

PKA α / β cat (V-19): sc-30667

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. Nuclear 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. Nordheim, A. 1994. CREB takes CBP to tango. Nature 370: 177-178.

CHROMOSOMAL LOCATION

Genetic locus: PRKACA (human) mapping to 19p13.1, PRKACB (human) mapping to 1p36.1; Prkaca (mouse) mapping to 8 C3, Prkacb (mouse) mapping to 3 H3.

SOURCE

PKA α / β cat (V-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of PKA α 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-30667 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

Store at 4 $^{\circ}$ C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

PKA α / β cat (V-19) is recommended for detection of PKA α and β catalytic subunits 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 γ subunits.

PKA α / β cat (V-19) is also recommended for detection of PKA α and β catalytic subunits in additional species, including equine, canine, bovine, porcine and avian.

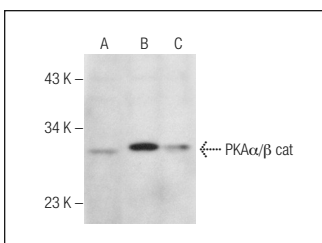
Molecular Weight of PKA α / β cat: 40 kDa.

Positive Controls: RAW 264.7 whole cell lysate: sc-2211, Jurkat whole cell lysate: sc-2204 or COLO 320DM whole cell lysate: sc-2226.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



PKA α / β cat (V-19): sc-30667. Western blot analysis of PKA α / β cat expression in RAW 264.7 (A), Jurkat (B) and COLO 320DM (C) whole cell lysates.

RESEARCH USE

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



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 α / β cat (V-19). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **PKA α / β / γ cat (B-4): sc-365615**.