

PKA β cat (N-17): sc-30665

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 C α , C β and C γ , that each represent specific gene products. C α and C β are closely related (93% amino acid sequence similarity), whereas C γ displays 83% and 79% similarity to C α and C β , 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 TFIIIB 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. cAMP-dependent protein kinase, α -catalytic subunit. 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. cAMP-dependent protein kinase, β -catalytic subunit. Mol. Endocrinol. 4: 465-475.
6. Meinkoth, J.L., et al. 1993. Signal transduction through the cAMP-dependent protein kinase. Mol. Cell. Biochem. 127/128: 179-186.
7. Nordheim, A. 1994. CREB takes CBP to tango. Nature 370: 177-178.

CHROMOSOMAL LOCATION

Genetic locus: PRKACB (human) mapping to 1p31.1; Prkacb (mouse) mapping to 3 H2.

SOURCE

PKA β cat (N-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of PKA β catalytic subunit of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-30665 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

PKA β cat (N-17) is recommended for detection of PKA β catalytic subunit of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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); may cross-react with α subunit; non cross-reactive with γ subunit.

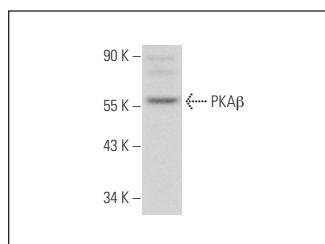
PKA β cat (N-17) is also recommended for detection of PKA β catalytic subunit in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for PKA β cat siRNA (h): sc-39158, PKA β cat siRNA (m): sc-39160, PKA β cat shRNA Plasmid (h): sc-39158-SH, PKA β cat shRNA Plasmid (m): sc-39160-SH, PKA β cat shRNA (h) Lentiviral Particles: sc-39158-V and PKA β cat shRNA (m) Lentiviral Particles: sc-39160-V.

Molecular Weight of PKA β cat: 40 kDa.

Positive Controls: mouse brain extract: sc-2253, NIH/3T3 whole cell lysate: sc-2210 or KNRK whole cell lysate: sc-2214.

DATA



PKA β cat (N-17): sc-30665. Western blot analysis of PKA β cat expression in NIH/3T3 whole cell lysate.

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 or our catalog for detailed protocols and support products.



Try **PKA α / β / γ cat (B-4): sc-365615** or **PKA α / β / γ cat (G-6): sc-390548**, our highly recommended monoclonal alternatives to PKA β cat (N-17). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **PKA α / β / γ cat (B-4): sc-365615**.