VIP and PACAP receptors (version 2019.4) in the IUPHAR/BPS Guide to Pharmacology Database

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Abstract

Vasoactive intestinal peptide (VIP) and pituitary adenylate cyclase-activating peptide (PACAP) receptors (nomenclature as agreed by the NC-IUPHAR Subcommittee on Vasoactive Intestinal Peptide Receptors [64, 65]) are activated by the endogenous peptides VIP, PACAP-38, PACAP-27, peptide histidine isoleucineamide (PHI), peptide histidine methionineamide (PHM) and peptide histidine valine (PHV). VPAC₁ and VPAC₂ receptors display comparable affinity for the PACAP peptides, PACAP-27 and PACAP-38, and VIP, whereas PACAP-27 and PACAP-38 are >100 fold more potent than VIP as agonists of most isoforms of the PAC₁ receptor. However, one splice variant of the human PAC₁ receptor has been reported to respond to PACAP-38, PACAP-27 and VIP with comparable affinity [29]. PG 99-465 [115] has been used as a selective VPAC₂ receptor antagonist in a number of physiological studies, but has been reported to have significant activity at VPAC₁ and PAC₁ receptors [35]. The selective PAC₁ receptor agonist maxadilan, was extracted from the salivary glands of sand flies (Lutzomyia longipalpis) and has no sequence homology to VIP or the PACAP peptides [116]. Two deletion variants of maxadilan, M65 [180] and Max.d.4 [117] have been reported to be PAC₁ receptor antagonists, but these peptides have not been extensively characterised.

Contents

This is a citation summary for VIP and PACAP receptors in the Guide to Pharmacology database (GtoPdb). It exists purely as an adjunct to the database to facilitate the recognition of citations to and from the database by citation analyzers. Readers will almost certainly want to visit the relevant sections of the database which are given here under database links.

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citation for the relevant parts of the database, and also provides a reference list for the research cited by those parts.

Please note that the database version for the citations given in GtoPdb are to the most recent preceding version in which the family or its subfamilies and targets were substantially changed. The links below are to the current version. If you need to consult the cited version, rather than the most recent version, please contact the GtoPdb curators.

Database links

VIP and PACAP receptors
http://www.guidetopharmacology.org/GRAC/FamilyDisplayForward?familyId=67

Introduction to VIP and PACAP receptors
http://www.guidetopharmacology.org/GRAC/FamilyIntroductionForward?familyId=67

Receptors
- PAC₁ receptor
  http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=370
- VPAC₁ receptor
  http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=371
- VPAC₂ receptor
  http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=372

References


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Wei Y and Mojsov S. (1996) Tissue specific expression of different human receptor types for pituitary
adenylate cyclase activating polypeptide and vasoactive intestinal polypeptide: implications for their role in human physiology. *J. Neuroendocrinol.* 8: 811-7 [PMID:8933357]


