

# pki $\alpha$ (C-20): sc-1944

## BACKGROUND

The second messenger cyclic AMP (cAMP) mediates a diverse array of cellular responses such as proliferation, ion transport, regulation of metabolism and gene transcription by activating the cAMP-dependent protein kinase (cAPK or PKA). Activation of PKA occurs when cAMP binds to the two regulatory subunits of tetrameric PKA, resulting in the release of two active catalytic subunits. Two forms of a specific PKA inhibitor molecule, designated pki  $\alpha$  and pki  $\beta$ , have been described and are suggested to regulate PKA activity in different portions of the central nervous system. For instance, pki  $\alpha$  is expressed abundantly in the adult mouse brain, particularly in the cerebellum, hypothalamus, hippocampus and cortex. In contrast, pki  $\beta$  is present at a much lower level in most brain regions. pki  $\beta$  is found in significant amounts only in the cerebellum and in a few distinct nuclei within the pons, medulla and hypothalamus.

## 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. 1980. Phosphorylation and dephosphorylation of enzymes. Annu. Rev. Biochem. 48: 923-959.
3. Maldonado, F. and Hanks, S.K. 1988. cAMP-dependent protein kinase,  $\alpha$ -catalytic subunit. Nucleic Acids Res. 16: 8189-8190.
4. Beebe, S.J., Oyen, O., Sandberg, M., Froya, A., Hansson, V. and Jahnsen, T. 1990. cAMP-dependent protein kinase,  $\beta$ -catalytic subunit. Mol. Endocrinol. 4: 465-475.
5. 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.
6. Marchetto, G.S. and Henry, H.L. 1995. Cloning and sequencing of the cDNA encoding the avian kidney cAMP-dependent protein kinase inhibitor protein. Gene 158: 303-304.

## CHROMOSOMAL LOCATION

Genetic locus: PKIA (human) mapping to 8q21.12; Pkia (mouse) mapping to 3 A1.

## SOURCE

pki  $\alpha$  (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of pki  $\alpha$  of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-1944 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## RESEARCH USE

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

## APPLICATIONS

pki  $\alpha$  (C-20) is recommended for detection of pki  $\alpha$  of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g 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).

pki  $\alpha$  (C-20) is also recommended for detection of pki  $\alpha$  in additional species, including equine, canine, bovine and porcine.

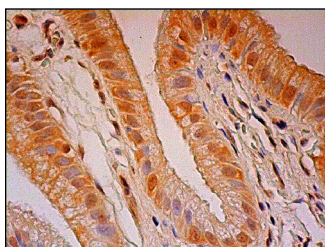
Suitable for use as control antibody for pki  $\alpha$  siRNA (h): sc-44021, pki  $\alpha$  siRNA (m): sc-60045, pki  $\alpha$  shRNA Plasmid (h): sc-44021-SH, pki  $\alpha$  shRNA Plasmid (m): sc-60045-SH, pki  $\alpha$  shRNA (h) Lentiviral Particles: sc-44021-V and pki  $\alpha$  shRNA (m) Lentiviral Particles: sc-60045-V.

Molecular Weight of pki  $\alpha$ : 8 kDa.

## 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. 4) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

## DATA



pki  $\alpha$  (C-20): sc-1944. Immunoperoxidase staining of formalin fixed, paraffin-embedded human gall bladder tissue showing cytoplasmic and nuclear staining of glandular cells.

## STORAGE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.