

## **Dr. Ravikiran T**

### **Professor**

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### **Research Interest**

My research is mainly focused on understating the importance of medicinal plants and their bioactive compounds in the modulation of age-related cardiovascular and neurological disorders. Our studies also identified key proteins modulated with physical exercise and aging in the cerebral cortex and hippocampus and is recognised as one of the proteomic research laboratory in India. We are currently working on nanoencapsulation of bioactive compounds for drug delivery against Alzheimer's and Parkinson's disease.

### **Academic qualification**

**B.Sc. CBZ** - Bangalore University (1995)

**M.Sc. Zoology** - Bangalore University (1997)

**M.Phil.** - Bangalore University (1999)

**Ph.D.** - Bangalore University (2005)

### **Selected Research publications**

- Asha Devi, S and **Ravikiran.T.** Regional responses in antioxidant system to exercise training and dietary vitamin E in aging rat brain. ***Neurobiol Aging.*** 25: 501-508 (2004) **IF 6.0.**
- **Ravikiran.T.**, Subramanyam, M.V.V and Asha Devi, S. Swim exercise training and adaptations in the antioxidant defense system of myocardium of old rats: relationship to swim intensity and duration. ***Comp. Biochem. Physiol. B*** 137: 186-194 (2004) **IF 3.0.**

- **Ravikiran.T.**, Subramanyam, M.V.V., Prathima,S and Asha Devi, S. Blood lipid profile and myocardial superoxide dismutase in swim-trained young and middle-aged rats: comparison between left and right ventricular adaptations to oxidative stress. *Journal of Comparative Physiology B*. 176: 742-762 (2006) **IF 2.8**.
- **Ravikiran.T** and Aruna, H.K. Antioxidant enzyme activities and markers of oxidative stress in the life cycle of earthworm *Eudrilus eugeniae*. *Italian J. of Zoology*. 77: 144-148. (2010) **IF 1.0**.
- SK Middha, T Usha and **T RaviKiran**. Influence of *Punica granatum L.* on region specific responses in rat brain during Alloxan-Induced diabetes. *Asian J. Tropical Biomedicine*. 2: S905–S909. (2012) .
- S Anand, SA Devi and **T Ravikiran**. Differential expression of the cerebral cortex proteome in physically trained adult rats. *Brain Res. Bull.* 104:88-91. (2014) **IF 3.5**.
- Santhosh Anand, Vani R and **Ravikiran T**. Effect of age and physical activity on oxidative stress parameters in experimental rat model. *Int. J. Clin. Exp. Physiol.* 2:185-190.(2015).
- Modulatory effects of *Decalepis hamiltonii* extract and its compounds on the antioxidant status of the aging rat brain. *J Pharm Bioallied Sci*. 9: 8–15. (2017).
- **T Ravikiran**, R Sowbhagya, SK Anupama, S Anand and D Bhagyalakshmi. Age-related changes in the brain antioxidant status: modulation by dietary supplementation of *Decalepis hamiltonii* and physical exercise. *Mol. Cell. Biochem.* 419: 103-113. (2016) **IF 2.8**.
- Anupama S K, Sowbhagya R, Bhagyalakshmi D, Vijay K and **Ravikiran T**. *Decalepis hamiltonii* protects H9c2 cells ganist H<sub>2</sub>O<sub>2</sub> induced oxidative stress and apoptosis through modulating antioxidant status. **Medicinal Plants: Int J Phytomed and Related Industries**. 11:87-94. (2019).
- Anupama S K, Sowbhagya R, Santosh Anand, Bhagyalakshmi D, Mamatha M G and **Ravikiran T**. *Decalepis hamiltonii* and its bioactive

compounds protects isoproterenol-induced myocardial oxidative stress in rats. **Pharmacognosy Magazine**. 15(64): 320-327. (2019) **IF 1.7**.

- Bhagyalakshmi D, Anupama S K, Sowbhagya R, Santosh Anand and **Ravikiran T**. Exercise and Dietary Supplementation of *Hemidesmus indicus* Improves Brain Antioxidant Status in Rats. **Pharmacognosy Magazine**. 16(67): 21-26 (2020) **IF 1.5**
- Bhagyalakshmi D, Sowbhagya R, Santosh Anand, Anupama S K, Mamatha M G and **Ravikiran T**. Swimming exercise and dietary supplementation of *Hemidesmus indicus* modulates cognitive decline by enhancing brain derived neurotrophic factor expression in rats. **National Journal of Physiology, Pharmacy and Pharmacology**. 9 (10): 1-5 (2019).
- **Tekupalli R**, Anand S, Ramachandregowda S, Kariyappa AS, Vadde R. Biomarkers for Hepatocellular Carcinoma– An Updated Review. **Critical Reviews™ in Oncogenesis**.26(1). (2021).
- **Ravikiran T**, Anand S, Ansari MA, Alomary MN, AlYahya S, Ramachandregowda S, Alghamdi S, Sindhghatta Kariyappa A, Dundaiah B, Madhugiri Gopinath M, Sultana S. Fabrication and in vitro Evaluation of 4-HIA Encapsulated PLGA Nanoparticles on PC12 Cells. **International Journal of Nanomedicine**. 17:5621-32. (2021) **IF 6.3**.
- Ambujakshi NP, **Ravikiran T**, Raveesha HR. Influence of elicitors on the enhancement of camptothecin accumulation and antioxidant potential in callus cultures of *Chonemorpha fragrans*. **South African Journal of Botany**. Nov 1;150:225-32.((2022) **IF 3.0**.
- Anupama SK, Ansari MA, Anand S, Sowbhagya R, Sultana S, Puneekar SM, **Ravikiran T**, Alomary MN, Alghamdi S, Qasem AH, Aljuaid A. Decalepis hamiltonii and its bioactive constituents mitigate isoproterenol-induced cardiotoxicity in aged rats. **South African Journal of Botany**. 1;151:25-33. (2022) **IF 3.0**.
- Shobha B, Ashwini BS, Ghazwani M, Hani U, Atwah B, Alhumaidi MS, Basavaraju S, Chowdappa S, **Ravikiran T**, Wahab S, Ahmad W. Trichoderma-Mediated ZnO Nanoparticles and Their Antibiofilm and Antibacterial Activities. **Journal of Fungi**. 18;9(2):133 (2023) **IF.5.7**.

## **Books chapters published:**

- **T. Ravikiran**, R. Vani, S. Anand. Differential Expression of the Brain Proteome in Physical Training. In: Ronald Rosss Watson (ed) Physical activity and the aging brain. 1<sup>st</sup> edn. Elsevier, London, pp 21-28 (2017).
- **Ravikiran T** Anupama S K, Sowbhagya R, Santosh Anand, Bhagyalakshmi D, Mamatha M G Neuroprotective effects of mangrove plants. In: JK Patra, RR Mishra, H Thatoi (ed).. 1<sup>st</sup> edn. Elsevier, London, pp 261-273 (2020).
- **Tekupalli, R.**, Anand, S., Ramachandregowda, S., Kariyappa, A.S., Dundaiah, B. Immunomarkers for Detection of GI Malignancies. In: Vadde, R., Nagaraju, G.P. (eds) Immunotherapy for Gastrointestinal Malignancies. Diagnostics and Therapeutic Advances in GI Malignancies. Springer, Singapore. pp. 41-49. (2020).
- Anand S, Lakshmikanth RR, Manjula KR, Jayashree DR, **Ravikiran T**. Aging: Impact of Gut Microbiota. In Gut Microbiome in Neurological Health and Disorders). Singapore: Springer Nature Singapore. pp. 71-82. (2022).
- **Tekupalli R**, Anand S, Ramachandregowda S, Kariyappa AS. Promising biomarkers for liver cancer. In Theranostics and Precision Medicine for the Management of Hepatocellular Carcinoma, Vol. 2 pp. 195-208. Academic Press. (2022).
- Gupta MK, Gouda G, Sultana S, Puneekar SM, Vadde R, **Ravikiran T**. Structure-related relationship: Plant-derived antidiabetic compounds. In Atta-ur-Rahman (ed) Studies in Natural Products Chemistry. 1<sup>st</sup> edn. Elsevier, London, pp. 241-295 (2023).

## **Membership of societies/University**

Life member for the Society of Biological Chemists.

Life member for the Society for Free Radical Research - India

Life member for Indian Science congress Association

Life member for Proteomic Society of India

BOE member in Biotechnology (PG)- Bangalore University

BOE member in Molecular Biology (PG)- Bangalore University

BOE member in Biotechnology (PG)- Bengaluru City University

BOE member in Food technology (PG)- Bangalore University

BOE member in Biotechnology (PG)- Vijayanagara Sri Krishnadevaraya University

BOE Chairman in Biotechnology and Microbiology- (PG)- Bengaluru City University

BOS member in Biotechnology (PG)- Bangalore University

BOS member in Biotechnology (PG)- Bengaluru City University

### **Research projects-ongoing/completed**

**UGC- MRP project titled:** Proteomic Analysis of Protein Carbonyls in rat brain: Effect of exercise and Aging. (2009-12). (Completed)

**BUIRF (Bangalore University) Project titled:** Impact of exercise and dietary supplementation of root extract of *Decalepis hamiltonii* and antioxidant system in aging rat brain. (2011-12). (Completed)

**DST-WOS-A (Mentor) Project titled:** Neuroprotective effects of *Decalepis hamiltonii* (2012-20105) (Completed)

**Bangalore University Project titled:** Neuroprotective potential of green synthesized cerium oxide nanoparticles. (2021-23) (Ongoing)

**VGST CISEE Project titled:** Fabrication of chitosan-loaded 4-Hydroxyisophthalic acid nanoparticles for Alzheimer's disease. (2023-24) (Ongoing).

### **Research Guidance:**

#### **Awarded**

**Mr. Santosh Anand** worked under UGC MRP project

**Mrs. Sowbhagya R** worked under DST (WOS-A) project

**Mrs. Anupama** (UGC- BSR fellowship)

**Ms. Bhagyalakshmi D** (Rajiv Gandhi National Fellowship)

**Mrs. Mamatha M G** (State Govt. OBC fellowship)