SANTA CRUZ BIOTECHNOLOGY, INC.

PKAβ cat (C-20): sc-904

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 p-CREB to the Pol II transcription initiation complex.

CHROMOSOMAL LOCATION

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

SOURCE

PKAβ cat (C-20) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping at the C-terminus of PKAβ 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.

Blocking peptide available for competition studies, sc-904 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

PKAβ cat (C-20) is recommended for detection of PKAβ catalytic subunit 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); partially cross-reactive with α and γ.

PKAβ cat (C-20) is also recommended for detection of PKAβ catalytic subunit in additional species, including equine, canine, bovine and porcine.

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

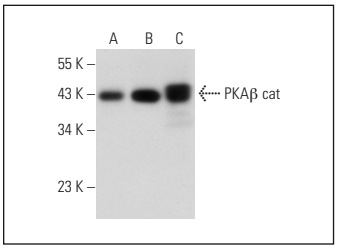
Molecular Weight of PKAβ cat: 40 kDa.

Positive Controls: PKAβ cat (h5): 293 Lysate: sc-158857, NIH/3T3 whole cell lysate: sc-2210 or MDCK cell lysate: sc-2252.

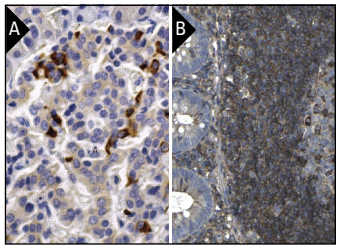
STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



PKAβ cat (C-20): sc-904. Western blot analysis of PKAβ cat expression in non-transfected 293T: sc-117752 (**A**), human PKAβ cat transfected 293T: sc-158858 (**B**) and MDCK (**C**) whole cell lysates.



PKAβ cat (C-20): sc-904. Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing cytoplasmic staining of Islets of Lang-erhans (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human appendix tissue showing cytoplasmic staining in lymphoid tissue and glandular cells at high magnification. Kindly provided by The Swedish Human Protein Atlas (HPA) program (**B**).

SELECT PRODUCT CITATIONS

1. Pfeifer, A., et al. 1996. Intestinal secretory defects and dwarfism in mice lacking c-GMP-dependent protein kinase II. Science 274: 2082-2086.
2. Leterrier, J.F., et al. 2009. MAP2-mediated *in vitro* interactions of brain microtubules and their modulation by cAMP. Eur. Biophys. J. 38: 381-393.
3. Wang, J., et al. 2010. CREB up-regulates long non-coding RNA, HULC expression through interaction with microRNA-372 in liver cancer. Nucleic Acids Res. 38: 5366-5383.
4. Pace, T.W., et al. 2011. Activation of cAMP-protein kinase A abrogates STAT5-mediated inhibition of glucocorticoid receptor signaling by interferon-α. Brain Behav. Immun. 25: 1716-1724.
5. Almeida, M.Q., et al. 2011. Integrated genomic analysis of nodular tissue in macronodular adrenocortical hyperplasia: progression of tumorigenesis in a disorder associated with multiple benign lesions. J. Clin. Endocrinol. Metab. 96: E728-E738.
6. Xiao, H., et al. 2011. Chromatin accessibility and transcription factor binding at the PPARγ2 promoter during adipogenesis is protein kinase A-dependent. J. Cell. Physiol. 226: 86-93.

RESEARCH USE

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