SANTA CRUZ BIOTECHNOLOGY, INC.

PDE4D (H-69): sc-25814

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 PDE4D gene maps to chromosome 5q11.2. The splice variants include isoforms PDE4D1-6.

REFERENCES

1. Bolger, G., et al. 1993. A family of human phosphodiesterases homologous to the dunce learning and memory gene product of *Drosophila melanogaster* are potential targets for antidepressant drugs. Mol. Cell. Biol. 13: 6558-6571.
2. Milatovich, A., et al. 1994. Chromosome localizations of genes for five cAMP-specific phosphodiesterases in man and mouse. Somat. Cell Mol. Genet. 20: 75-86.

CHROMOSOMAL LOCATION

Genetic locus: PDE4D (human) mapping to 5q11.2; Pde4d (mouse) mapping to 13 D2.1.

SOURCE

PDE4D (H-69) is a rabbit polyclonal antibody raised against amino acids 741-809 mapping at the C-terminus of PDE4D 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.

APPLICATIONS

PDE4D (H-69) is recommended for detection of PDE4D isoforms 1-6 of mouse, rat and 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)], 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).

PDE4D (H-69) is also recommended for detection of PDE4D isoforms 1-6 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for PDE4D siRNA (h): sc-44004, PDE4D siRNA (m): sc-152130, PDE4D shRNA Plasmid (h): sc-44004-SH, PDE4D shRNA Plasmid (m): sc-152130-SH, PDE4D shRNA (h) Lentiviral Particles: sc-44004-V and PDE4D shRNA (m) Lentiviral Particles: sc-152130-V.

Molecular Weight of PDE4D isoforms 1/2: 68 kDa.

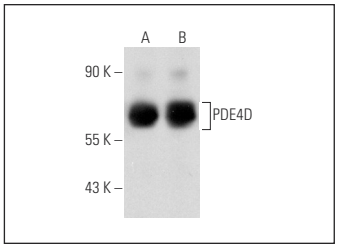
Molecular Weight of PDE4D isoforms 3/4/5/6: 95/119/105/65 kDa.

Positive Controls: Sol8 cell lysate: sc-2249, mouse skeletal muscle extract: sc-364250 or rat skeletal muscle extract: sc-364810.

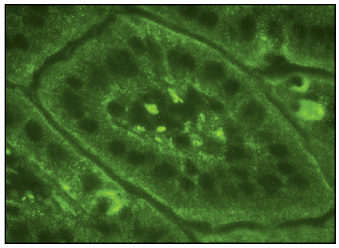
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



PDE4D (H-69): sc-25814. Western blot analysis of PDE4D expression in rat skeletal muscle (**A**) and mouse skeletal (**B**) tissue extracts.



PDE4D (H-69): sc-25814. Immunofluorescence staining of normal mouse intestine frozen section showing cytoplasmic staining.

SELECT PRODUCT CITATIONS

1. Zhu, H., et al. 2010. Evolutionarily conserved role of calcineurin in phosphodegron-dependent degradation of phosphodiesterase 4D. Mol. Cell. Biol. 30: 4379-4390.
2. Kuroiwa, M., et al. 2011. Phosphodiesterase 4 inhibition enhances the dopamine D1 receptor/PKA/DARPP-32 signaling cascade in frontal cortex. Psychopharmacology 219: 1065-1079.
3. Kunal, S.B., et al. 2012. Involvement of Src family of kinases and cAMP phosphodiesterase in the luteinizing hormone/chorionic gonadotropin receptor-mediated signaling in the corpus luteum of monkey. Reprod. Biol. Endocrinol. 10: 25.
4. Por, E.D., et al. 2012. β-arrestin-2 desensitizes the transient receptor potential vanilloid 1 (TRPV1) channel. J. Biol. Chem. 287: 37552-37563.
5. Oliva, A.A., et al. 2012. Phosphodiesterase isoform-specific expression induced by traumatic brain injury. J. Neurochem. 123: 1019-1029.
6. Xu, T., et al. 2014. Knockdown of phosphodiesterase 4D inhibits nasopharyngeal carcinoma proliferation via the epidermal growth factor receptor signaling pathway. Oncol. Lett. 8: 2110-2116.

STORAGE

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

RESEARCH USE

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