SANTA CRUZ BIOTECHNOLOGY, INC.

PKAα/β cat (3C1): sc-52153

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., Bechtel, P.J. and Krebs, E.G. 1974. Activation of protein kinase by physiological concentrations of cyclic AMP. Proc. Natl. Acad. Sci. USA 71: 3580-3583.
2. Krebs, E.G. and Beavo, J.A. 1979. Phosphorylation and dephosphorylation of enzymes. Annu. Rev. Biochem. 48: 923-959.
3. Maldonado, F. and Hanks, S.K. 1988. cAMP-dependent protein kinase, α-catalytic subunit. Nucleic Acids Res. 16: 8189-8190.
4. Gonzalez, G.A. and Montminy M.R. 1989. Cyclic AMP stimulates somatostatin gene transcription by phosphorylation of CREB at serine 133. Cell 59: 675-680.
5. Beebe, S.J., Oyen, O., Sandberg, M., Froysa, A., Hansson, V. and Jahnsen, T. 1990. cAMP-dependent protein kinase, β-catalytic subunit. Mol. Endocrinol. 4: 465-475.
6. Meinkoth, J.L., Alberts, A.S., Went, W., Fantozzi, D., Taylor, S.S., Hagiwara, M., Montminy, M. and Feramisco, J.R. 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.

SOURCE

PKAα/β cat (3C1) is a mouse monoclonal antibody raised against PKAα cat purified from bovine cardiac muscle.

PRODUCT

Each vial contains 100 µg IgG_1 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.

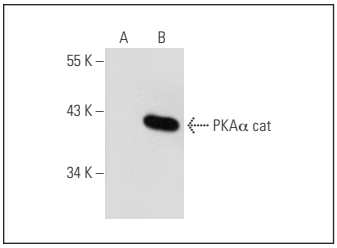
APPLICATIONS

PKAα/β cat (3C1) is recommended for detection of PKAα and PKAβ catalytic subunits of human and bovine 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Molecular Weight of PKAα/β cat: 40 kDa.

Positive Controls: PKAα cat (h): 293T Lysate: sc-111700.

DATA



PKAα/β cat (3C1): sc-52153. Western blot analysis of PKAα cat expression in non-transfected: sc-117752 (**A**) and human PKAα cat transfected: sc-111700 (**B**) 293T whole cell lysates.

RESEARCH USE

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

PROTOCOLS

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

CONJUGATES

See **PKAα/β/γ cat (B-4): sc-365615** for PKAα/β/γ cat antibody conjugates, including AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647.