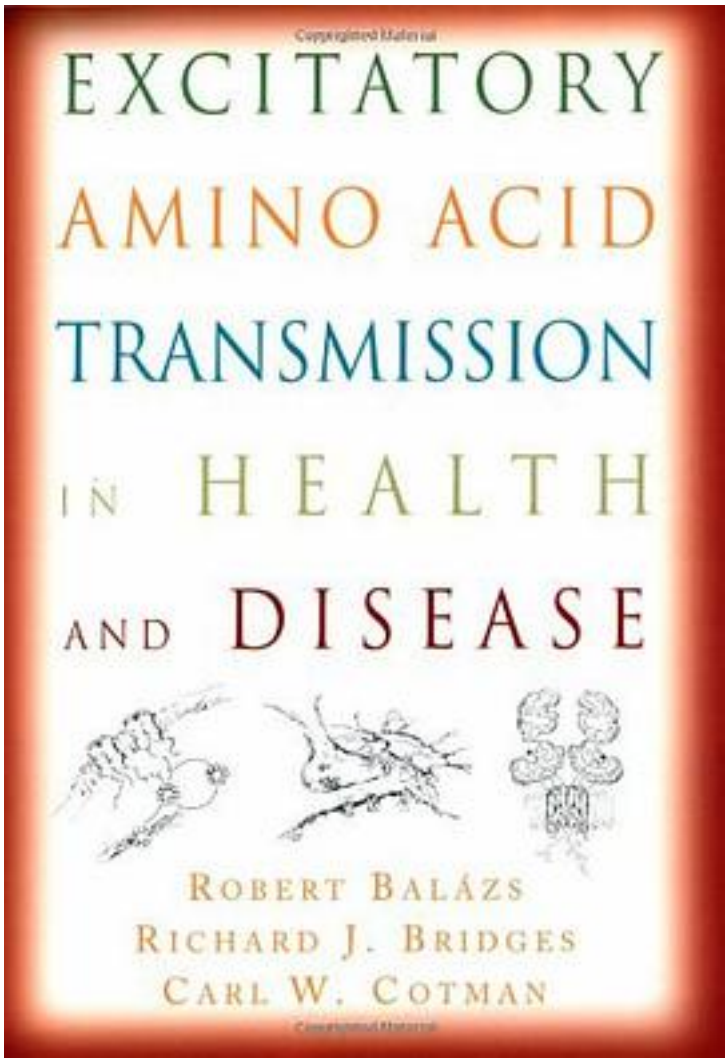
Excitatory Amino Acid Transmission in Health and Disease



Excitatory Amino Acid Transmission in Health and Disease_下载链接1_

著者:Balazs, Robert/ Bridges, Richard J./ Cotman, Carl W./ Cotman, Carl W. (ILT)

出版者:Oxford Univ Pr

出版时间:2005-9

装帧:HRD

isbn:9780195150025

Glutamate is the major excitatory neurotransmitter in the mammalian central nervous system (CNS). It regulates normal CNS function, is a major participant in pathology, and serves learning, memory, and higher cognitive functions. The 12 chapters of this book provide the first comprehensive coverage of all the major features of glutamate as excitatory neurotransmitter. The book begins with a valuable historical backdrop. Building from a chapter on the common structure of glutamate receptors, several others cover the major ionotropic receptors, their structure, function, and pharmacology. A follow-up chapter discusses the metabotropic receptors that are directly coupled to second messenger metabolism. A central theme of the book is the capacity of the excitatory amino acid system to contribute to the diverse array of signaling systems in the CNS as a direct result of the large assortment of receptors (including, for the ionotropic receptors, various subunits) the combination of which determine distinct functional properties. A recent development in the field discussed in several chapters is the biochemical characterization of a supermolecular protein complex, the post-synaptic density, that makes the unique structure of excitatory synapses. This complex subserves the experience-dependent modulation of synaptic strength and synaptic plasticity, and gives the synapse the capacity to change dynamically in both structure and receptor composition. Drawing on the individual properties of the receptors, transporters, and functional architecture of the synapse, the concluding chapters describe the functional integration of these components in the more complex physiological processes of plasticity and pathology. Recognition that the regulation of excitatory amino acid receptor activity underlies the pathology of many neurological diseases, including stroke, Alzheimer's disease and schizophrenia, has opened up an exciting frontier that will allow the translation of our understanding of these basic mechanisms into new concepts of pathology and new therapeutic strategies. This book will be invaluable for neuroscientists, pharmacologists, neurologists, and psychiatrists, and for their students and trainees.

作者介绍:

目录:

标签

评论

Excitatory Amino Acid Transmission in Health and Disease_下载链接1_

书评

Excitatory Amino Acid Transmission in Health and Disease_下载链接1_