SANTA CRUZ BIOTECHNOLOGY, INC.

VPAC2 (5B3): sc-135604

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The vasoactive intestinal peptide (VIP) and pituitary adenylate cylase-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., Spratt, C., Sheward, W.J., Kallo, I., West, K., Morrison, C.F., Coen, C.W., Marston, H.M. and Harmar, A.J. 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., Juarranz, M.G., Valenzuela, P., Martinez, P., Prieto, J.C. and Guijarro, L.G. 2000. Expression of vasoactive intestinal peptide (VIP) receptors in human uterus. Peptides 21: 1383-1388.
4. Karacay, B., O'Dorisio, M.S., Summers, M. and Bruce, J. 2000. Regulation of vasoactive intestinal peptide receptor expression in developing nervous systems. Ann. N.Y. Acad. Sci. 921: 165-174.
5. Vaudry, D., Gonzalez, B.J., Basille, M., Yon, L., Fournier, A. and Vaudry, H. 2000. Pituitary adenylate cyclase-activating polypeptide and its receptors: from structure to functions. Pharmacol. Rev. 52: 269-324.
6. Lara-Marquez, M., O'Dorisio, M., O'Dorisio, T., Shah, M. and Karacay, B. 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.
7. Henning, R.J. and Sawmiller, D.R. 2001. Vasoactive intestinal peptide: cardiovascular effects. Cardiovasc. Res. 49: 27-37.

CHROMOSOMAL LOCATION

Genetic locus: VIPR2 (human) mapping to 7q36.3.

SOURCE

VPAC2 (5B3) is a mouse monoclonal antibody raised against a partial recombinant protein mapping to an internal region of VPAC2 of human origin.

RESEARCH USE

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

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

VPAC2 (5B3) is recommended for detection of VPAC2 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 VPAC2 siRNA (h): sc-40283, VPAC2 shRNA Plasmid (h): sc-40283-SH and VPAC2 shRNA (h) Lentiviral Particles: sc-40283-V.

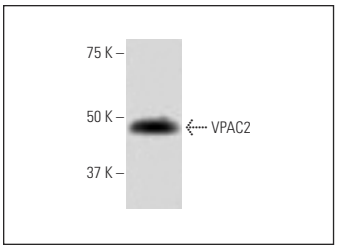
Molecular Weight of VPAC2: 65 kDa.

Positive Controls: IMR-32 cell lysate: sc-2409.

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



VPAC2 (5B3): sc-135604. Western blot analysis of VPAC2 expression in IMR-32 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Kittikulsuth, W., Nakano, D., Kitada, K., Uyama, T., Ueda, N., Asano, E., Okano, K., Matsuda, Y. and Nishiyama, A. 2023. Vasoactive intestinal peptide blockade suppresses tumor growth by regulating macrophage polarization and function in CT26 tumor-bearing mice. Sci. Rep. 13: 927.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.