SANTA CRUZ BIOTECHNOLOGY, INC.

PDE4A (H-7): sc-74428

BACKGROUND

Phosphodiesterases (PDE) hydrolyze cAMP to 5'-AMP and thus play a critical role in the regulation of intracellular cAMP. Division of the PDE superfamily by sequence homology and enzymatic properties yields 11 PDE families. A unique upstream conserved region (UCR) characterizes the PDE4 family. Four separate genes (A-D) encode the PDE4 enzymes, and alternative splicing generates short or long isoforms of each gene. Long PDE4 isoforms contain both UCR1 and UCR2 while short PDE4 isoforms possess only UCR2. Both UCR domains are necessary for dimerization of PDE4 isoforms. The human PDE4A gene maps to chromosome 19p13.2 and spans 50 kilobases with 17 exons. The splice variants include isoforms PDE4A1-6.

CHROMOSOMAL LOCATION

Genetic locus: PDE4A (human) mapping to 19q13.2.

SOURCE

PDE4A (H-7) is a mouse monoclonal antibody raised against amino acids 721-886 of PDE4A 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.

PDE4A (H-7) is available conjugated to agarose (sc-74428 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-74428 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-74428 PE), fluorescein (sc-74428 FITC), Alexa Fluor® 488 (sc-74428 AF488), Alexa Fluor® 546 (sc-74428 AF546), Alexa Fluor® 594 (sc-74428 AF594) or Alexa Fluor® 647 (sc-74428 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-74428 AF680) or Alexa Fluor® 790 (sc-74428 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

PDE4A (H-7) is recommended for detection of PDE4A isoforms 1-5 of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:100), 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 PDE4A siRNA (h): sc-41596, PDE4A shRNA Plasmid (h): sc-41596-SH and PDE4A shRNA (h) Lentiviral Particles: sc-41596-V.

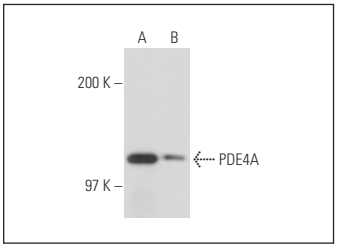
Molecular Weight of PDE4A: 118 kDa.

Positive Controls: SH-SY5Y cell lysate: sc-3812 or Jurkat whole cell lysate: sc-2204.

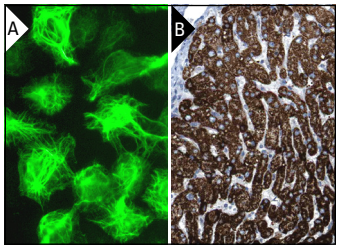
RECOMMENDED SUPPORT REAGENTS

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). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



PDE4A (H-7): sc-74428. Western blot analysis of PDE4A expression in SH-SY5Y (**A**) and Jurkat (**B**) whole cell lysates.



PDE4A (H-7): sc-74428. Immunofluorescence staining of formalin-fixed A-431 cells showing membrane localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human liver tissue showing cytoplasmic staining of hepatocytes. Kindly provided by The Swedish Human Protein Atlas (HPA) program (**B**).

SELECT PRODUCT CITATIONS

1. Marquette, A., et al. 2011. ERK and PDE4 cooperate to induce RAF isoform switching in melanoma. Nat. Struct. Mol. Biol. 18: 584-591.
2. Celsi, F., et al. 2012. Responses to sulfated steroids of female mouse vomeronasal sensory neurons. Chem. Senses 37: 849-858.
3. Mahmood, B., et al. 2016. Phosphodiesterases in non-neoplastic appearing colonic mucosa from patients with colorectal neoplasia. BMC Cancer 16: 938.
4. Huang, P., et al. 2017. Epac1, PDE4, and PKC protein expression and their association with AKAP95, Cx43, and cyclinD2/E1 in breast cancer tissues. Thorac. Cancer 8: 495-500.
5. Agis-Torres, A., et al. 2018. Phosphodiesterase type 4 inhibition enhances nitric oxide- and hydrogen sulfide-mediated bladder neck inhibitory neurotransmission. Sci. Rep. 8: 4711.
6. Fernandes, V.S., et al. 2022. *In vitro* inhibition of phosphodiesterase type 4 enhances rat corpus cavernosum nerve-mediated relaxation induced by gasotransmitters. Life Sci. 296: 120432.

STORAGE

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