

Dr. P. Kalaivani
Research Scientist
Centre for Toxicology & Developmental Research,
Sri Ramachandra Institute of Higher
Education & Research,
Porur, Chennai – 600 116.
Tamilnadu state, India

BACKGROUND / Expertise

- ✓ **Handling Animals:** Excellent in handling and maintaining rats and mice and immensely trained in GLP standard animal facility. Hands on experience with care, in conducting basic in vivo procedures, such as drug administration by different routes, blood collection, Necropsy Procedures in rodents etc.,
- ✓ **Toxicity Studies:** As per OECD guidelines to conduct the acute, sub acute and chronic repeated oral toxicity, Acute and dermal toxicity, teratogenicity studies, Toxicity through parenteral routes such as intravenous, intradermal, subcutaneous etc.,
- ✓ **Molecular Biology:** SDS- PAGE, Agarose electrophoresis, RT-PCR, Western Blotting.
- ✓ **Surgical Techniques:** Middle cerebral artery occlusion, common carotid and vertebral occlusion in rats to induce ischemia, stereotaxic surgery to inject toxicants or drugs in brain, Renal artery occlusion to induce hypertension, Pylorus ligation induce ulcer, Bile duct ligation, Sciatic nerve induce neuropathic pain in rats.
- ✓ **Biochemical Techniques:** Biochemical analyzer, UV spectrophotometry, Spectrofluorimetry, ELISA, Haematological analyzer, Semi auto analyzer, Pharmacological equipments like Non – invasive blood pressure, Students Analgesiometer, Plethysmometer, Flame photometer.
- ✓ **Chromatographic Techniques:** HPTLC, HPLC and other minor basic laboratory equipments. Behavioural assessment in rodents: Cognition: Radial arm maze, Y maze, Transfer latency (Elevated plus maze) Active and passive avoidance etc.,
- ✓ **Anxiety & Depression:** Elevated plus maze, Hole board, Open field. Motor Function: Beam walk, vertical and horizontal grid, Gait test, Stride length.
- ✓ **Pre clinical drug discovery: Neurodegenerative Disease:** Middle cerebral artery occlusion/ perfusion (MCAO/R) model of cerebral ischemia, MPTP induced Parkinsons Disease, 3- NPA induced Huntingtons Disease, Scopolamine induced amnesia, Pentylene tetrazol (PTZ) induced epilepsy.
- ✓ **Myocardial infarction:** Isoprotrenol induced myocardial infarction, Left anterior descending artery ligation.
- ✓ **Hypertension:** Two kidney one clip (2K1C) Goldblatt model of renovascular hypertension.
- ✓ **Hyperlipidemia:** High fat diet model of hyperlipidemia, Triton WR- 1339 induced hyperlipidemia, anorectic model of feed intake behaviour.
- ✓ **Hepatotoxicity:** Paracetamol and CCl4 induced hepatotoxicity.

- ✓ **Diabetes:** Streptozotocin (STZ) and alloxan induced diabetes Inflammation: Complete Freund's Adjuvant (CFA) induced inflammation, Carrageenan induced paw edema Ulcer: Pylorus ligation, Indomethacin, HCl- Ethanol, Histamine, Cystamine, Aspirin, Cold stress induced ulcer.
- ✓ **Histopathological Techniques:** Immunohistochemistry, Protein expression by Double immuno fluorescence technique with TUNEL. Phytochemical techniques: Herbal extraction, phytochemical screening and invitro assays.
- ✓ **Cardioprotective activity** – Isoproterenol induced Myocardial infarction in rats,
- ✓ **Anti-diabetics** (STZ induced diabetes in rats, HFD+ low dose STZ induced diabetes in rats and Genetically diabetic mouse model-db/db mice),
- ✓ **Anti hyperlipidemic activity** (Tyloxapol induced hyperlipidemia in rats, HFD induced hyperlipidemia in mice) Anti-arthritis, Anti-inflammatory- (CFA induced arthritis in rats, Carrageenan induced paw edema in rats and DSS induced colitis in mice) and sleep deprivation model in mice (multiple platform method).
- ✓ **Software Skills:** Statistical Analysis graph pad prism and SYSTAT, MS Office
- ✓ **Behavioral studies to evaluate anxiety, depression and working memory** in rats and mice. I have been a part of the team in establishing regulatory toxicology studies in rats.
- ✓ **Special Instruments Handling** : I have also got trained in handling of HPTLC, Atomic absorption Spectroscopy, Rodent Non-Invasive blood pressure.

EDUCATIONAL QUALIFICATION:

Degree	Year	Area of Specialisation	Institution/ University
Ph.D	2017	Ph.D Bio Chemistry	PRIST University, Thanjavur
M.Phil	2008	M.Phil Bio Chemistry	Bharathidasan University, Trichy
M.Sc	2004	M.Sc Bio Chemistry	Bharathidasan University, Trichy
B.Sc	1999	B.Sc Bio Chemistry	Bharathidasan University, Trichy

WORK EXPERIENCE in RESEARCH WORK

RESEARCH EXPERIENCE: Projects Handled

- ✓ Worked on Senior Research Fellow in Centre for Toxicology and Developmental Research in a DST, GOI funded project entitled “*Phase II of population study of urban, rural and semi urban regions for the detection of endovascular disease and prevalence of risk factors and holistic intervention study*” from 2012-2015.
- ✓ Worked on Senior Research Fellow in Centre for Toxicity and Developmental Research in a DBT, GOI funded project entitled “*Regulation of SIRT1 and PARP1 and downstream signalling pathways by inotropic glutamate receptor/transporters and bioenergetics state modulators in rat cerebral*

focal ischemic model: Reliable targets for therapeutic consideration?”
(2010-2012).

- ✓ Worked on Junior Research Fellow in Centre for Toxicity and Developmental Research in a DST, GOI funded project entitled “***Development, Standardisation and Safety of a Polyherbal formulation in the management of obesity associated hyperlipidemia***” from 2008-2010.
- ✓ Worked on Project Assistant in a project entitled “***Scientific Evaluation of safety and efficacy profile of an Ayurvedic Herbal Formulation (R05) in the management of diabetes mellitus***” funded by Department of Science and Technology in Department of Biochemistry, Sri Ramachandra University, and Chennai-600 116 for three years (2005-2008).

GLP EXPERIENCE

As a Research Scientist & Study Director – Toxicology (From 2019 – till date) handled regulatory studies starting from Acute oral Toxicity, Skin Irritation, Eye Irritation, Dose range finding study, Repeated Dose toxicity, Elisa Validation Study, Reproductive Toxicity - Teratogenicity study.

NON GLP EXPERIENCE

As a Study Coordinator/Study Director/Study Person – Handled various pharmacological efficacy studies

- ✓ **Pre clinical drug discovery: Neurodegenerative Disease:** Middle cerebral artery occlusion/ perfusion (MCAO/R) model of cerebral ischemia, MPTP induced Parkinsons Disease, 3- NPA induced Huntingtons Disease, Scopolamine induced amnesia, Pentylentetrazol (PTZ) induced epilepsy.
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- ✓ **Diabetes:** Streptozotocin (STZ) and alloxan induced diabetes Inflammation: Complete Freund's Adjuvant (CFA) induced inflammation, Carageenan induced

paw edema Ulcer: Pylorus ligation, Indomethacin, HCl- Ethanol, Histamine, Cystamine, Aspirin, Cold stress induced ulcer.

- ✓ **Histopathological Techniques:** Immunohistochemistry, Protein expression by Double immunofluorescence technique with TUNEL. Phytochemical techniques: Herbal extraction, phytochemical screening and invitro assays.
- ✓ **Cardioprotective activity** – Isoproterenol induced Myocardial infarction in rats,
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- ✓ **Anti hyperlipidemic activity** (Tyloxapol induced hyperlipidemia in rats, HFD induced hyperlipidemia in mice) Anti-arthritis, Anti-inflammatory- (CFA induced arthritis in rats, Carrageenan induced paw edema in rats and DSS induced colitis in mice) and sleep deprivation model in mice (multiple platform method).

RESEARCH ARTICLES PUBLISHED:

- A.G. Sunil, K.S. Kesavanarayanan, P. Kalaivani, S. Sathiya, V. Ranju, R. Jyothi Priya, B. Pramila, F.D. Solomon Paul, J. Venkatesh, C. Saravana Babu. Total oligomeric flavonoids of *Cyperus rotundus* ameliorates neurological deficits, excitotoxicity and behavioral alterations induced by cerebral ischemic-reperfusion injury in rats. *Brain Research Bulletin*, 2011; 6: 394-405. Impact factor- 2.498
- Saravana Babu C, Kesavanarayanan KS, Kalaivani P, Ranju V, and Ramanathan M. A simple densitometric method for the quantification of inhibitory neurotransmitter Gamma-aminobutyric acid (GABA) in rat brain tissue. *Chromatography Research International* 2011; 2011, 5.
- K.S.Kesavanarayanan,P. Kalaivani. S. Sathiya, V.Ranju, A.G.Sunil, C.Saravanababu, S. Kavimani, D.Prathiba*. Standardization of an herbal formulation (DIA-2) containing *Allium sativum* and *Lagerstroemia speciosa* extracts using High-Performance Thin-layer Chromatography-UV densitometry. *Journal of Pharmacy Research* 2011, 4(11), 3910-3914.
- K.S. Kesavanarayanan, S. Sathiya, P.Kalaivani, V. Ranju, A.G.Sunil C.Saravana babu, S. Kavimani, D.Prathiba. DIA -2, a polyherbal formulation

ameliorates hyperglycemia and protein-oxidation without increasing the body weight in type II diabetic rats. *Eur Rev Med Pharmacol Sci*. 2011.

- KS. Kesavanarayanan, P. Kalaivani, G.Ramakrishnan, S.Sathiya, V.Ranju, R.Jyothipriya, Chinnasamy Selvakkumar, C.Saravanababu, J.venkhatesh, R.Ilavarasan, S.Kavimani, D Prathiba. 28-Day Repeated Dose Oral Toxicity of a Herbal Mixture Dia-2, Containing Standardized Extracts of *Allium Sativum* and *Lagerstroemia Speciosa* in Sprague Dawley Rats. *International Journal of Phytomedicine* 4 340-350 (2012).
- Saravana Babu C, Sathiya S, Anbarasi C, Prathyusha N, Ramakrishnan G, Kalaivani P, Jyothi Priya R, Selvarajan Kesavanarayanan K, Verammal Mahadevan M, Thanikachalam S. Polyphenols in madhumeega chooranam, a Siddha medicine, ameliorates carbohydrate metabolism and oxidative stress in type II diabetic rats. *J Ethnopharmacol*. 2012.
- Sekar Sathiya, Vijayan Ranju, Janani, Dharmabal, Periyathambi Kalaivani, B. Pramil Ruthiramoorthi Saranya, Adoor Gopalan Sunil, K.S. Kesavanarayanan, Chidambaram Saravana Babu, J Venkhatesh. Prenatal exposure to Lamotrigine: Effects on postnatal developmental and behaviour of the offspring. *ISRN Neuroscience*. 14 April 2011
- Chidambaram Saravana Babu, Periyathambi Kalaivani, Sekar Sathiya, Vijayan Ranju, Ruthramoorthy Saranya, Adoor Gopalan Sunil, Chandrasekar Anbarasi, Murugappapillai Verammal Mahadevan, Jayakothanda Ramaswamy Venkhatesh, Sadagopan Thanikachalam. Venthamarai chooranam, a Siddha medicine, alleviates hypertension via AT1R and eNOS signalling pathway in renovascular hypertensive rats. *Experimental Biology and Medicine* 2014; 0: 1–12
- Periyathambi Kalaivani, Ramesh babu Saranya, Ganapathy Ramakrishnan, Vijayan Ranju, Sekar Sathiya, Veeraraghavan Gayathri, Lakshmi Kantham Thiyagarajan, Jayakothanda Ramaswamy Venkhatesh, Chidambaram Saravana Babu, Sadagopan Thanikachalam. *Cuminum cyminum*, a dietary spice, attenuates hypertension via endothelial nitric oxide synthase and NO pathway in renovascular hypertensive rats. *Clinical Experimental Hypertension* 2012.

- Raman Lakshmi Sundaram, Ganapathy Ramakrishnan, Periyathambi Kalaivani, Veeraragavan Gayathri, Subash Ananthi, S.Saranya, Hannah R.Vasanthi. Effectiveness of *Cassia Occidentalis* on pentylenetetrazole induced Oxidative stress and Kindling in rats. *Asian Pacific Journal of Tropical Biomedicine*. 2012 (1-6).
- Sekar Sathiya, Vijayan Ranju, Periyathambi Kalaivani, Raju Jyothi Priya, Haridass Sumathy, Adoor Gopalan Sunil, Chidambaram Saravana Babu. Telmisartan attenuates MPTP induced dopaminergic degeneration and motor dysfunction through regulation of α -synuclein and neurotrophic factors (BDNF and GDNF) expression in C57BL/6J mice. *Neuropharmacology* 73 (2013) 98-110. impact factor 4.8.
- Kalaivani P, Ganesh, Sathiya S, Ranju V, Gayathiri V, Saravana Babu C. Alterations in bioenergetic modulators, SIRT1 and PARP1 expression precedes oxidative stress in rats subjected to transient focal cerebral ischemia: Molecular and Histopathological evidences. *Journal of Stroke and Cerebrovascular Diseases*. June 2014.
- Vijayan Ranju, Sekar Sathiya, Periyathambi Kalaivani, Raju Jyothi Priya, Chidambaram Saravana Babu. Memantine exerts functional recovery through regulation of neurotrophic factors in 3-nitropropionic acid phenotypic model of Huntington's disease in C57BL/6J mice. *Neuroscience Letters* 586 1–7(2015).
- Sekar Sathiya, Vijayan Ranju, Periyathambi Kalaivani, Chidambaram Saravana Babu. Repeated telmisartan administration attenuates astrogliosis and neuroinflammation in MPTP induced mouse model of Parkinson's disease. *Neuroscience* under review.
- Bakthavachalam Pramila, Periyathambi Kalaivani, Ramachandran Anita, Chidambaram Saravana babu. Citicoline reinstates the neurological, behavioural and motor functions in the MCAO/R rats by alleviating glutamate excitotoxicity and by up regulating NeuN expression. *Pharmacology, Biochemistry and Behavior* 135 (2015) 246–253.
- Pramila B, Kalaivani P, Barathidasan R, & Saravana Babu C, 2015, 'Preischemic Administration of Citicoline Exerts Better Neuroprotection and Restores Neurochemical and Motor Functions in MCAO/R Rats, *International*

Journal of Pharma and Biosciences vol. 6, no. 2. pp. 1462-1476

- Pramila, B, Kalaivani, P, Barathidasan, C & Saravana Babu 2015, 'Presichemic Administration of L-NAME Reinstates Behavior, Improves Motor Activity and Alleviates Excitotoxicity in Middle Cerebral Artery Occlusion / Reperfusion Rats', Indian Journal of Science and Technology, vol. 8, no. 7. pp. 692-701.
- Pramila, B, Kalaivani, P, Barathidasan, C & Saravana Babu 2015, 'Combination of Citicoline and L-NAME Restores Neurological Functions, Reverts Biochemical Alterations and Reduces Neuronal Damage in Transient Focal Cerebral Ischemic Rats', Indian Journal of Science and Technology, vol. 8, no. 9. pp. 804-813.
- Kalaivani P, Girish ramesh, Barathidasan R, and Saravana babu C. 'post ischemic administration with dihydrokainate (DHK), a glt-1 blocker fails to attenuate transient focal cerebral ischemia evoked neurodegeneration in rats'. International Journal of Pharma and Biosciences 2015 Oct; 6(4): (B) 107 - 120.
- Angu Bala Ganesh KSV, Kesavi Durairaj, Gopinathan Narasimhan, Kalaivani Periyathambi, Computer aided pharmacokinetic profiling and toxicity analysis of naphthalene Bioinformation 2021; 17(1): 80-85.

STUDENTS GUIDED FOR RESEARCH :

Nil

TRAINING - NATIONAL LEVEL

- Training on Basics on Toxicologic Pathology on 21st January 2014 by Dr. Yogesh Kumar Murkhunde (HOD Pathology – IIBAT)
- Training on Conduction and Interpretation of In vitro Chromosomal Aberration, In vivo micronucleus and Bacterial Reverse Mutation study, and Clinical Observation in Toxicity Studies on 26th April 2014 by Dr. Daivasikamani (GLP Trainer)
- Training Programme for Study Directors of GLP Test Facilities on March 3-5th 2014 at New Delhi, NGCMA, DST, Govt of India.

- Training Programme on “Introduction to the principles of Good Laboratory” held on 29th June 2013 at CEFT by Dr. V. Amalan Stanley (QA Head – RQAP Trainer).
- Training Programme on “Good Laboratory Practice in Information Technology” held on 27th Feb 2013 at CEFT by Proserve Technology Pvt Ltd.
- OECD principles of Good Laboratory (GLP), Quality Assurance & GLP and Genesis of GLP in India and present status held on 12th July 2012 at CEFT by Dr. B. V. David

ABROAD

Nil

SYMPOSIUM/SEMINARS ATTENDED

- The Symposium Integrated Approach to Herbal Technology (IAHT 2013) January 4th-5th Asthagiri Herbal Research Foundation, CLRI, Adyar, Chennai.
- Role of Experimental Surgery: From Bench to Bed ‘Frontier Mediville—Centre for now and tomorrow’ Workshop December 13-14, 2013, Frontier Lifeline and Dr. K.M. Cherian Heart Foundation. Frontier Mediville Elavur, near Chennai.
- 28th Annual meeting of Society for Neurochemistry, India (SNCI) Resource Person September 3rd SNCI Workshop (3rd to 12th September 2014).
- 28th Annual meeting of Society for Neurochemistry, India (SNCI) 10th to 12th September National Conference on Neurodegenerative Disorders and Metabolic Diseases, CEFT, SRU, Chennai 600 116.
- 28th Annual meeting of Society for Neurochemistry, India (SNCI) 10th to 12th September National Conference on Neurodegenerative Disorders and Metabolic Diseases.” Pre-Ischemic Treatment with Dihydrokinate blocked an early phase excitotoxicity and Oxidative Stress but failed to maintain bioenergetic level in middle cerebral artery occluded rats. CEFT, SRU, Chennai 600 116. [Poster Presentation]
- 3rd SRU- CITI International conference on Ethics and Responsible Conduct of Research Basics and Beyond CITI India SRU and university of Miami, USA 11th and 12th November 2014 SRU Chennai.

- 34th (XXXIV) annual conference of society of toxicology India 2014 “Challenges and strategies in toxicology for food safety & drug development-regulatory perspective in livestock” pharmacovigilance laboratory for feed animal and food safety (PLAFFS) directorate of centre for animal health studies, Tamilnadu Veterinary and animal sciences university (TANUVAS) Chennai 600 051 India 10 th to 12 th December 2014 Madras Veterinary College-7.
- One day National seminar and “Inauguration of Chennai Chapter of Society for Neurochemistry”, India. Department of Biochemistry, University of Madras, Guindy Campus, Chennai. 08th May 2015.
- 4th National Conference of the Society for Alternatives to Animal Expts-India, Post-Conference Online Workshop on “Integrated Discrete Multiple Organ Co Culture (IdMOC) for Toxicity Testing and Drug Discovery” Department of Zoology, University of Kerala, Thiruvananthapuram on 17th Dec 2021.

PAPERS PRESENTED IN NATIONAL/INTERNATIONAL SEMINARS

- Oxidative stress in hypertension related to vascular dysfunction. A.G Sunil, P.Kalaivani, Hannah R Vasanthi, Jain.T.Kallarakkal, S.Thanikachalam “Oxidative Stress in Hypertension- Related to Vascular Dysfunction” in the International Conference on Free Radicals in Clinical and Laboratory Medicine, AIMS, Cochin., on 4th and 5th January 07.
- Cyperus rotundas neurochemical and behavioural alteration in middle cerebral artery occluded rats. A.G Sunil, P.Kalaivani, K.S.Kesavanarayanan, V.Ranju, J.Venkatesh, C.Saravana Babu, F.D. Solomon Paul, S Thanikachalam. “International Seminar on Herbal Drug Research: Present and Future Prospects”, JSS College of Pharmacy, Ooty, on 4th & 5th December, 2009.
- Indo –American Pharmaceutical Regulatory Symposium. Sri Ramachandra University Chennai Nov 2010.
- Combination Therapy In Cerebral Ischemic Stroke: Synergistic Neuroprotective Effects Of Memantine, Nimodipine And Benzamide P. Kalaivani*, V. Ranju, A.G. Sunil, K.T.Mohanavalli, N.Prathyusha, G.Ramakrishnan. International Conference On Recent Trends in Therapeutic Advancement of Free Radical Science & 10th Annual Meeting of the Society

for Free Radical Research – (SFRR 2011), January 9th-11th, 2011. Chennai, India. [Poster Presentation]

- DBT Sponsored Short Term Training Course on “Advanced techniques in Animal cell culture” 2011.
- Exposure to Lamotrigine during pregnancy in rats: Effects on postnatal behavior of the offspring Kalaivani. P, Sathiya. S, Ranju. V, Kesavanarayanan K.S, Sunil A.G, Venkatesh. J, Saravana Babu. C Workshop on “Advance techniques in Neuroscience” and International Conference on “Metabolic signaling in Brain in health and disease- University of Hyderabad on Jan 01st – 09th 2011.
- Cuminum cyminum ameliorates elevated blood pressure and nitric oxide system function in renal hypertensive rats. Saranya R, Kalaivani P, Ramakrishnan G, Saravana Babu C, Venkatesh J. Feb 28 and March 01’2011, Bioconcorrenza, TNAU, Coimbatore. [Best Paper Award-1st Prize]
- National Congress on Bioscience Research. Ethiraj College for Women 26th and 27th August 2011. Neuroprotective effect of telmisartan, an angiotensin receptor-1 antagonist on MPTP model of Parkinsonism in C57BL/6J mice. Sathiya S*, Kalaivani P, Jyothi Priya R, Pramila B, Venkatesh J, Saravana Babu C, Thanikachalam S Neurobiology and Biobehavioural Research Division, Centre for Toxicology and Developmental Research, Sri Ramachandra University, Chennai, TN, India.
- Preischemic treatment with Benzamide, a PARP inhibitor, attenuated the excitotoxicity and cytokine gene expression in middle cerebral artery occluded rats. Sathiya S*, Sunil AG, Kalaivani P, Venkatesh J, Saravana Babu C, Thanikachalam S Center for Toxicology and Developmental Research (CEFT) Sri Ramachandra University, Chennai. National Seminar on Recent Trends in Biochemistry 13th October 2009. Auxilium College Gandhi Nagar, Vellore-632 006.
- An Investigation on the role of 3-Aminobenzamide on Neurotropic factors (BDNF and GDNF) Expression on 3-NPA induced Huntingtons disease. V. Ranju, S.Sathiya, B. Pramila, P.Kalaivani, A.G. Sunil, C. Saravana Babu, J.Venkatesh. Life Science TechFest Biozone on Sep 6th and 7th 2012. Dr.

M.G.R. Educational and Research Institute E.V.R. Periyar Salai, Maduravoyal, Chennai - 600 095. (Oral Presentation won the Second Prize).

- Preischemic treatment with L-NAME, a nitric oxide Synthase inhibitor, exerts neuroprotective effect in Middle Cerebral Artery occluded and reperfused rats. B.Pramila, P.Kalaivani, S.Sathiya, V.Ranju, A.G.Sunil, C.Saravana Babu, J.Venkatesh. Life Science Tech Fest Biozone on Sep 6th and 7th 2012. Dr. M.G.R. Educational and Research Institute E.V.R. Periyar Salai, Maduravoyal, Chennai - 600 095.
- Neuroprotective effect of Telmisartan in MPTP model of Parkinsonism: Histopathological and Immunohistochemical evidences. S.Sathiya, V.Ranju, B.Pramila, P.Kalaivani, C.Saravana Babu. National Symposium "Emerging Horizons on Biotechnology - Challenges and Prospects" 21-22 September 2012. Apha Arts and Science College Porur Chennai 600 116.
- V. Ranju, S.Sathiya, B. Pramila, P.Kalaivani, A.G. Sunil, C. Saravana Babu, J.Venkatesh. Combination therapy in Huntington's disease: Synergistic Effects of Memantine and 3-aminobenazamide. National Symposium "Emerging Horizons on Biotechnology - Challenges and Prospects" 21-22 September 2012. Apha Arts and Science College, Porur, Chennai 600 116. (Oral Presentation won the First Prize).
- Anti-Parkinsonian effect of Telmisartan: Neurological and immunohistochemical evidences in C57BL/6J Mice. S.Sathiya, V.Ranju, B.Pramila, P.Kalaivani, C.Saravana Babu. Life Science Tech Fest Biozone on Sep 6th and 7th 2012. Dr. M.G.R. Educational and Research Institute E.V.R. Periyar Salai, Maduravoyal, Chennai - 600 095.

THESIS WORK DONE DURING POST GRADUATION/PHD

- ✓ **M.Phil** : Antiulcer activity of erthrina in Sprague Dawley rats.
- ✓ **PhD** : A study on the therapeutic time window and synergistic neuroprotective effects of dihydrokinate and 3 amino benzamide in rats subjected to transient focal cerebral ischemia

AWARDS RECEIVED

Nil

INNOVATIVE ACTIVITIES/INTERVENTIONS IN THE AREA OF EXPERTISE

PATENT - (466/CHE/2012) A Novel Herbal Formulation for Treating Obesity

MEMBERSHIP

Membership of Professional Societies

1. ISN - International Society for Neurochemistry
2. SNCI - Society for Neurochemistry, India

Member of the Institutional Committees,

Nil