SANTA CRUZ BIOTECHNOLOGY, INC.

PKA Iα reg (3546C2a): sc-81641

BACKGROUND

The second messenger cyclic AMP (cAMP) mediates diverse cellular responses to external signals such as proliferation, ion transport, regulation of metabolism and gene transcription by activation of the cAMP-dependent protein kinase (cAPK or PKA). Activation of PKA occurs when cAMP binds to the two regulatory subunits of the tetrameric PKA holoenzyme, resulting in release of active catalytic subunits. Four different PKA regulatory subunits have been identified, designated Iα, Iβ, IIα and IIβ. The PKA Iα reg protein is a tissue-specific extinguisher that downregulates the expression of seven liver genes in hepatoma x fibroblast hybrids. Functional null mutations in the gene that codes for PKA Iα reg cause Carney complex (CNC). CNC is an autosomal dominant multiple neoplasia syndrome. CNC is associated with a variety of characterized symptoms such as cardiac and other myxomas, spotty skin pigmentation, endocrine tumors and psammomatous melanotic schwannomas.

REFERENCES

1. Beavo, J.A., et al. 1974. Activation of protein kinase by physiological concentrations of cyclic AMP. Proc. Natl. Acad. Sci. USA 71: 3580-3583.
2. Krebs, E.G., et al. 1980. Phosphorylation and dephosphorylation of enzymes. Annu. Rev. Biochem. 48: 923-959.
3. Maldonado, F., et al. 1988. cAMP-dependent protein kinase, α catalytic subunit. Nucleic Acids Res. 16: 8189-8190.
4. Gonzalez, G.A., et al. 1989. Cyclic AMP stimulates Somato-statin gene transcription by phosphorylation of CREB at Serine 133. Cell 59: 675-680.
5. Beebe, S.J., et al. 1990. cAMP-dependent protein kinase, β catalytic subunit. Mol. Endo-crinol. 4: 465-475.
6. Schneider, L.H., et al. 1991. Infra-additivity of combined treatments with selective D1 and D2 receptor antagonists for inhibiting sucrose reinforcement. Brain Res. 550: 122-124.
7. Meinkoth, J.L., et al. 1993. Signal transduction through the cAMP-dependent protein kinase. Mol. Cell. Biochem. 127/128: 179-186.

CHROMOSOMAL LOCATION

Genetic locus: PRKAR1A (human) mapping to 17q23-q24; Prkar1a (mouse) mapping to 11 E1.

SOURCE

PKA Iα reg (3546C2a) is a mouse monoclonal antibody raised against a recombinant protein corresponding to a region near the N-terminus of PKA Iα reg of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% BSA.

STORAGE

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

APPLICATIONS

PKA Iα reg (3546C2a) is recommended for detection of PKA Iα reg of mouse and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for PKA Iα reg siRNA (h): sc-39162, PKA Iα reg siRNA (m): sc-39163, PKA Iα reg shRNA Plasmid (h): sc-39162-SH, PKA Iα reg shRNA Plasmid (m): sc-39163-SH, PKA Iα reg shRNA (h) Lentiviral Particles: sc-39162-V and PKA Iα reg shRNA (m) Lentiviral Particles: sc-39163-V.

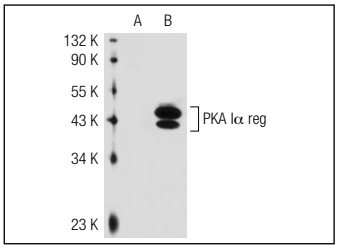
Molecular Weight of PKA Iα reg: 43 kDa.

Positive Controls: PKA Iα reg (h): 293T Lysate: sc-111596 or PKA Iβ reg (m): 293T Lysate: sc-125829.

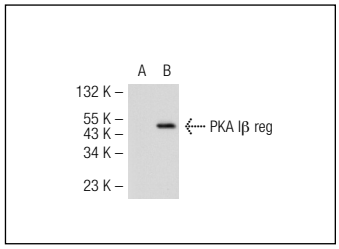
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (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).

DATA



PKA Iα reg (3546C2a): sc-81641. Western blot analysis of PKA Iα reg expression in non-transfected: sc-117752 (**A**) and human PKA Iα reg transfected: sc-111596 (**B**) 293T whole cell lysates.



PKA Iα reg (3546C2a): sc-81641. Western blot analysis of PKA Iβ reg expression in non-transfected: sc-117752 (**A**) and mouse PKA Iβ reg transfected: sc-125829 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Li, X.H., et al. AGEs induce Alzheimer-like tau pathology and memory deficit via RAGE-mediated GSK-3 activation. Neurobiol. Aging. E-Published

RESEARCH USE

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