



## Textbook of Neurobiology

Deepak Sharma, Rameshwar Singh & Sangeeta Singh

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### About the Book

Neurobiology deals with the study of structure and functions of the nervous system. The brain is the most important organ of the nervous system, and it makes us human since it is the seat of our behaviour. Nerve cells (neurons) are the basic building blocks of the nervous system (or the brain) in the same way that elementary atomic particles and forces are the building blocks of physical matter. Neural function depends on the coordinated action of neurons. Therefore, the basic principles and mechanisms of neurophysiological functions from molecular, genomic to cellular-organismal levels form the central theme of the book. Mathematics has been used when considered essential; emphasis is given to the development of qualitative intuitive understanding of complex functions. For understanding the nervous system or the brain it is essential to learn how single cell and molecules in the nervous system function to produce electrical activity. Neuroelectric phenomena have thus been duly emphasized in the text. Pathological, pathophysiological aspects of neurobiological phenomena have also been fairly focused on.

### Table of Contents

1. Organization of the Nervous Tissue into Nervous System
2. Developmental Neurobiology
3. The Plasma Membrane and Excitability
4. The Action Potential
5. Synaptic Transmission
6. Sensory Systems: Cutaneous Sensation and Pain Sensation
7. Sensory System: Visual System
8. Sensory System: Auditory System
9. Sensory System: The Vestibular System
10. The Olfactory System: The Sense of Smell
11. The Gustatory System: The Sense of Taste
12. Proprioception
13. Motor Systems
14. Biological Rhythms
15. Learning and Memory
16. Neural Control of Cardiovascular System
17. Central Nervous System: Neurodegenerative Disorders
18. Epilepsy and Seizures
19. Emotions
20. Language and Speech
21. Neural Control of the Respiratory System
22. Psychiatric Disorders

References

Index

### About the Author

**Deepak Sharma** :- graduated as Zoologist (M.Sc) from Kurukshetra University, Kurukshetra, Haryana and received his PhD in the year 1984 for his studies on development of brain consequent to maternal protein malnutrition. Following post-doctoral training at School of Life Sciences, Jawaharlal Nehru University, New Delhi, INDIA, he joined as a faculty in the same department in the year 2000, rising to his current rank of Professor in 2011. His research interest focuses on validation of antioxidative agents including phytopharmacological agents against ageing brain and its dysfunctions. He has been teaching different aspects of animal sciences in general and Neurophysiology and brain functions in particular from last twenty years to the post graduate and M.phil/Ph.D students.

**Rameshwar Singh** :- graduated (B.Sc ,M.Sc. Ph.D) as a zoologist from Lucknow university, and did his post doctoral studies in Neuroscience as an International brain Research/UNESCO fellow at the Netherlands Central Institute of Brain Research, Amsterdam, and in Developmental Biology & Cell Physiology as an International Research Team member at the International Embryological Institute (Hubrecht Laboratory), Utrecht, Netherlands. He joined the School of Life Sciences, JNU in 1976 and before that he had served as the faculty at Lucknow University and Rajasthan University. He superannuated from Jawaharlal Nehru University in July 2000 as Professor of Neurobiology.

**Sangeeta Singh** :- did her Ph.D in Neuroscience in 1999 from School of Life Sciences, Jawaharlal Nehru University, New Delhi, INDIA. She worked as post doctoral fellow till 2001 and thereafter joined as faculty in the Department of Zoology, Bareilly College, Bareilly, U.P. rising to her current position as Associate Professor. She has been teaching different disciplines in Zoology to under and post graduate students.