

Cambridge University Press

978-0-521-86441-1 - Neurochemistry of Sleep and Wakefulness

Edited by Jaime M. Monti, S. R. Pandi-Perumal and Christopher M. Sinton

Table of Contents

[More information](#)

Contents

List of contributors ix

Preface xv

Acknowledgements xvii

Abbreviations xix

I The neurochemistry of the states of sleep and wakefulness

1 Neurochemistry of the preoptic hypothalamic hypnogenic mechanism 3

DENNIS McGINTY, MD. NOOR ALAM, HUI GONG, MELVI METHIPPARA, NATALIA SUNTSOVA, RUBEN GUZMAN-MARIN, AND RONALD SZYMUSIAK

2 Neuroanatomical and neurochemical basis of wakefulness and REM sleep systems 23

RITCHIE E. BROWN AND ROBERT W. McCARLEY

3 Rapid eye movement sleep regulation by modulation of the noradrenergic system 59

BIRENDRA N. MALICK, VIBHA MADAN, AND SUSHIL K. JHA

II The influence of neurotransmitters on sleep and wakefulness

4 Gamma-aminobutyric acid and the regulation of paradoxical, or rapid eye movement, sleep 85

PIERRE-HERVÉ LUPPI, DAMIEN GERVASONI, LAURE VERRET, ROMAIN GOUTAGNY, CHRISTELLE PEYRON, DENISE SALVERT, LUCIENNE LEGER, AND PATRICE FORT

Cambridge University Press

978-0-521-86441-1 - Neurochemistry of Sleep and Wakefulness

Edited by Jaime M. Monti, S. R. Pandi-Perumal and Christopher M. Sinton

Table of Contents

[More information](#)

viii Contents

- 5 Acetylcholine modulates sleep and wakefulness: a synaptic perspective 109**

RALPH LYDIC AND HELEN A. BAGHDYAN

- 6 Histamine in the control of sleep-wakefulness 144**

MAHESH M. THAKKAR AND ROBERT W. MCCARLEY

- 7 Dopamine in behavioral state control 179**

DAVID B. RYE AND AMANDA A. H. FREEMAN

- 8 Glutamate neurotransmission and sleep 224**

IRWIN FEINBERG AND IAN G CAMPBELL

- 9 Serotonin and sleep-wake regulation 244**

JAIME M. MONTI, HÉCTOR JANTOS AND DANIEL MONTI

III Changing perspectives

- 10 Melatonin and its receptors: biological function in circadian sleep-wake regulation 283**

DANIEL P. CARDINALI, S. R. PANDI-PERUMAL AND LENNARD P. NILES

- 11 Sleep regulatory factors 315**

LEVENTE KAPÁS AND ÉVA SZENTIRMAI

- 12 Adenosine and sleep-wake regulation 337**

DAG STENBERG AND TARJA PORKKA-HEISKANEN

- 13 Prostaglandins and the regulation of sleep and wakefulness 363**

OSAMU HAYASHI AND YOSHIHIRO URADE

- 14 Neuropeptides and sleep-wake regulation 387**

LUIS DE LECEA

- 15 Orexins in sleep and wakefulness: rodent models of narcolepsy-cataplexy 402**

CHRISTOPHER M. SINTON AND JON T. WILLIE

- 16 The relevance of experimental pharmacology to currently available sleep-wake therapeutics 433**

RAFAEL J. SALIN-PASCUAL

Index 462

Color plate section located between pages 368 and 369.