

KVβ.1 (H-5): sc-373986

BACKGROUND

Voltage-gated K⁺ channels in the plasma membrane control the repolarization and the frequency of action potentials in neurons, muscles and other excitable cells. The KV gene family encodes more than 30 proteins that comprise the subunits of the K⁺ channels, and they vary in their gating and permeation properties, subcellular distribution and expression patterns. Functional KV channels assemble as tetramers consisting of pore-forming α subunits (KV), which include the KV1, KV2, KV3 and KV4 proteins, and accessory or KV-subunits that modify the gating properties of the coexpressed KV subunits. KVβ.1 is an accessory K⁺ channel protein which regulates the activity of the pore-forming α subunit. It is expressed in the brain, with highest levels detected in the caudate nucleus, hippocampus and thalamus. KVβ.1 is also expressed in the amygdala, subthalamic nucleus and in both healthy and cardiomyopathic heart, where it is up to four times more abundant in the left ventricle than in the left atrium.

CHROMOSOMAL LOCATION

Genetic locus: KCNAB1 (human) mapping to 3q25.31; Kcnab1 (mouse) mapping to 3 E1.

SOURCE

KVβ.1 (H-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 327-351 within an internal region of KVβ.1 of human origin.

PRODUCT

Each vial contains 200 μg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

KVβ.1 (H-5) is available conjugated to agarose (sc-373986 AC), 500 μg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-373986 HRP), 200 μg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-373986 PE), fluorescein (sc-373986 FITC), Alexa Fluor® 488 (sc-373986 AF488), Alexa Fluor® 546 (sc-373986 AF546), Alexa Fluor® 594 (sc-373986 AF594) or Alexa Fluor® 647 (sc-373986 AF647), 200 μg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-373986 AF680) or Alexa Fluor® 790 (sc-373986 AF790), 200 μg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-373986 P, (100 μg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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STORAGE

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

PROTOCOLS

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

APPLICATIONS

KVβ.1 (H-5) is recommended for detection of KVβ.1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μg per 100-500 μg 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).

KVβ.1 (H-5) is also recommended for detection of KVβ.1 in additional species, including bovine.

Suitable for use as control antibody for KVβ.1 siRNA (h): sc-60903, KVβ.1 siRNA (m): sc-60904, KVβ.1 shRNA Plasmid (h): sc-60903-SH, KVβ.1 shRNA Plasmid (m): sc-60904-SH, KVβ.1 shRNA (h) Lentiviral Particles: sc-60903-V and KVβ.1 shRNA (m) Lentiviral Particles: sc-60904-V.

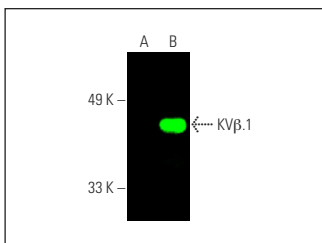
Molecular Weight of KVβ.1: 47 kDa.

Positive Controls: KVβ.1 (m): 293T Lysate: sc-121258.

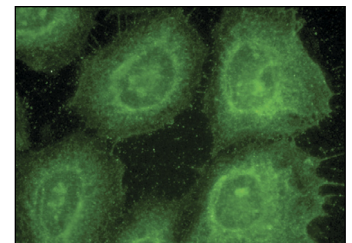
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



KVβ.1 (H-5): sc-373986. Near-infrared western blot analysis of KVβ.1 expression in non-transfected: sc-117752 (A) and mouse KVβ.1 transfected: sc-121258 (B) 293T whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 680: sc-516180.



KVβ.1 (H-5): sc-373986. Immunofluorescence staining of methanol-fixed HeLa cells showing membrane localization.

SELECT PRODUCT CITATIONS

- Wang, Y., et al. 2020. Site-specific contacts enable distinct modes of TRPV1 regulation by the potassium channel Kvβ1 subunit. J. Biol. Chem. E-published.

RESEARCH USE

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