

EDITORIAL

New updated GRAC Fifth Edition with searchable online version Launch of new portal *Guide to Pharmacology* in association with NC-IUPHAR Transporter-Themed Issue

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Linked Articles

To access the new edition of GRAC
visit www.GuidetoPharmacology.org
and to view the other articles in this
themed section on Transporters visit
[http://dx.doi.org/10.1111/
bph.2011.164.issue-7](http://dx.doi.org/10.1111/bph.2011.164.issue-7)



Guide to Receptors and Channels (GRAC) Fifth Edition

The *British Journal of Pharmacology's* (BJP) GRAC is generated by Steve Alexander, Alistair Mathie and John Peters, with consultation from numerous experts in the various fields (Alexander *et al.*, 2011). It is a compilation of the major pharmacological targets divided into seven sections: G protein-coupled 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. The GRAC presents each entry, typically a circumscribed target class family on, wherever possible, a single page, so as to allow easy access and rapid oversight.

The intention of GRAC 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 was 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 or, for many targets, the International Union of Basic and Clinical Pharmacology

(IUPHAR) database (<http://www.iuphar-db.org>), which provides extensive information and previously was located and curated separately.

Guide to Pharmacology open access portal

We are now launching this new portal to gather in one place the previously separate information on drug targets of GRAC and IUPHAR-DB. Over time, these will steadily be integrated and the portal will be developed as a one-stop shop for information on drug targets and other information of assistance to pharmacology and drug development in academia and industry.

This has been made possible through collaboration between the British Pharmacological Society and IUPHAR. The free online portal has been created by the IUPHAR Database Team (Joanna Sharman, Chido Mpmhanga, Adam Pawson, Helen Benson, Vincent Bombail and Tony Harmar) in the Centre for Cardiovascular Science, University of Edinburgh, at <http://www.GuidetoPharmacology.org>.

Our long-term plan is to create an open access database providing *quantitative* pharmacological information on all of the targets of current prescription medicines and other plausible targets of future small molecule drugs.

Searchable online version of GRAC accessed through *Guide to Pharmacology* portal

The database team have also created a searchable online version of GRAC Fifth Edition freely available via the portal and enhanced with hyperlinks to additional information in the IUPHAR database, curated chemical structures and citations in PubMed. www.GuidetoPharmacology.org

Transporter-Themed Section to accompany New Transporter Section of GRAC

Reflecting the new Transporter section in GRAC, this issue of BJP contains a 'Transporters' Themed Section. This comprises reviews to stimulate a greater awareness of, and interest in, transporters as alternative drug targets, as well as reminding pharmacologists of the dominant role of transporters in influencing the efficacy of medicinal agents by altering their biodistribution.

In comparison with the previous edition of GRAC, a number of new records have been added, expanding the total to include over 1600 protein targets. The expansion for the Fifth Edition comes primarily from including the full complement of transporters defined in the human genome, as well as increasing the content on enzymes. <http://dx.doi.org/10.1111/bph.2011.164.issue-7>

What else is new for the Fifth Edition?

More on preliminary pairings of orphan receptors have 'Preliminary pairings'.

The catalytic receptor section has been expanded: Cytokine receptors, Receptor serine/threonine kinases and Receptor tyrosine phosphatases, Pattern recognition receptors, including Toll-like receptors. All 58 receptor tyrosine kinases are listed, divided into families, including insulin and fibroblast growth factor receptors, but also lists leukocyte tyrosine kinases, which lack endogenous ligands.

The section on enzymes is expanded and reorganized, focussing on themes. Adenylyl cyclases, soluble guanylyl cyclase and phosphodiesterases are coalesced under the heading of Cyclic nucleotide turnover.

In summary, this new accord between the BPS and IUPHAR allows the hardworking scientist easier access to those most precious (and at the same time apparently overwhelming) requirements for good science, the right information in the shortest time, and sets consistent international standards.

References

Alexander SPH, Mathie A, Peters JA (2011). Guide to Receptors and Channels (GRAC), 5th Edition. *Br J Pharmacol* 164: S1–S324.



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