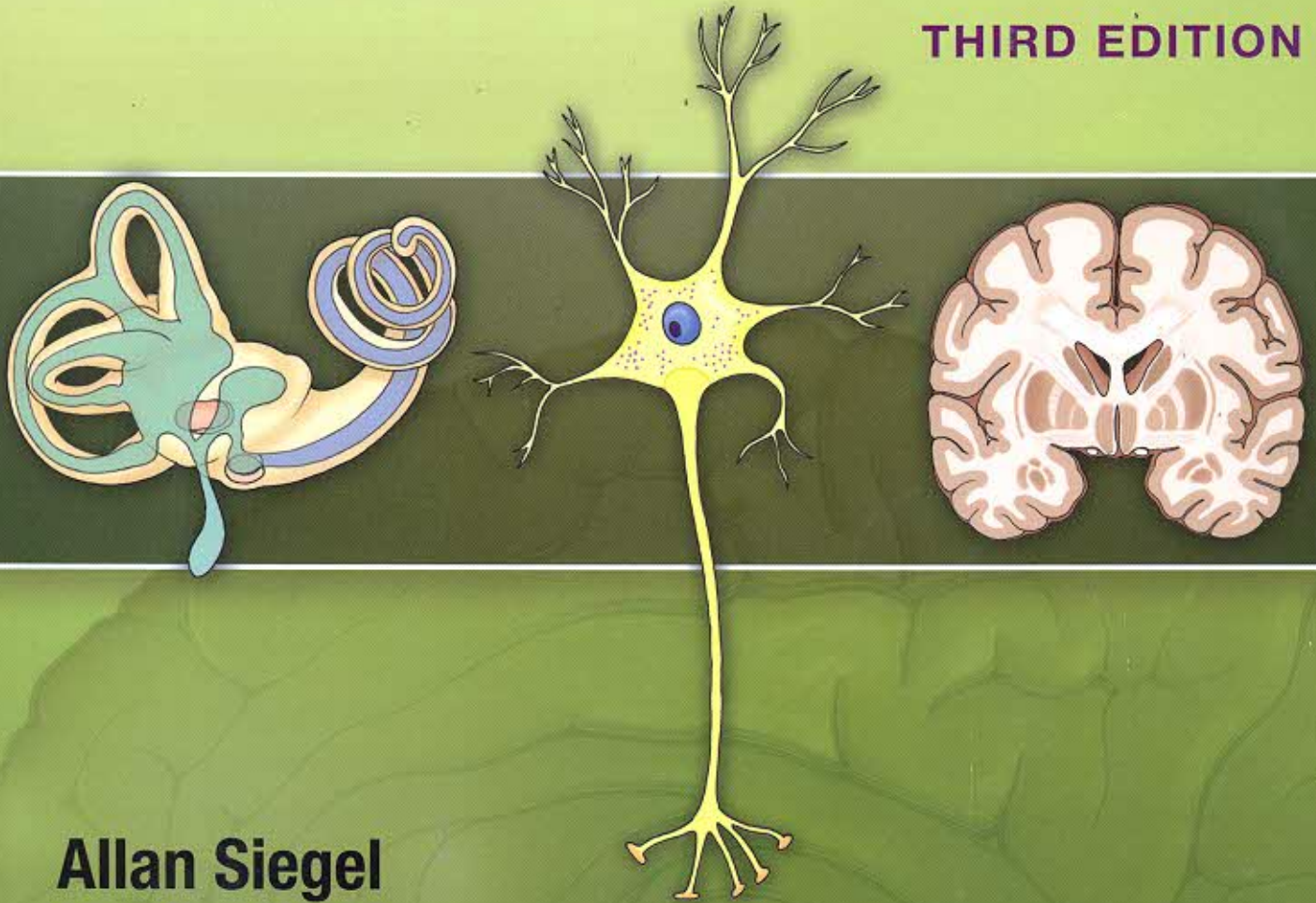


# Essential Neuroscience

THIRD EDITION




**Allan Siegel**  
**Hreday N. Saprú**



10044227

ห้องสมุด วพบ. สุรินทร์

 Wolters Kluwer

# Contents

Preface vi

Acknowledgments viii

## SECTION I Gross Anatomy of the Brain 1

- 1 Overview of the Central Nervous System 3
- 2 Development of the Nervous System 18
- 3 Meninges and Cerebrospinal Fluid 35

## SECTION II The Neuron 47

- 4 Histology of the Nervous System 49
- 5 Electrophysiology of Neurons 66
- 6 Synaptic Transmission 84
- 7 Neurotransmitters 95

## SECTION III Organization of the Central Nervous System 127

- 8 The Spinal Cord 129
- 9 Brainstem I: The Medulla 158
- 10 Brainstem II: Pons and Cerebellum 172
- 11 Brainstem III: The Midbrain 187
- 12 The Forebrain 197
- 13 The Cranial Nerves 216

## SECTION IV Sensory Systems 247

- 14 Somatosensory System 249
- 15 Visual System 264
- 16 Auditory and Vestibular Systems 287
- 17 Olfaction and Taste 306

## SECTION V Motor Systems 319

- 18 The Upper Motor Neurons 321
- 19 The Basal Ganglia 338
- 20 The Cerebellum 353

## SECTION VI Integrative Systems 375

- 21 The Autonomic Nervous System 377
- 22 The Reticular Formation 406
- 23 The Hypothalamus 425
- 24 The Limbic System 443
- 25 The Thalamus and Cerebral Cortex 462
- 26 Blood Supply of the Central Nervous System 490
- 27 Vascular Syndromes 504
- 28 Behavioral and Psychiatric Disorders 525

Glossary G-1

Index I-1