

# KChIP4 (H-1): sc-373732

## BACKGROUND

The downstream regulatory element, DRE, acts as a location-dependent gene silencer. DREAM (for DRE-antagonist modulator) is a  $Ca^{2+}$ -regulated transcriptional repressor that specifically binds to the DRE. DREAM regulates transcription of prodynorphin and c-Fos genes and shows 99% nucleotide homology to the Kv channel-interacting proteins (KChIPs). KChIP family members include KChIP1, which is expressed in brain, KChIP2, which is expressed in heart, brain, and lung, KChIP3 (also designated calsenilin), which is expressed in brain and testis and KChIP4.

## REFERENCES

- Xiong, H., et al. 2004. Differential distribution of KChIPs mRNAs in adult mouse brain. *Brain Res. Mol. Brain Res.* 128: 103-111.
- Link, W.A., et al. 2004. Day-night changes in downstream regulatory element antagonist modulator/potassium channel interacting protein activity contribute to circadian gene expression in pineal gland. *J. Neurosci.* 24: 5346-5355.
- Rhodes, K.J., et al. 2004. KChIPs and Kv4  $\alpha$  subunits as integral components of A-type potassium channels in mammalian brain. *J. Neurosci.* 24: 7903-7915.
- Baranauskas, G. 2004. Cell-type-specific splicing of KChIP4 mRNA correlates with slower kinetics of A-type current. *Eur. J. Neurosci.* 20: 385-391.
- Lin, Y.L., et al. 2004. Evidence showing an intermolecular interaction between KChIP proteins and Taiwan cobra cardiotoxins. *Biochem. Biophys. Res. Commun.* 319: 720-724.

## CHROMOSOMAL LOCATION

Genetic locus: KCNIP4 (human) mapping to 4p15.31; Kcnip4 (mouse) mapping to 5 B3.

## SOURCE

KChIP4 (H-1) is a mouse monoclonal antibody raised against amino acids 1-83 mapping at the N-terminus of KChIP4 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

KChIP4 (H-1) is available conjugated to agarose (sc-373732 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-373732 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-373732 PE), fluorescein (sc-373732 FITC), Alexa Fluor<sup>®</sup> 488 (sc-373732 AF488), Alexa Fluor<sup>®</sup> 546 (sc-373732 AF546), Alexa Fluor<sup>®</sup> 594 (sc-373732 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-373732 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-373732 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-373732 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## RESEARCH USE

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

## APPLICATIONS

KChIP4 (H-1) is recommended for detection of KChIP4 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

Suitable for use as control antibody for KChIP4 siRNA (h): sc-45837, KChIP4 siRNA (m): sc-45838, KChIP4 shRNA Plasmid (h): sc-45837-SH, KChIP4 shRNA Plasmid (m): sc-45838-SH, KChIP4 shRNA (h) Lentiviral Particles: sc-45837-V and KChIP4 shRNA (m) Lentiviral Particles: sc-45838-V.

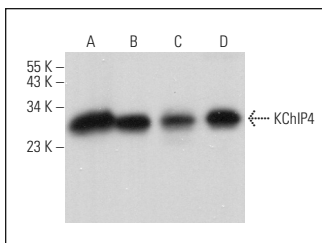
Molecular Weight of KChIP4: 29 kDa.

Positive Controls: mouse brain extract: sc-2253, rat brain extract: sc-2392 or human cerebral cortex extract: sc-516707.

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> 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 $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## DATA



KChIP4 (H-1): sc-373732. Western blot analysis of KChIP4 expression in rat brain (A), rat hippocampus (B), human cerebral cortex (C) and mouse brain (D) tissue extracts.

## SELECT PRODUCT CITATIONS

- Hu, F., et al. 2019. Inhibition of Hsp70 suppresses neuronal hyperexcitability and attenuates epilepsy by enhancing A-type potassium current. *Cell Rep.* 26: 168-181.e4.
- Su, Z.J., et al. 2020. Down-regulation of miR-3068-3p enhances kcnip4-regulated A-type potassium current to protect against glutamate-induced excitotoxicity. *J. Neurochem.* 153: 617-630.

## STORAGE

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