

PDE9A (G-4): sc-166375

BACKGROUND

Phosphodiesterases (PDEs) also designated cyclic nucleotide phosphodiesterases, are important for the downregulation of the intracellular level of the second messenger cyclic adenosine monophosphate (cAMP) by hydrolyzing cAMP to 5'AMP. Phosphodiesterase 9A (PDE9A) is a 593 amino acid protein that plays a role in signal transduction via regulation of the intracellular concentration of cyclic nucleotides and has a high affinity for cGMP. There are 15 known isoforms of PDE9A. It is expressed in various tissues including testis, brain, small intestine, skeletal muscle, heart, lung, thymus, spleen, placenta, kidney, liver, pancreas, ovary and prostate. Highest levels of PDE9A expression occur in brain, kidney, spleen, colon, heart and colon, while there is no detection of PDE9A in blood. PDE9A is composed of an N-terminal regulatory domain and a C-terminal catalytic domain containing two possible divalent metal sites. It may be implicated in affective bipolar disorder.

REFERENCES

1. Shimosato, Y., et al. 1978. Squamous cell carcinoma of the thymus. An analysis of eight cases. *Am. J. Surg. Pathol.* 1: 109-121.
2. Soderling, S.H., et al. 1998. Identification and characterization of a novel family of cyclic nucleotide phosphodiesterases. *J. Biol. Chem.* 273: 15553-15558.
3. Fisher, D.A., et al. 1998. Isolation and characterization of PDE9A, a novel human cGMP-specific phosphodiesterase. *J. Biol. Chem.* 273: 15559-15564.
4. Guipponi, M., et al. 1998. Identification and characterization of a novel cyclic nucleotide phosphodiesterase gene (PDE9A) that maps to 21q22.3: alternative splicing of mRNA transcripts, genomic structure and sequence. *Hum. Genet.* 103: 386-392.
5. Rentero, C., et al. 2003. Identification and distribution of different mRNA variants produced by differential splicing in the human phosphodiesterase 9A gene. *Biochem. Biophys. Res. Commun.* 301: 686-692.

CHROMOSOMAL LOCATION

Genetic locus: PDE9A (human) mapping to 21q22.3; Pde9a (mouse) mapping to 17 B1.

SOURCE

PDE9A (G-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 459-486 within an internal region of PDE9A of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-166375 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

RESEARCH USE

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

APPLICATIONS

PDE9A (G-4) is recommended for detection of PDE9A of mouse, rat and 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

PDE9A (G-4) is also recommended for detection of PDE9A in additional species, including canine, bovine and avian.

Suitable for use as control antibody for PDE9A siRNA (h): sc-61313, PDE9A siRNA (m): sc-61314, PDE9A siRNA (r): sc-270131, PDE9A shRNA Plasmid (h): sc-61313-SH, PDE9A shRNA Plasmid (m): sc-61314-SH, PDE9A shRNA Plasmid (r): sc-270131-SH, PDE9A shRNA (h) Lentiviral Particles: sc-61313-V, PDE9A shRNA (m) Lentiviral Particles: sc-61314-V and PDE9A shRNA (r) Lentiviral Particles: sc-270131-V.

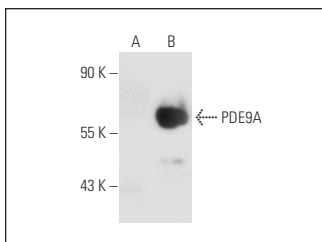
Molecular Weight of PDE9A: 69 kDa.

Positive Controls: PDE9A (h): 293 Lysate: sc-111170 or mouse spleen extract: sc-2391.

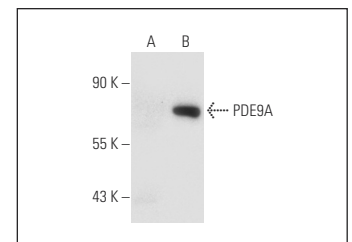
RECOMMENDED SUPPORT REAGENTS

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.

DATA



PDE9A (G-4): sc-166375. Western blot analysis of PDE9A expression in non-transfected: sc-110760 (A) and human PDE9A transfected: sc-111170 (B) 293 whole cell lysates.



PDE9A (G-4): sc-166375. Western blot analysis of PDE9A expression in non-transfected: sc-110760 (A) and human PDE9A transfected: sc-158830 (B) 293 whole cell lysates.

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.