SANTA CRUZ BIOTECHNOLOGY, INC.

PKAα/β/γ cat (G-6): sc-390548



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 cAMP-dependent protein kinases (cAPKs or PKAs). Activation of PKAs occurs when cAMP binds to the two regulatory subunits of the tetrameric PKA holoenzyme, resulting in release of active catalytic subunits. Three catalytic subunits of the PKA holoenzyme exist and are designated PKA α cat, PKA β cat and PKA β cat, each of which represent specific gene products. PKA α cat and PKA β cat are closely related (93% amino acid sequence similarity), whereas PKA γ cat displays 83% and 79% similarity to PKA α cat and PKA β cat, respectively. Activation of transcription upon elevation of cAMP levels results from translocation of PKA to the nucleus, where it phosphorylates CREB, leading to TFIIB-TBP1 binding and, ultimately, the linking of phospho-CREB to the Pol II transcription initiation complex.

SOURCE

 $\text{PKA}\alpha/\beta/\gamma$ cat (G-6) is a mouse monoclonal antibody raised against amino acids 231-286 mapping near the C-terminus of $\text{PKA}\alpha$ catalytic subunit of human origin.

PRODUCT

Each vial contains 200 $\mu g\, lg G_1$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PKAα/β/γ cat (G-6) is available conjugated to agarose (sc-390548 AC), 500 μg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390548 HRP), 200 μg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390548 PE), fluorescein (sc-390548 FITC), Alexa Fluor[®] 488 (sc-390548 AF488), Alexa Fluor[®] 546 (sc-390548 AF546), Alexa Fluor[®] 594 (sc-390548 AF594) or Alexa Fluor[®] 647 (sc-390548 AF647), 200 μg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-390548 AF680) or Alexa Fluor[®] 790 (sc-390548 AF790), 200 μg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

PKAα/β/γ cat (G-6) is recommended for detection of PKAα/β cat of mouse, rat and human origin, and PKAγ cat of human origin by Western Blotting (starting dilution 1:100, 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).

 $PKA\alpha/\beta/\gamma$ cat (G-6) is also recommended for detection of $PKA\alpha/\beta/\gamma$ cat in additional species, including equine, canine, bovine and porcine.

Molecular Weight of PKA $\alpha/\beta/\gamma$ cat: 40 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, PC-3 cell lysate: sc-2220 or mouse brain extract: sc-2253.

STORAGE

Store at 4° C, **D0 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.

DATA





 $\begin{array}{l} \mathsf{PKA}\alpha/\beta/\gamma\mbox{ cat }(G\mbox{-}6)\mbox{ sc}\mbox{-}390548. \ Western\ blot\ analysis \\ of\ \mathsf{PKA}\alpha/\beta/\gamma\ cat\ expression\ in\ NIH/313\ (\textbf{A})\ and\ PC\mbox{-}3\ (\textbf{B}) \\ whole\ cell\ lysates\ and\ mous \ brain\ (\textbf{C})\ and\ human \\ hippocampus\ (\textbf{D})\ tissue\ extracts. \end{array}$

 $PKA\alpha/\beta/\gamma$ cat (G-6): sc-390548. Western blot analysis of $PKA\alpha/\beta/\gamma$ cat expression in human testis tissue extract (A) and Hs 181 Tes (B), NTERA-2 cl.D1 (C) and KNRK (D) whole cell lysates.

SELECT PRODUCT CITATIONS

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- 3. Balatskyi, V.V., et al. 2018. Cardiospecific deletion of α E-catenin leads to heart failure and lethality in mice. Pflugers Arch. 470: 1485-1499.
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- 5. Balatskyi, V.V., et al. 2020. β -catenin regulates cardiac energy metabolism in sedentary and trained mice. Life 10: 357.
- 6. Wu, Y., et al. 2021. Tetrandrine attenuates left ventricular dysfunction in rats with myocardial infarction. Exp. Ther. Med. 21: 119.
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PROTOCOLS

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