SANTA CRUZ BIOTECHNOLOGY, INC.

PKAα/β/γ cat (H-95): sc-28892

SANTA CRUZ BIOTECHNOLOGY
The Power to Question

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. Three catalytic (C) subunits have been identified, designated Cα, Cβ and Cγ, that each represent specific gene products. Cα and Cβ are closely related (93% amino acid sequence similarity), whereas Cγ displays 83% and 79% similarity to Cα and Cβ, respectively. Activation of transcription upon elevation of cAMP levels results from translocation of PKA to the nucleus where it phosphorylates the transcription factor cAMP response element binding protein (CREB) on serine 133 which in turn leads to TFIIB binding to TATA-box-binding protein TBP1, thus linking phospho-CREB to the pol II transcription initiation complex.

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. A cDNA clone encoding human cAMP-dependent protein kinase catalytic subunit C α. Nucleic Acids Res. 16: 8189-8190.
4. Gonzalez, G.A., et al. 1989. Cyclic AMP stimulates somatostatin gene transcription by phosphorylation of CREB at Serine 133. Cell 59: 675-680.
5. Beebe, S.J., et al. 1990. Molecular cloning of a tissue-specific protein kinase (C γ) from human testis—representing a third isoform for the catalytic subunit of cAMP-dependent protein kinase. Mol. Endocrinol. 4: 465-475.

SOURCE

PKAα/β/γ cat (H-95) is a rabbit polyclonal antibody raised against amino acids 226-320 mapping near the C-terminus of PKAα cat 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.

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.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.

APPLICATIONS

PKAα/β/γ cat (H-95) is recommended for detection of PKAα, β and γ cat 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).

PKAα/β/γ cat (H-95) is also recommended for detection of PKAα, β and γ cat in additional species, including equine, canine, bovine and porcine.

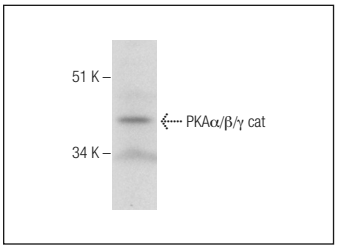
Molecular Weight of PKAα/β/γ cat: 40 kDa.

Positive Controls: KNRK whole cell lysate: sc-2214, human liver extract: sc-363766 or NIH/3T3 whole cell lysate: sc-2210.

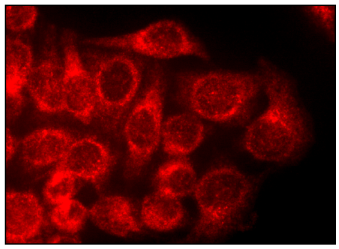
RECOMMENDED SECONDARY REAGENTS

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



PKAα/β/γ cat (H-95): sc-28892. Western blot analysis of PKAα/β/γ cat expression in human liver tissue extract.



PKAα/β/γ cat (H-95): sc-28892. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Liu, K., et al. 2008. An improved mechanism-based cross-linker for multiplexed kinase detection and inhibition in a complex proteome. Chembiochem 9: 1883-1888.