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Guide to Receptors and Channels (GRAC), 4th edition

Abstract

The fourth edition of the *Guide to Receptors and Channels* is a compilation of the major pharmacological targets divided into seven sections: 7-transmembrane receptors, ligand-gated ion channels, ion channels, catalytic receptors, nuclear receptors, transporters and enzymes. These are presented with nomenclature guidance and summary information on the best available pharmacological tools, alongside suggestions for further reading.

Introduction

The great proliferation of drug targets in recent years has driven the need to provide a logically organized synopsis of the nomenclature and pharmacology of these targets. This is the underlying reason for this *Guide to Receptors and Channels*, distributed with the *British Journal of Pharmacology*, and produced in association with NC-IUPHAR, the Nomenclature Committees of the International Pharmacological Congress. Our intent is to produce an authoritative but user-friendly publication, which allows a rapid overview of the key properties of a wide range of established or potential pharmacological targets. The aim is to provide information succinctly, so that a newcomer to a particular target group can identify the main elements 'at a glance'. It is not our goal to produce all-inclusive reviews of the targets presented; references to these are included in the *Further Reading* sections of the entries. The *Guide to Receptors and Channels* presents each entry, typically a circumscribed target class family on, wherever possible, a single page, so as to allow easy access and rapid oversight.

Targets have been selected for inclusion where there is sufficient pharmacological information to allow clear definition or where, in our view, there is clear interest in this molecular class from the pharmacological community. Our philosophy has been to present data on human proteins wherever possible, both in terms of structural information and pharmacology. To this end, the Ensembl ID allows rapid access through a free online database (http://www.ensembl.org/) to several other species, including mouse and rat. From this database, links are also provided to structural information in a number of formats. Where structural or pharmacological information is not available for human targets, we have used data from other species. A priority in constructing these tables was to present agents which represent the most selective and which are available by donation or from commercial sources, now or in the near future.

The Guide is divided into seven sections, which comprise pharmacological targets of similar structure/function. These are 7-transmembrane receptors, ligand-gated ion channels, ion channels, catalytic receptors, nuclear receptors, transporters and enzymes. In comparison with the third edition of the *Guide to Receptors and Channels* (Alexander *et al*., 2008), we have added a number of new records, expanding the total by over 10%. As in the third edition, we have also included lists of 'orphan' 7-transmembrane and nuclear receptors. The preliminary pairings for orphan 7-transmembrane receptors provides information on targets, where there is some evidence for an endogenous ligand or a link to a disease or disorder.

The editors of the Guide have compiled the individual records, taking advice from many Consultants (listed on page S3). With each record, an indication is given of the status of the nomenclature, as proposed by NC-IUPHAR, published in *Pharmacological Reviews*. Where this guidance is lacking, advice from several prominent, independent experts has been obtained to produce an authoritative consensus, which attempts to fit in within the general guidelines from NC-IUPHAR (Vanhoutte *et al*., 1996). Tabulated data provide ready comparison of selective agents and probes (radioligands and PET ligands, where available) within a family of targets and additional commentary highlights whether species differences or ligand metabolism are potential confounding factors.

Correct citation format

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GRAC Editors/Authors

Stephen P.H. Alexander
School of Biomedical Sciences
University of Nottingham Medical School,
Nottingham NG7 2UH, UK.
E-mail: steve.alexander@nottingham.ac.uk

Alistair Mathie
Medway School of Pharmacy,
The Universities of Kent and Greenwich at Medway,
Central Avenue, Chatham Maritime,
Kent ME4 4TB.
E-mail: a.a.mathie@kent.ac.uk

John A. Peters
Centre for Neuroscience, Division of Medical Sciences,
Ninewells Hospital and Medical School,
The University of Dundee, Dundee DD1 9SY, UK.
E-mail: j.a.peters@dundee.ac.uk

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