SANTA CRUZ BIOTECHNOLOGY, INC.

PKAγ cat (C-20): sc-905

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.

CHROMOSOMAL LOCATION

Genetic locus: PRKACG (human) mapping to 9q21.11.

SOURCE

PKAγ cat (C-20) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping at the C-terminus of PKAγ 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-905 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

PKAγ cat (C-20) is recommended for detection of PKAγ catalytic subunit of mouse, rat, human and mink 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 β.

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

Suitable for use as control antibody for PKAγ cat siRNA (h): sc-36236, PKAγ cat siRNA (m): sc-36237, PKAγ cat shRNA Plasmid (h): sc-36236-SH, PKAγ cat shRNA Plasmid (m): sc-36237-SH, PKAγ cat shRNA (h) Lentiviral Particles: sc-36236-V and PKAγ cat shRNA (m) Lentiviral Particles: sc-36237-V.

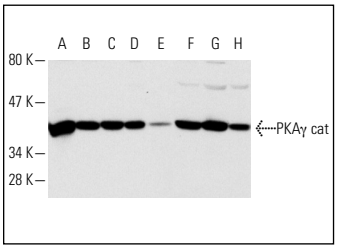
Molecular Weight of PKAγ cat: 39-40 kDa.

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

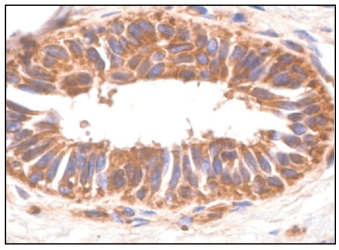
STORAGE

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

DATA



PKAγ cat (C-20): sc-905. Western blot analysis of PKAγ catalytic subunit expression in mouse brain extract (**A**), NIH/3T3 (**B**), KNRK (**C**), Mv 1 Lu (**D**), MDCK (**E**), MCF7 (**F**), PC-3 (**G**) and A549 (**H**) whole cell lysates.



PKAγ cat (C-20): sc-905. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human breast tissue showing cytoplasmic staining.

SELECT PRODUCT CITATIONS

1. Pfeifer, A., et al. 1996. Intestinal secretory defects and dwarfism in mice lacking cGMP-dependent protein kinase II. Science 274: 2082-2086.
2. Hoover, F., et al. 2001. Differential expression and regulation of the PKA signalling pathway in fast and slow skeletal muscle. Anat. Embryol. 203: 193-201.
3. Schmitt, A., et al. 2002. Inhibition of *Xenopus* oocyte meiotic maturation by catalytically inactive protein kinase A. Proc. Natl. Acad. Sci. USA 99: 4361-4366.
4. MacDougall, M.W., et al. 2003. Human myometrial quiescence and activation during gestation and parturition involve dramatic changes in expression and activity of particulate type II (RII α) protein kinase A holoenzyme. J. Clin. Endocrinol. Metab. 88: 2194-2205.
5. Willipinski-Stapelfeldt, B., et al. 2004. Comparative analysis between cyclic GMP and cyclic AMP signalling in human sperm. Mol. Hum. Reprod. 10: 543-552.
6. Orstavik, S., et al. 2005. Identification and characterization of novel PKA holoenzymes in human T lymphocytes. FEBS Lett. 272: 1559-1567.
7. Müller, D., et al. 2006. Homologous and lysophosphatidic acid-induced desensitization of the atrial natriuretic peptide receptor, guanylyl cyclase-A, in MA-10 leydig cells. Endocrinology 147: 2974-2985.

RESEARCH USE

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