SANTA CRUZ BIOTECHNOLOGY, INC.

PKA IIα reg (H-12): sc-137220



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 C α , C β and C γ , that each represent specific gene products. C α and C β are closely related (93% amino acid sequence similarity), whereas C γ displays 83% and 79% similarity to C α and C β , 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 (reviewed in 7).

REFERENCES

- Beavo, J.A., et al. 1974. Activation of protein kinase by physiological concentrations of cyclic AMP. Proc. Natl. Acad. Sci. USA 71: 3580-3583.
- Krebs, E.G., et al. 1980. Phosphorylation and dephosphorylation of enzymes. Ann. Rev. Biochem. 48: 923-959.
- 3. Maldonado, F., et al. 1988. cAMP-dependent protein kinase, α -catalytic subunit. Nucl. Acids Res. 16: 8189-8190.
- Gonzalez, G.A., et al. 1989. Cyclic AMP stimulates somatostatin gene transcription by phosphorylation of CREB at serine 133. Cell. 59: 675-680.
- Beebe, S.J., et al. 1990. cAMP-dependent protein kinase, β-catalytic subunit. Mol. Endocrinol. 4: 465-475.
- Meinkoth, J.L., et al. 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.

CHROMOSOMAL LOCATION

Genetic locus: PRKAR2A (human) mapping to 3p21.31.

SOURCE

PKA II α reg (H-12) is a mouse monoclonal antibody raised against amino acids 21-100 (deletion 39-54) mapping near the N-terminus of PKA II α reg of human origin.

PRODUCT

Each vial contains 200 $\mu g~lg G_{2a}$ in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

Store at 4° C, **D0 NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

PKA II α reg (H-12) is recommended for detection of PKA II α reg 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).

Suitable for use as control antibody for PKA II α reg siRNA (h): sc-39164, PKA II α reg shRNA Plasmid (h): sc-39164-SH and PKA II α reg shRNA (h) Lentiviral Particles: sc-39164-V.

Molecular Weight of PKA II $\!\alpha$ reg: 50 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, HeLa whole cell lysate: sc-2200 or MCF7 whole cell lysate: sc-2206.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker[™] Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Lambda Phosphatase: sc-200312A 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.

DATA





PKA II α reg (H-12) HRP: sc-137220 HRP. Direct western blot analysis of PKA II α reg expression in HeLa (**A**), K-562 (**B**), A-673 (**C**) and MCF7 (**D**) whole cell lysates.

PKA II α reg (H-12): sc-137220. Immunofluorescence staining of formalin-fixed HeLa cells showing golgi apparatus and cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffinembedded human fallopian tube tissue showing cytoplasmic staining of glandular cells (**B**).

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.