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Foreword

The cloning of the human genome marks a revolution in medical sciences because all the targets of present and future drugs are in it. Thus, the annotation, names, and characterization of the molecular targets are crucial information for scientists and students throughout the world. IUPHAR[1] has addressed this by creating committees of the world's experts, and their deliberations are published on the NC-IUPHAR Web sites (http://www.iuphar-db.org/GPCR and http://www.iuphar-db.org/iuphar-ic) or in *Pharmacological Reviews*. The project is to annotate the proteins that are receptors or potential drug targets and list the principal chemical compounds that interact with them.

Nuclear hormone receptors are important transcriptional regulators involved in crucial physiological functions such as control of embryonic development, cell differentiation, and homeostasis and control functions associated with major diseases (e.g., cancer, osteoporosis, and diabetes). They are major pharmacological targets, and oestrogen receptors are the site of action of environmental pollutants (described in a joint IUPAC/IUPHAR/IUTOX series of reports devoted to environmental oestrogens in *Pure & Applied Chemistry*, volume 70, 1998). The receptors from the 48 genes encoding nuclear receptors in the human genome have been classified under the coordination of the NC-IUPHAR group leader Dr. Vincent Laudet (École Normale Supérieure, Lyon, France) via the subcommitees using a phylogenetically based nomenclature system. This full classification is also published in *Pharmacological Reviews* and was freely distributed at the 2006 IUPHAR meeting (July 2–July 6, Beijing).

Organization of NC-IUPHAR

The core committee has met twice yearly in Paris to approve the activities of >50 subcommittees and discuss and approve receptor nomenclature and the methodologies involved. The organization of the committee is described in full on the IUPHAR Web site. The subcommittees include over 300 contributors from academia and industry—experts in the nomenclature, pharmacological properties, signal transduction mechanisms, and physiological and pathological roles of receptors and ion channels. The subcommittee chairs validate the scientific documents. Groups of subcommittees working in particular fields are coordinated by a group leader who is a member of the core committee of NC-IUPHAR. NC-IUPHAR has appointed an editor, a technical committee for assessing methodologies, a receptor curator, and an evolving pharmacology committee to designate new receptors. Professor A. Harmar is chair of the database committee. Data in the database are definitive since terminology would be explicitly endorsed, as applicable, by NC-IUPHAR (drug classification) and by the related societies NC-IUBMB (biochemical nomenclature), HUGO, or IUPAC (systematic chemical names), with which there are regular interactions.

A full classification of voltage-gated ion channels has recently been published in the December 2005 issue of *Pharmacological Reviews*, edited by William A. Catterall and George Gutman. This publication completes the list of all the sequences related to this class of channels in the genome, organized by phylogenetic principles with their nomenclature and classification. Similarly, lists of all the receptors coupled to G proteins have been published in *Pharmacological Reviews* and listed on the IUPHAR Web site, with six monthly updates approved by the evolving pharmacology committee (Anthony Davenport, chair). To these classifications we now add the nuclear receptors that are present in the human genome.

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[1] Abbreviations: IUPHAR, International Union of Pharmacology; NC, Nomenclature Committee; IUPAC, International Union of Pure and Applied Chemistry; IUTOX, International Union of Toxicology; IUBMB, International Union of Biochemistry and Molecular Biology; HUGO, Human Genome Organisation.

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