

BACKGROUND

KCNC3 (potassium voltage-gated channel subfamily C member 3) is a multi-pass membrane-bound protein that acts as an ion channel and is generally expressed as a heterotetramer of potassium channeling proteins. The corneal epithelium is an important cell layer that functions to separate the corneal stroma from the anterior chamber of the eye. Increased expression of KCNC3 in confluent corneal endothelial cells suggests that the ionic current maintained by KCNC3 acts to regulate the hydration and transparency of the corneal stroma. Potassium channel regulation is also important for the high-frequency firing of cerebellar neurons. Defects, primarily missense mutations, in the gene encoding the KCNC3 protein have been attributed to neurological developmental disorders and adult onset neurological diseases.

REFERENCES

1. D'Adamo, M.C., et al. 1999. Mutations in the KCNA1 gene associated with episodic ataxia type-1 syndrome impair heteromeric voltage-gated K⁺ channel function. *FASEB J.* 13: 1335-1345.
2. Zuberi, S.M., et al. 1999. A novel mutation in the human voltage-gated potassium channel gene (Kv1.1) associates with episodic ataxia type 1 and sometimes with partial epilepsy. *Brain* 122: 817-825.
3. Rae, J.L., et al. 2000. Kv3.3 potassium channels in lens epithelium and corneal endothelium. *Exp. Eye Res.* 70: 339-348.
4. Imbrici, P., et al. 2003. Functional characterization of an episodic ataxia type-1 mutation occurring in the S1 segment of hKv1.1 channels. *Pflugers Arch.* 446: 373-379.

CHROMOSOMAL LOCATION

Genetic locus: KCNC3 (human) mapping to 19q13.33; Kcnc3 (mouse) mapping to 7 B4.

SOURCE

KCNC3 (D-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 709-724 within a C-terminal cytoplasmic domain of KCNC3 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.

KCNC3 (D-4) is available conjugated to agarose (sc-398047 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-398047 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398047 PE), fluorescein (sc-398047 FITC), Alexa Fluor® 488 (sc-398047 AF488), Alexa Fluor® 546 (sc-398047 AF546), Alexa Fluor® 594 (sc-398047 AF594) or Alexa Fluor® 647 (sc-398047 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398047 AF680) or Alexa Fluor® 790 (sc-398047 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-398047 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

KCNC3 (D-4) is recommended for detection of KCNC3 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).

KCNC3 (D-4) is also recommended for detection of KCNC3 in additional species, including bovine and porcine.

Suitable for use as control antibody for KCNC3 siRNA (h): sc-97185, KCNC3 siRNA (m): sc-146356, KCNC3 shRNA Plasmid (h): sc-97185-SH, KCNC3 shRNA Plasmid (m): sc-146356-SH, KCNC3 shRNA (h) Lentiviral Particles: sc-97185-V and KCNC3 shRNA (m) Lentiviral Particles: sc-146356-V.

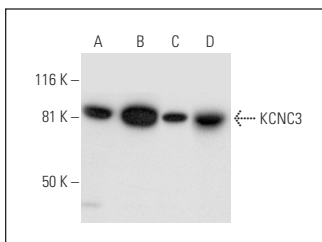
Molecular Weight of KCNC3: 81 kDa.

Positive Controls: Y79 cell lysate: sc-2240, K-562 whole cell lysate: sc-2203 or SK-N-MC cell lysate: sc-2237.

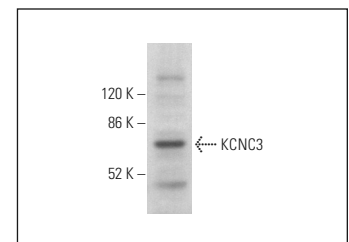
RECOMMENDED SUPPORT REAGENTS

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



KCNC3 (D-4): sc-398047. Western blot analysis of KCNC3 expression in K-562 (A), Y79 (B) and SK-N-MC (C) whole cell lysates and human brain tissue extract (D).



KCNC3 (D-4): sc-398047. Western blot analysis of KCNC3 expression in NIH/3T3 whole cell lysate.

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.

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