USA (Since 2001)
4. Associate Program Member, United Who's Who, USA (Since 2001)
5. International Society for the Study of Xenobiotics (ISSX) (2001-2002)
6. International Society of Ethnopharmacology (ISE) (1999-2001)
7. Indian Pharmaceutical Association (IPA) (1995-2000)
8. The Indian Society of Pharmacognosy (ISP) (Life Member)

#### **MEETINGS/CONGRESSES/CONFERENCES ATTENDED:**

1. 10<sup>th</sup> Annual Duke Nicotine Research Conference, Durham, North Carolina, USA. October – 21, 2004.

2. 228<sup>th</sup> American Chemical Society (ACS) National Meeting and Exposition, Philadelphia, Pennsylvania, USA. August - 22-26, 2004.
3. 8<sup>th</sup> Annual Duke Nicotine Research Conference, Durham, North Carolina, USA. October - 30, 2002.
4. International Congress on Ethnopharmacology, Metz, France. May - 11-13, 2000.
5. Indian Pharmaceutical Congress (From 1996 to 2000).

#### **OTHER PROFESSIONAL ACTIVITIES:**

- Served as Examiner and Co-examiner, B. S. (Pharmacy) practical examination that were conducted by the Tamilnadu Dr. MGR Medical University, Chennai, India (1997-1999)
- Served as Examiner (practical examination), Diploma in Pharmacy that was conducted by the Directorate of Medical Education, Chennai, Tamilnadu, India (1997)
- Served as Additional Superintend of Examination, for Medical (MBBS), Dental (BDS), Pharmacy (B. S) and Nursing (B. S) examinations (theory examination) conducted by the Tamilnadu Dr. MGR Medical University, Chennai, Tamilnadu, India (1997)
- Attended work shop on “Quality Improvement Program in Teaching” conducted by All India Council for Technical Education, Jadavpur University, Calcutta, India (2000)
- Attended work shop on “Regulation of ER-81 Syllabus for Diploma in Pharmacy”, the Tamilnadu Dr. MGR Medical University, Chennai, India (1995)
- Served as Examiner and Evaluator, Diploma in Pharmacy final examination of Pharmaceutical Chemistry, Pharmacology and Pharmacognosy, Calcutta, India (1999-2001)
- Scientific Advisor, Foundation for Research and Sustainable Development <sup>(FRSD)</sup> Madurai, Tamilnadu, INDIA (2001-present)
- Thesis evaluator for Ph. D (Pharmacy), The Tamilnadu Dr.MGR Medical University, Chennai, Tamilnadu, India (Since 2004)