

# PACAP Receptor (1B5): sc-100315

## 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

- 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.
- Shioda, S. 2000. Pituitary adenylate cyclase-activating polypeptide (PACAP) and its receptors in the brain. *Kaibogaku Zasshi* 75: 487-507.
- Bajo, A.M., et al. 2000. Expression of vasoactive intestinal peptide (VIP) receptors in human uterus. *Peptides* 21: 1383-1388.
- Karacay, B., et al. 2000. Regulation of vasoactive intestinal peptide receptor expression in developing nervous systems. *Ann. N.Y. Acad. Sci.* 921: 165-174.
- Vaudry, D., et al. 2000. Pituitary adenylate cyclase-activating polypeptide and its receptors: from structure to functions. *Pharmacol. Rev.* 52: 269-324.
- Henning, R.J., et al. 2001. Vasoactive intestinal peptide: cardiovascular effects. *Cardiovasc. Res.* 49: 27-37.
- Lara-Marquez, M., et al. 2001. Selective gene expression and activation-dependent regulation of vasoactive intestinal peptide receptor type 1 and type 2 in human T cells. *J. Immunol.* 166: 2522-2530.

## CHROMOSOMAL LOCATION

Genetic locus: ADCYAP1R1 (human) mapping to 7p14.3.

## SOURCE

PACAP Receptor (1B5) is a mouse monoclonal antibody raised against recombinant PACAP Receptor of human origin.

## PRODUCT

Each vial contains 100 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## STORAGE

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

## APPLICATIONS

PACAP Receptor (1B5) is recommended for detection of PACAP Receptor of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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

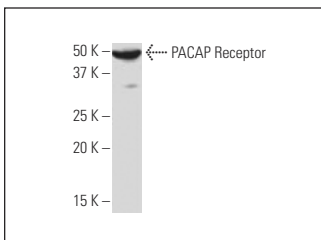
Molecular Weight of PACAP Receptor: 60 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200.

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

## DATA



PACAP Receptor (1B5): sc-100315. Western blot analysis of PACAP Receptor expression in HeLa whole cell lysate.

## SELECT PRODUCT CITATIONS

- Rafferty, S., et al. 2009. Rescue of functional F508del cystic fibrosis transmembrane conductance regulator by vasoactive intestinal peptide in the human nasal epithelial cell line JME/CF15. *J. Pharmacol. Exp. Ther.* 331: 2-13.
- Alcolado, N.G., et al. 2014. Cystic fibrosis transmembrane conductance regulator dysfunction in VIP knockout mice. *Am. J. Physiol., Cell Physiol.* 307: C195-C207.
- Haraguchi, S., et al. 2019. Light-at-night exposure affects brain development through pineal allopregnanolone-dependent mechanisms. *Elife* 8: e45306.
- Guo, X., et al. 2021. Pituitary adenylate cyclase-activating polypeptide protects against cognitive impairment caused by chronic cerebral hypoperfusion. *Mol. Neurobiol.* 58: 4309-4322.

## RESEARCH USE

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