

# Structure, Pharmacology, and Function of GABA<sub>A</sub> Receptor Subtypes

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## I. Chapter Overview

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Gamma-aminobutyric acid type A (GABA<sub>A</sub>) receptors are the most important inhibitory transmitter receptors in the central nervous system (CNS). They are chloride channels that can be opened by GABA and modulated by a variety of different drugs such as benzodiazepines, barbiturates, neuroactive steroids, anesthetics, and convulsants. These receptors are composed of five subunits that can belong to different subunit classes, giving rise to a large variety of distinct receptor subtypes. Depending on their subunit composition, these receptor subtypes exhibit distinct pharmacological and electrophysiological properties. In this chapter, the pharmacology of GABA<sub>A</sub> receptors is reviewed, new compounds interacting with these receptors are described, and novel receptor subtype-selective compounds are discussed. In addition, evidence for the function of distinct GABA<sub>A</sub> receptor subtypes in the brain is summarized. Finally, information