

# PKA I $\beta$ reg (C-19): sc-907

## 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 $\alpha$ , C $\beta$  and C $\gamma$ , that each represent specific gene products. C $\alpha$  and C $\beta$  are closely related (93% amino acid sequence similarity), whereas C $\gamma$  displays 83% and 79% similarity to C $\alpha$  and C $\beta$ , 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 I $\beta$  reg (C-19) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping at the C-terminus of PKA I $\beta$  reg of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-907 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

PKA I $\beta$  reg (C-19) is recommended for detection of PKA type I $\beta$  regulatory subunits of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ 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); partially cross-reactive with I $\alpha$  subunit.

PKA I $\beta$  reg (C-19) is also recommended for detection of PKA type I $\beta$  regulatory subunits in additional species, including equine, canine, bovine, porcine and avian.

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

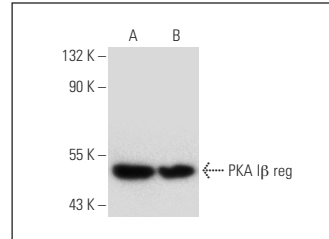
Molecular Weight of PKA I $\beta$  reg: 51 kDa.

Positive Controls: mouse brain extract: sc-2253, Hep G2 cell lysate: sc-2227 or HeLa whole cell lysate: sc-2200.

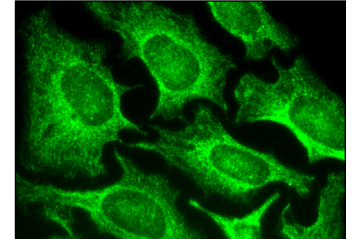
## STORAGE

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

## DATA



PKA I $\beta$  reg (C-19): sc-907. Western blot analysis of PKA I $\beta$  reg expression in Hep G2 (A) and HeLa (B) whole cell lysates.



PKA I $\beta$  reg (C-19): sc-907. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

## SELECT PRODUCT CITATIONS

- Kussel-Andermann, P., et al. 2000. Unconventional myosin VIIA is a novel A-kinase-anchoring protein. *J. Biol. Chem.* 275: 29654-29659.
- Engel, L., et al. 2004. Rat pineal arylalkylamine-N-acetyltransferase: cyclic AMP inducibility of its gene depends on prior entrained photoperiod. *Brain Res. Mol. Brain Res.* 123: 45-55.
- Seldon, P.M., et al. 2005. Rolipram, salbutamol and prostaglandin E2 suppress TNF $\alpha$  release from human monocytes by activating type II cAMP-dependent protein kinase. *Pulm. Pharmacol. Ther.* 18: 277-284.
- Banales, J.M., et al. 2009. The cAMP effectors Epac and protein kinase A (PKA) are involved in the hepatic cystogenesis of an animal model of autosomal recessive polycystic kidney disease (ARPKD). *Hepatology* 49: 160-174.
- Lefkimiatis, K., et al. 2009. "cAMP sponge": a buffer for cyclic adenosine 3', 5'-monophosphate. *PLoS ONE* 4: e7649.
- Mucignat-Caretta, C., et al. 2010. Protein kinase A regulatory subunit distribution in medulloblastoma. *BMC Cancer* 10: 141.
- Stakkestad, O., et al. 2011. Protein kinase A type I activates a CRE-element more efficiently than protein kinase A type II regardless of C subunit isoform. *BMC Biochem.* 12: 7.

## RESEARCH USE

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



Try **PKA I $\beta$  reg (QR-7): sc-100414**, our highly recommended monoclonal alternative to PKA I $\beta$  reg (C-19).