

PACAP Receptor (K-20): sc-15964

BACKGROUND

The vasoactive intestinal peptide (VIP) and the pituitary adenylate cyclase-activating polypeptide (PACAP) belong to a superfamily of peptide hormones that include glucagon, secretin and growth hormone releasing hormone. The effects of VIP and PACAP are mediated by three G-protein coupled receptors, VPAC1, VPAC2 and the PACAP Receptor (also designated PAC1-R). The VPAC receptors have equal affinities for VIP and PACAP, which stimulate the activation of adenylyl cyclase. Both VPAC1 and VPAC2 are abundantly expressed in brain and T cells, where they modulate neuronal differentiation and T cell activation, respectively. The PACAP Receptor is a seven transmembrane protein that produces at least eight isoforms by alternative splicing. Each isoform is associated with a specific signaling pathway and a specific expression pattern. The PACAP Receptor, which is thought to play an integral role in brain development, preferentially binds PACAP in order to stimulate a cAMP-protein kinase A signaling pathway.

REFERENCES

1. Shen, S., et al. 2000. Overexpression of the human VPAC2 receptor in the suprachiasmatic nucleus alters the circadian phenotype of mice. *Proc. Natl. Acad. Sci. USA* 97: 11575-1180.
2. Shioda, S. 2000. Pituitary adenylate cyclase-activating polypeptide (PACAP) and its receptors in the brain. *Kaibogaku Zasshi* 75: 487-507.
3. Bajo, A.M., et al. 2000. Expression of vasoactive intestinal peptide (VIP) receptors in human uterus. *Peptides* 21: 1383-1388.
4. Karacay, B., et al. 2000. Regulation of vasoactive intestinal peptide receptor expression in developing nervous systems. *Ann. N.Y. Acad. Sci.* 921: 165-174.
5. Vaudry, D., et al. 2000. Pituitary adenylate cyclase-activating polypeptide and its receptors: from structure to functions. *Pharmacol. Rev.* 52: 269-324.
6. Henning, R.J. et al. 2001. Vasoactive intestinal peptide: cardiovascular effects. *Cardiovasc. Res.* 49: 27-37.

CHROMOSOMAL LOCATION

Genetic locus: ADCYAP1R1 (human) mapping to 7p14.3; Adcyap1r1 (mouse) mapping to 6 B3.

SOURCE

PACAP Receptor (K-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of PACAP Receptor of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-15964 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

For research use only, not for use in diagnostic procedures.

APPLICATIONS

PACAP Receptor (K-20) is recommended for detection of PACAP Receptor of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

PACAP Receptor (K-20) is also recommended for detection of PACAP Receptor in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for PACAP Receptor siRNA (h): sc-40279, PACAP Receptor siRNA (m): sc-40280, PACAP Receptor shRNA Plasmid (h): sc-40279-SH, PACAP Receptor shRNA Plasmid (m): sc-40280-SH, PACAP Receptor shRNA (h) Lentiviral Particles: sc-40279-V and PACAP Receptor shRNA (m) Lentiviral Particles: sc-40280-V.

Molecular Weight of PACAP Receptor: 60 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Joo, K.M., et al. 2004. Distribution of vasoactive intestinal peptide and pituitary adenylate cyclase-activating polypeptide receptors (VPAC1, VPAC2, and PAC1 receptor) in the rat brain. *J. Comp. Neurol.* 476: 388-413.
2. Gillard, E.R., et al. 2006. A novel role for endogenous pituitary adenylate cyclase activating polypeptide in the magnocellular neuroendocrine system. *Endocrinology* 147: 791-803.
3. Lee, J.C., et al. 2010. Region-specific changes in the immunoreactivity of vasoactive intestinal peptide and pituitary adenylate cyclase-activating polypeptide receptors (VPAC₂ and PAC₁ receptor) in the aged rat brains. *Brain Res.* 1351C: 32-40.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.



Try **PACAP Receptor (1B5): sc-100315**, our highly recommended monoclonal alternative to PACAP Receptor (K-20).