

## Cellular and molecular methods in neuroscience research /

Merighi, Adalberto Carmignoto, Giorgio

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Laboratory Manual Electronic books Laboratory manuals

Monografía

Analysis of the neural tissue presents unique and peculiar technical problems encountered in everyday bench work. Numerous books dealing with cellular and molecular protocols for general use in cell biology are available, but few are specifically devoted exclusively to neurobiology. Moreover, the "cross-talk" between researchers with different backgrounds, i.e. histologists, cell and molecular biologists and physiologists, is still quite difficult, and very often one remains somehow "confined" to his or her own specific field of expertise never daring to explore "mysterious" lands unless having the support of a big laboratory beyond. The general idea beyond this project was to put together the contributions from a number of well- known neuroscientists to produce a book that offers a survey of the most updated techniques for the study of nerve cells. After a long time spent doing research in the neuroscience field, and having acquired a good technical background in certain specific fields of neurobiology we have realized how difficult is to be able to step into a different technology. This book endeavors to assist in that goal

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**Contenido:** Analyses of Intracellular Signal Transduction Pathways in CNS Cells -- Confocal and Electron Microscopic Trakcking of Internalized Neuropeptide/Receptor Complexes -- Transfection Methods for Neurons in Primary Culture -- Polyethylenimine: a Versatile Cationic Polymer for Plasmid-based Gene Delivery in the CNS --Trasfection of GABAA Receptor with GFP-Tagged Subunits in Neurons and HEK293 Cells -- Neuronal Transfection Using Particle-Mediated Gene Transfer -- Analysis of Gene Expression in Genetically Labeled Single Cells -- Immunocytochemistry and In Situ Hybridization: Interest of their Combinations for Cytofunctional Approaches of Central and Peripheral Neurons -- In Situ Reverse Transcriptase PCR for Detection of mRNA in the CNS -- Immunocytochemical Labeling Methods and Related Techniques for Ultrastructural Analysis of Neuronal Connectivity -- Combined electrophysiological and morphological analysis of CNS neurons -- Tract -Tracing Methods at the Light Microscopy Level -- Tract-tracing Methods at the Ultrastructural Level -- In vivo Analysis of Cell Proliferation and Apoptosis in the CNS -- Confocal Imaging of Nerve Cells and their Connections -- Confocal Imaging of Calcium Signaling in Cells from

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