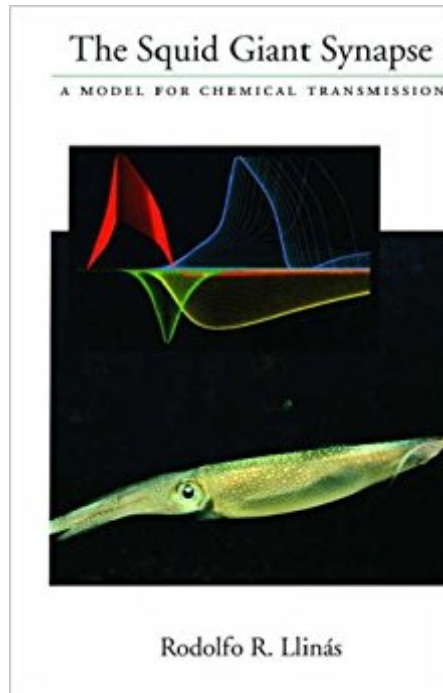


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The Squid Giant Synapse: A Model For Chemical Transmission



Synopsis

The squid giant synapse is the single most important model for investigating the transmitter release mechanism in chemical junctions. This unique book, by a leading expert in the field, gives a concise overview of all that has been learned about synaptic transmission in this superb model system. It covers in detail the biophysics of the voltage-dependent calcium currents, calcium concentration microdomains, and much of the molecular basis for the triggering of the secretory event. Ideal for graduate and undergraduate courses, the book includes PC and Macintosh versions of two programs for simulating and manipulating any aspect of synaptic transmission. One program is a modeling tool designed for working neuroscientists, and the other teaches the basic principles of synaptic transmission by allowing students to alter the parameters, essentially without limits, and see the effects on the action potential over time. Anyone studying this central topic of neuroscience will find this book an invaluable resource.

Book Information

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Customer Reviews

Review of "The Squid Giant Synapse" a model for chemical transmission" by Rodolfo R. Llinas. It was a pleasure to read this small book because Professor Llinas has managed to review his work and that of others within 160 pages. Llinas has written a very readable book that traces the history of transmission at the synapse. He has covered this difficult subject synthesizing ultrastructure, electrophysiology and molecular biology. The writer has been prominent in this field for 30 years and the book reflects his deep understanding of the subject. Dr. Llinas has managed to incorporate

the major findings of some 500 papers into a working hypothesis of synaptic transmission. In spite of the complexity of the subject there are few errors. On page 65 microdomains should be in square microns and not square millimeters but this typographical error should be obvious when looking at Figure 3.2G and Plate 8. This little book is a must for graduate students and neuroscientists in general because it serves as both a starting reference and as a working text. The index is very helpful to find definitions used in the field (a glossary would be helpful). The software shows the relationship of the presynaptic calcium current and postsynaptic voltage. This program will be instructive to students in understanding the importance of calcium dependencies on transmitter release. The Squid Giant Synapse should be a companion with Nerve, Muscle and Synapse by B.Katz and The Physiology of Synapses by J.C. Eccles.

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