SANTA CRUZ BIOTECHNOLOGY, INC.

PDE10A (G-7): sc-515023

BACKGROUND

PDE10A (phosphodiesterase 10A) is a striatum-enriched dual-substrate phosphodiesterase that participates in signal transduction by regulating the concentration of cyclic nucleotides. Localized to soluble cellular fractions within the cytoplasm, PDE10A can hydrolyze both cGMP and cAMP to the corresponding nucleoside 5' monophosphate, thereby eliminating cGMP- and cAMP-mediated intracellular signaling. Through its ability to hydrolyze cyclic nucleotides, PDE10A regulates the excitability of medium spiny neurons located in the striatum. PDE10A is expressed abundantly in the putamen and caudate nuclear regions of the testis and brain, with moderate expression observed in the pituitary gland, thalamus and cerebellum. PDE10A contains an N-terminal regulatory domain and a C-terminal catalytic domain which has two putative divalent metal binding sites. Two isoforms exist due to alternative splicing events.

CHROMOSOMAL LOCATION

Genetic locus: PDE10A (human) mapping to 6q27; Pde10a (mouse) mapping to 17 A1.

SOURCE

PDE10A (G-7) is a mouse monoclonal antibody raised against amino acids 82-300 mapping near the N-terminus of PDE10A 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.

PDE10A (G-7) is available conjugated to agarose (sc-515023 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-515023 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515023 PE), fluorescein (sc-515023 FITC), Alexa Fluor® 488 (sc-515023 AF488), Alexa Fluor® 546 (sc-515023 AF546), Alexa Fluor® 594 (sc-515023 AF594) or Alexa Fluor® 647 (sc-515023 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-515023 AF680) or Alexa Fluor® 790 (sc-515023 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

PDE10A (G-7) is recommended for detection of PDE10A 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).

Suitable for use as control antibody for PDE10A siRNA (h): sc-62761, PDE10A siRNA (m): sc-62762, PDE10A shRNA Plasmid (h): sc-62761-SH, PDE10A shRNA Plasmid (m): sc-62762-SH, PDE10A shRNA (h) Lentiviral Particles: sc-62761-V and PDE10A shRNA (m) Lentiviral Particles: sc-62762-V.

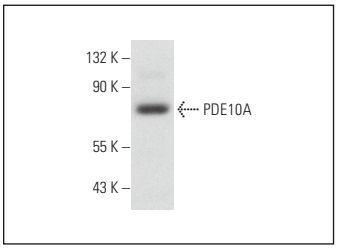
Molecular Weight of PDE10A: 88 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200.

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



PDE10A (G-7): sc-515023. Western blot analysis of PDE10A expression in HeLa whole cell lysate.

SELECT PRODUCT CITATIONS

1. Beker, M.C., et al. 2018. Time-of-day dependent neuronal injury after ischemic stroke: implication of circadian clock transcriptional factor Bmal1 and survival kinase Akt. Mol. Neurobiol. 55: 2565-2576.
2. Müller-Deubert, S., et al. 2020. Phosphodiesterase 10A is a mediator of osteogenic differentiation and mechanotransduction in bone marrow-derived mesenchymal stromal cells. Stem Cells Int. 2020: 7865484.
3. Hsu, C.G., et al. 2021. Phosphodiesterase 10A is a key mediator of lung inflammation. J. Immunol. 206: 3010-3020.
4. Beker, M.Ç., et al. 2021. The role of circadian rhythm in the regulation of cellular protein profiles in the brain. Turk. J. Med. Sci. 51: 2705-2715.
5. Luo, L., et al. 2022. Role of PDE10A in vascular smooth muscle cell hyperplasia and pathological vascular remodeling. Cardiovasc. Res. 118: 2703-2717.
6. Beker, M.C., et al. 2022. Phosphodiesterase 10A is a critical target for neuroprotection in a mouse model of ischemic stroke. Mol. Neurobiol. 59: 574-589.
7. Ju, C., et al. 2023. Inhibition of CXCR2 enhances CNS remyelination via modulating PDE10A/cAMP signaling pathway. Neurobiol. Dis. 177: 105988.

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.