SANTA CRUZ BIOTECHNOLOGY, INC.

PKA Iα/β reg (B-6): sc-271125

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. Four different PKA regulatory subunits have been identified, designated Iα, Iβ, IIα and IIβ. The PKA Iα reg protein is a tissue-specific extinguisher that downregulates the expression of seven liver genes in heptoma x fibroblast hybrids. Functional null mutations in the gene that codes for PKA Iα reg cause Carney complex (CNC). CNC is an autosomal dominant multiple neoplasia syndrome. CNC is associated with a variety of characterized symptoms such as cardiac and other myxomas, spotty skin pigmentation, endocrine tumors and psammomatous melanotic schwannomas.

CHROMOSOMAL LOCATION

Genetic locus: PRKAR1A (human) mapping to 17q24.2, PRKAR1B (human) mapping to 7p22.3; Prkar1a (mouse) mapping to 11 E1, Prkar1b (mouse) mapping to 5 G2.

SOURCE

PKA Iα/β reg (B-6) is a mouse monoclonal antibody raised against amino acids 246-335 mapping within an internal region of PKA Iα reg of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PKA Iα/β reg (B-6) is available conjugated to agarose (sc-271125 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-271125 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271125 PE), fluorescein (sc-271125 FITC), Alexa Fluor® 488 (sc-271125 AF488), Alexa Fluor® 546 (sc-271125 AF546), Alexa Fluor® 594 (sc-271125 AF594) or Alexa Fluor® 647 (sc-271125 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271125 AF680) or Alexa Fluor® 790 (sc-271125 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

PKA Iα/β reg (B-6) is recommended for detection of PKA Iα and PKA Iβ reg of mouse, rat and 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), 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).

Molecular Weight of PKA Iα reg: 47 kDa.

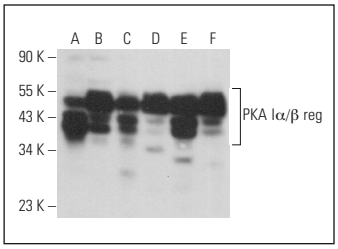
Molecular Weight of PKA Iβ reg: 51 kDa.

Positive Controls: CCRF-CEM cell lysate: sc-2225, SW-13 cell lysate: sc-24778 or HeLa whole cell lysate: sc-2200.

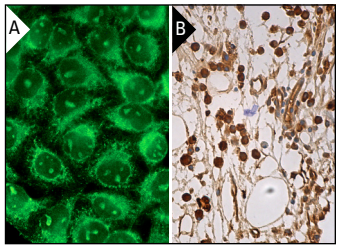
RECOMMENDED SUPPORT REAGENTS

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 Iα/β reg (B-6): sc-271125. Western blot analysis of PKA Iα/β reg expression in SW-13 (**A**), Hep G2 (**B**), HeLa (**C**), CCRF-CEM (**D**), WI-38 (**E**) and IMR-32 (**F**) whole cell lysates.



PKA Iα/β reg (B-6): sc-271125. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human bone marrow tissue showing cytoplasmic staining of hematopoietic cells (**B**).

SELECT PRODUCT CITATIONS

1. Chiba, T., et al. 2011. Estrogen-dependent activation of neutral cholesterol ester hydrolase underlying gender difference of atherogenesis in $apoE^{-/-}$ mice. Atherosclerosis 219: 545-551.
2. Chen, J., et al. 2017. YTH domain family 2 orchestrates epithelial-mesenchymal transition/proliferation dichotomy in pancreatic cancer cells. Cell Cycle 16: 2259-2271.
3. Vaena, S., et al. 2021. Aging-dependent mitochondrial dysfunction mediated by ceramide signaling inhibits antitumor T cell response. Cell Rep. 35: 109076.
4. Sherpa, R.T., et al. 2021. Mitochondrial A-kinase anchoring proteins in cardiac ventricular myocytes. Physiol. Rep. 9: e15015.
5. Zhang, S., et al. 2023. Purine metabolites promote ectopic new bone formation in ankylosing spondylitis. Int. Immunopharmacol. 116: 109810.

STORAGE

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

RESEARCH USE

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