Drug discovery and development is a challenging, expensive and time consuming field of research, requiring contributions from chemists, pharmacologists, toxicologists, clinicians and practitioners. The ultimate goal is to generate a safe and biologically active drug which can stall, or even reverse, the pathological events that cause the disease condition. But in the search for the drug a host of tests and trials must be applied to evaluate the efficiency and safety of the newly developed molecule in the biological system. These trials or “screening methods” are critical. On their basis the new molecule either becomes accepted for usage, or is discarded forever.

Advances in drug research have forced the need for quicker, more automated screening methods, using molecular techniques applied in vitro, in vivo and in clinical systems. Researchers need to know the latest developments outside their own speciality. With this book, Professor Gupta has brought together in one coherent volume the most up to date developments of consolidated screening methods for biological systems.
By paying attention to the practical techniques used in academia and the commercial pharmaceutical industry, “Drug Screening Methods” will enjoy a broad readership, serving both the professional community and the student of pharmacology.

Contents:

Recent Advances - High Throughput Screening for High Speed Drugs Discovery • New Drug Screening Methods

Autonomic Nervous System - Drugs Acting on Sympathetic Nervous System • Drugs Acting on Parasympathetic Nervous System • Neuromuscular Blocking Agents

Central Nervous System - Neuropsychopharmacology • Antipsychotics • Antidepressants • Antiepileptics • Antiparkinsonian Drugs • Drugs for Learning and Memory • Antimigraine Drugs • Antiobesity Drugs • Analgesics Drugs • Anti-inflammatory Drugs

Gastrointestinal System - Antiulcer Drugs • Drugs Affecting Gut Motility • Absorption and Metabolism

Cardiovascular System - Antianginal Drugs • Cardiotonic Drugs • Antiarrhythmics • Antihypertensive • Antiplatelet Agents • Drugs for Male Erectile Dysfunction

Endocrinology - Hormones of Pituitary, Thyroid, Parathyroid, Adrenal Cortex, Ovary and Testes • Antidiabetic Agents

Ocular Pharmacology - Anticataract Agents • Antiglaucoma Drugs

Toxicity Studies - Ocular Toxicity • Hepatotoxicity • Renal Toxicity • Phototoxicity

Miscellaneous - Antiasthmatic Drugs • Anticancer Agents • Angiogenesis • Methods for the Detection of Apoptosis • Pharmacological Activity of Herbal Medicines • Anti-HIV Drugs • Agents for Immune-based Disorders
High-throughput screening (HTS) is a method for scientific experimentation especially used in drug discovery and relevant to the fields of biology and chemistry. Using robotics, data processing/control software, liquid handling devices, and sensitive detectors, high-throughput screening allows a researcher to quickly conduct millions of chemical, genetic, or pharmacological tests. Through this process one can rapidly identify active compounds, antibodies, or genes that modulate a particular