

VPAC1 (B-4): sc-377152



The Power to Question

BACKGROUND

The vasoactive intestinal peptide (VIP) and 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: 11575-11580.
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.

CHROMOSOMAL LOCATION

Genetic locus: VIPR1 (human) mapping to 3p22.1.

SOURCE

VPAC1 (B-4) is a mouse monoclonal antibody raised against amino acids 31-160 mapping near the N-terminus of VPAC1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

VPAC1 (B-4) is available conjugated to agarose (sc-377152 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-377152 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-377152 PE), fluorescein (sc-377152 FITC), Alexa Fluor® 488 (sc-377152 AF488), Alexa Fluor® 546 (sc-377152 AF546), Alexa Fluor® 594 (sc-377152 AF594) or Alexa Fluor® 647 (sc-377152 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-377152 AF680) or Alexa Fluor® 790 (sc-377152 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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STORAGE

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

APPLICATIONS

VPAC1 (B-4) is recommended for detection of VPAC1 of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

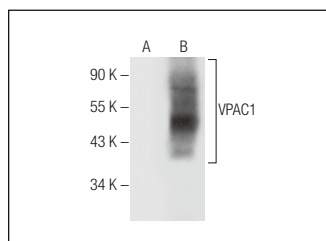
Suitable for use as control antibody for VPAC1 siRNA (h): sc-40281, VPAC1 shRNA Plasmid (h): sc-40281-SH and VPAC1 shRNA (h) Lentiviral Particles: sc-40281-V.

Molecular Weight of deglycosylated VPAC1: 47 kDa.

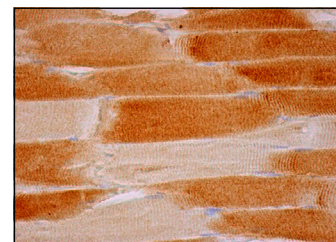
Molecular Weight of glycosylated VPAC1: 58 kDa.

Positive Controls: TE671 cell lysate: sc-2416, Caki-1 cell lysate: sc-2224 or VPAC1 (h): 293T Lysate: sc-116969.

DATA



VPAC1 (B-4): sc-377152. Western blot analysis of VPAC1 expression in non-transfected: sc-117752 (A) and human VPAC1 transfected: sc-116969 (B) 293T whole cell lysates.



VPAC1 (B-4): sc-377152. Immunoperoxidase staining of formalin fixed, paraffin-embedded human skeletal muscle tissue showing cytoplasmic staining of myocytes.

SELECT PRODUCT CITATIONS

1. Ulkumen, B., et al. 2022. Role of VPAC1 and VPAC2 receptors in the etiology of pregnancy rhinitis: an experimental study in rats. *Braz. J. Otorhinolaryngol.* 88: 505-510.
2. Kitayama, E., et al. 2023. Functional expression of IP, 5-HT₄, D₁, A_{2A}, and VIP receptors in human odontoblast cell line. *Biomolecules* 13: 879.

RESEARCH USE

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

PROTOCOLS

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