

PKA II β reg (C-2): sc-376778

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.

CHROMOSOMAL LOCATION

Genetic locus: PRKAR2B (human) mapping to 7q22.3; Prkar2b (mouse) mapping to 12 A3.

SOURCE

PKA II β reg (C-2) is a mouse monoclonal antibody raised against amino acids 21-110 mapping near the N-terminus of PKA II β regulatory chain of human origin.

PRODUCT

Each vial contains 200 μ g IgG $_3$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

PKA II β reg (C-2) is recommended for detection of PKA II β reg of mouse, rat and 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for PKA II β reg siRNA (h): sc-39166, PKA II β reg siRNA (m): sc-39167, PKA II β reg shRNA Plasmid (h): sc-39166-SH, PKA II β reg shRNA Plasmid (m): sc-39167-SH, PKA II β reg shRNA (h) Lentiviral Particles: sc-39166-V and PKA II β reg shRNA (m) Lentiviral Particles: sc-39167-V.

Molecular Weight of PKA II β reg: 53 kDa.

Positive Controls: PKA II β reg (h4): 293 Lysate: sc-129479, NIH/3T3 whole cell lysate: sc-2210 or Neuro-2A whole cell lysate: sc-364185.

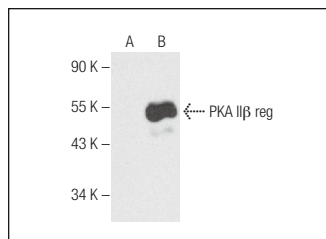
STORAGE

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

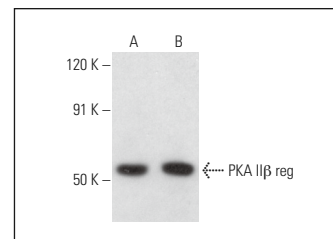
RESEARCH USE

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

DATA



PKA II β reg (C-2): sc-376778. Western blot analysis of PKA II β reg expression in non-transfected: sc-110760 (A) and human PKA II β reg transfected: sc-129479 (B) 293 whole cell lysates.



PKA II β reg (C-2): sc-376778. Western blot analysis of PKA II β reg expression in NIH/3T3 (A) and Neuro-2A (B) whole cell lysates.

SELECT PRODUCT CITATIONS

- 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.
- Zhang, C., et al. 2020. The chromatin remodeler Snf2h is essential for oocyte meiotic cell cycle progression. *Genes Dev.* 34: 166-178.
- Vaena, S., et al. 2021. Aging-dependent mitochondrial dysfunction mediated by ceramide signaling inhibits antitumor T cell response. *Cell Rep.* 35: 109076.
- Sherpa, R.T., et al. 2021. Mitochondrial A-kinase anchoring proteins in cardiac ventricular myocytes. *Physiol. Rep.* 9: e15015.
- Long, X., et al. 2022. Obesity modulates cell-cell interactions during ovarian folliculogenesis. *iScience* 25: 103627.
- LaCroix, R., et al. 2022. Complex effects of kinase localization revealed by compartment-specific regulation of protein kinase A activity. *Elife* 11: e66869.
- Tang, H.H., et al. 2023. Serotonin/5-HT7 receptor provides an adaptive signal to enhance pigmentation response to environmental stressors through cAMP-PKA-MAPK, Rab27a/RhoA, and PI3K/AKT signaling pathways. *FASEB J.* 37: e22893.
- Jo, D., et al. 2023. Circular RNA Tmcc1 improves astrocytic glutamate metabolism and spatial memory via NF κ B and CREB signaling in a bile duct ligation mouse model: transcriptional and cellular analyses. *J. Neuroinflammation* 20: 121.
- Kim, S.H., et al. 2024. Targeting phosphorylation circuits on CREB and CRTCs as the strategy to prevent acquired skin hyperpigmentation. *Int. J. Biol. Sci.* 20: 312-330.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.