

From the Biological Clock to Chronopharmacology

Edited by

Professor Dr. med. Björn Lemmer

Director of the Institute of Pharmacology and Toxicology,

Faculty of Clinical Medicine Mannheim

of the Ruprecht-Karls-University of Heidelberg, Germany

With contributions from

Rensing, L., Fleissner, Ge., Fleissner, Gue., Redfern, P. H.,

Waterhouse, J. M., Minors, D. S., Reinberg, A. E., Ashkenazi, I. E.,

Lemmer, B., Middeke, M., Moore, J. G., Lévi, F., Portaluppi, F.,

Vergnani, L., Cortelli, P., Lugaresi, E., Wirz-Justice, A.

With 67 figures and 12 tables

medpharm

medpharm Scientific Publishers Stuttgart 1996

Contents

In Memoriam	7
Molecular Biology of Circadian Clocks	
Ludger Rensing	9
The Circadian System of Scorpions. A Model System for Neurobiological Analysis of Endogenous Clocks. – How to Control Circadian Timing –	
Gerta and Günther Fleissner	23
Biological Rhythms and Signal Transduction: The Serotonergic System	
Peter H. Redfern	43
Endogenous and Exogenous Components of the Circadian Rhythm of Core Temperature in Humans	
James M. Waterhouse and David S. Minors	57
Chronopharmacology: Should We Individualize Drug Treatments?	
Alain E. Reinberg and Israel E. Ashkenazi	71
Circadian Rhythm in Blood Pressure: Signal Transduction, Regulatory Mechanisms and Cardiovascular Medication	
Björn Lemmer	91
Chronopathology of Blood Pressure in the Early Stage of Hypertension	
Martin Middeke	119
Chronobiology of the Gastro-Intestinal Tract: H₂-Receptor Antagonists and Proton Pump Inhibitors	
John G. Moore	129

Chronopharmacology of Anticancer Agents	
Francis Lévi	147
Fatal Familial Insomnia:	
A Chronobiological Model of Secondary Hypertension	
Francesco Portaluppi, Luciana Vergnani, Pietro Cortelli and Elio Lugaresi	171
Seasonal Affective Disorder and Light Therapy	
Anna Wirz-Justice	189
Index	201