

p-PKA II β reg (pS114.47): sc-136185

BACKGROUND

The second messenger cyclic AMP 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. One of several regulatory subunits, p-PKA II β reg (cAMP-dependent protein kinase type II- β regulatory subunit), also known as PRKAR2B, is a 418 amino acid protein that is phosphorylated by the activated catalytic chain. p-PKA II β reg knockout mice exhibit diminished white adipose tissue and were protected against diet-induced obesity and fatty livers, as well as markedly reduced leptin mRNA. Also playing a role in the immune response, p-PKA II β reg suppresses CREB transcriptional activity and downregulates IL-2 production in T lymphocytes.

REFERENCES

1. Wainwright, B., et al. 1987. A human regulatory subunit of type II cAMP-dependent protein kinase localized by its linkage relationship to several cloned chromosome 7q markers. *Cytogenet. Cell Genet.* 45: 237-239.
2. Levy, F.O., et al. 1988. Molecular cloning, complementary deoxyribonucleic acid structure and predicted full-length amino acid sequence of the hormone-inducible regulatory subunit of 3'-5'-cyclic adenosine monophosphate-dependent protein kinase from human testis. *Mol. Endocrinol.* 2: 1364-1373.
3. Solberg, R., et al. 1992. Mapping of the regulatory subunits RI β and RII β of cAMP-dependent protein kinase genes on human chromosome 7. *Genomics* 14: 63-69.
4. Adams, M.R., et al. 1997. Loss of haloperidol induced gene expression and catalepsy in protein kinase A-deficient mice. *Proc. Natl. Acad. Sci. USA* 94: 12157-12161.
5. Elliott, M.R., et al. 2004. Downregulation of IL-2 production in T lymphocytes by phosphorylated protein kinase A RI β . *J. Immunol.* 172: 7804-7812.

CHROMOSOMAL LOCATION

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

SOURCE

p-PKA II β reg (pS114.47) is a mouse monoclonal antibody raised against a short amino acid sequence containing Ser 114 phosphorylated PKA II β reg of human origin.

PRODUCT

Each vial contains 50 μ g IgG₁ in 0.5 ml 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

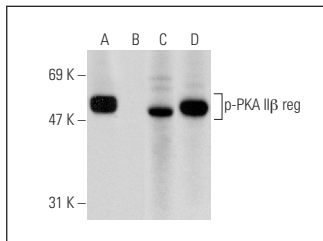
p-PKA II β reg (pS114.47) is recommended for detection of Ser 114 phosphorylated PKA II β reg of human origin and correspondingly Ser 112 phosphorylated PKA II β reg of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)].

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.

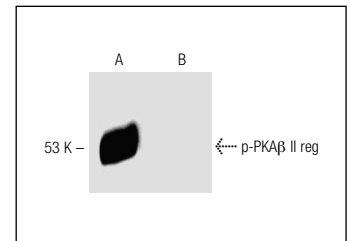
Molecular Weight of p-PKA II β reg: 53 kDa.

Positive Controls: rat brain extract: sc-2392 or SK-N-SH cell lysate: sc-2410.

DATA



Western blot analysis of PKA II β reg phosphorylation in untreated (A, C) and lambda protein phosphatase (sc-200312A) treated (B, D) rat brain tissue extracts. Antibodies tested include p-PKA II β reg (pS114.47): sc-136185 (A, B) and PKA II β reg (M-18): sc-18804 (C, D).



p-PKA II β reg (pS114.47): sc-136185. Western blot analysis of PKA II β reg phosphorylation in rat cerebrum tissue extracts either untreated (A) or treated (B) with lambda phosphatase (sc-200312A).

RESEARCH USE

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

PROTOCOLS

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