

PKA II α 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 TFIIIB binding to TATA-box-binding protein TBP1, thus linking phospho-CREB to the pol II transcription initiation complex (reviewed in 7).

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 μ g IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PKA II α reg (H-12) is available conjugated to agarose (sc-137220 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-137220 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-137220 PE), fluorescein (sc-137220 FITC), Alexa Fluor[®] 488 (sc-137220 AF488), Alexa Fluor[®] 546 (sc-137220 AF546), Alexa Fluor[®] 594 (sc-137220 AF594) or Alexa Fluor[®] 647 (sc-137220 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-137220 AF680) or Alexa Fluor[®] 790 (sc-137220 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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 μ g per 100-500 μ 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).

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.

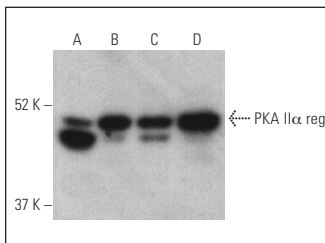
Molecular Weight of PKA II α reg: 50 kDa.

Positive Controls: A-673 cell lysate: sc-2414, HeLa whole cell lysate: sc-2200 or MCF7 whole cell lysate: sc-2206.

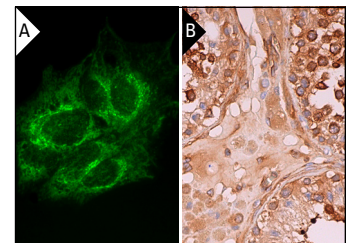
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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-IgG κ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

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 Hep G2 cells showing Golgi apparatus and cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human testis tissue showing cytoplasmic staining of cells in seminiferous ducts and Leydig cells (B).

SELECT PRODUCT CITATIONS

- Muñoz-Llanca, P., et al. 2017. Microtubule-regulating proteins and cAMP-dependent signaling in neuroblastoma differentiation. *Cytoskeleton* 74: 143-158.
- Cliester, T., et al. 2019. AKAP95 organizes a nuclear microdomain to control local cAMP for regulating nuclear PKA. *Cell Chem. Biol.* 26: 885-891.e4.
- Sherpa, R.T., et al. 2021. Mitochondrial A-kinase anchoring proteins in cardiac ventricular myocytes. *Physiol. Rep.* 9: e15015.
- Roa, J.N., et al. 2021. Protein kinase A in human retina: differential localization of C β , C α , RII α , and RII β in photoreceptors highlights non-redundancy of protein kinase A subunits. *Front. Mol. Neurosci.* 14: 782041.

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.

Alexa Fluor[®] is a trademark of Molecular Probes, Inc., Oregon, USA