

Neurotransmitters, Drugs and Brain Function.

Edited by Roy Webster

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ISBN: Hardback 0-471-97819-1 Paperback 0-471-98586-4 Electronic 0-470-84657-7

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Edited by

R. A. Webster

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JOHN WILEY & SONS, LTD

Chichester · New York · Weinheim · Brisbane · Singapore · Toronto

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Baffins Lane, Chichester,
West Sussex PO19 1UD, UK

National 01243 779777
International (+44) 1243 779777
e-mail (for orders and customer service enquiries): cs-books@wiley.co.uk
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Other Wiley Editorial Offices

John Wiley & Sons, Inc., 605 Third Avenue,
New York, NY 10158-0012, USA

WILEY-VCH Verlag GmbH, Pappelallee 3,
D-69469 Weinheim, Germany

John Wiley & Sons Australia, Ltd. 33 Park Road, Milton,
Queensland 4064, Australia

John Wiley & Sons (Asia) Pte. Ltd. 2 Clementi Loop #02-01,
Jin Xing Distripark, Singapore 129809

John Wiley & Sons (Canada), Ltd. 22 Worcester Road,
Rexdale, Ontario M9W 1L1, Canada

Library of Congress Cataloging-in-Publication Data

Neurotransmitters, drugs and brain function / edited by R. A. Webster
p. , cm.

Includes bibliographical references and index.

ISBN 0-471-97819-1

1. Neurotransmitters. 2. Neurotransmitter receptors. 3. Brain-Pathophysiology.
4. Psychopharmacology. I. Webster, R. A., Ph.D.
[DNLM: 1. Neurotransmitters-physiology. 2. Brain-drug effects. 3. Brain
Chemistry-drug effects. 4. Synaptic Transmission-drug effects. QV 126 N4955 2001]
QP364.7 .N479 2001
612.8'042-dc21

2001024354

British Library Cataloguing in Publication Data

A catalogue record for this book is available from the British Library

ISBN 0 471 97819 1

Typeset in 10/12pt Times from authors' disks by Dobbie Typesetting Limited, Tavistock, Devon
Printed and bound in Great Britain by Biddles Ltd, Guildford and King's Lynn
This book is printed on acid-free paper responsibly manufactured from sustainable forestry,
in which at least two trees are planted for each one used for paper production.

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Preface

This book is about neurotransmitters, the substances released from neurons to act on neurons. It covers what they do, how they do it and how their activity is involved in brain function and affected by drugs and disease.

After an overview of neurotransmitter systems and function and a consideration of which substances can be classified as neurotransmitters, section A deals with their release, effects on neuronal excitability and receptor interaction. The synaptic physiology and pharmacology and possible brain function of each neurotransmitter is then covered in some detail (section B). Special attention is given to acetylcholine, glutamate, GABA, noradrenaline, dopamine, 5-hydroxytryptamine and the peptides but the purines, histamine, steroids and nitric oxide are not forgotten and there is a brief overview of appropriate basic pharmacology.

How the different neurotransmitters may be involved in the initiation and maintenance of some brain disorders, such as Parkinson's disease, epilepsy, schizophrenia, depression, anxiety and dementia, as well as in the sensation of pain, is then evaluated and an attempt made to see how the drugs which are used in these conditions produce their effect by modifying appropriate neurotransmitter function (section C). The final section (D) deals with how neurotransmitters are involved in sleep and consciousness and in the social problems of drug use and abuse.

The contents are based on lectures given by the contributors, all of whom are experienced in research and teaching, in a neuropharmacology course for final-year BSc students of pharmacology, physiology, psychology and neuroscience at University College London. The text should be of value to all BSc students and postgraduates in those and related disciplines. Those studying medicine may also find it useful especially if working in neurology or psychiatry.

We have tried to make the book readable rather than just factual and so references have been kept to a minimum, especially in the early chapters on basic neuropharmacology and although more are given in the applied sections, they are selective rather than comprehensive.

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