SANTA CRUZ BIOTECHNOLOGY, INC.

PKA Iβ reg (QR-7): sc-100414

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: PRKAR1B (human) mapping to 7p22.3; Prkar1b (mouse) mapping to 5 G2.

SOURCE

PKA Iβ reg (QR-7) is a mouse monoclonal antibody raised against recombinant PKA Iβ reg of human origin.

PRODUCT

Each vial contains 50 µg IgG_{2a} kappa light chain in 0.5 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

PKA Iβ reg (QR-7) is recommended for detection of PKA Iβ reg of mouse, rat and human origin by Western Blotting (starting dilution to be determined by researcher, dilution range 1:100-1:5000), immunoprecipitation [1-2 µl per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution to be determined by researcher, dilution range 1:100-1:5000), immunohistochemistry (including paraffin-embedded sections) (starting dilution to be determined by researcher, dilution range 1:50-1:2500) and solid phase ELISA (starting dilution to be determined by researcher, dilution range 1:100-1:5000).

Suitable for use as control antibody for PKA Iβ reg siRNA (h): sc-36238, PKA Iβ reg siRNA (m): sc-36239, PKA Iβ reg shRNA Plasmid (h): sc-36238-SH, PKA Iβ reg shRNA Plasmid (m): sc-36239-SH, PKA Iβ reg shRNA (h) Lentiviral Particles: sc-36238-V and PKA Iβ reg shRNA (m) Lentiviral Particles: sc-36239-V.

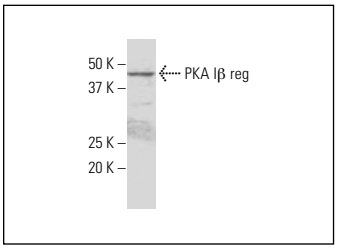
Molecular Weight of PKA Iβ reg: 51 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, SW-13 cell lysate: sc-24778 or mouse brain extract: sc-2253.

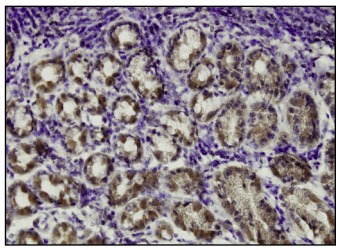
RECOMMENDED SUPPORT REAGENTS

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, UltraCruz® Blocking Reagent: sc-516214 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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



PKA Iβ reg (QR-7): sc-100414. Western blot analysis of PKA Iβ reg expression in Hep G2 whole cell lysate.



PKA Iβ reg (QR-7): sc-100414. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human stomach tissue showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Chen, S.J., et al. 2019. Continuous exposure of isoprenaline inhibits myoblast differentiation and fusion through PKA/ERK1/2-FOXO1 signaling pathway. Stem Cell Res. Ther. 10: 70.
2. Garcia, N., et al. 2019. Opposed actions of PKA isozymes (RI and RII) and PKC isoforms (cPKCβI and nPKCε) in neuromuscular developmental synapse elimination. Cells 8 pii: E1304.

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.