SANTA CRUZ BIOTECHNOLOGY, INC.

# KCNH3 (P-15): sc-168242

SANTA CRUZ BIOTECHNOLOGY

*The Power to Question*

## BACKGROUND

KCNH3 (potassium voltage-gated channel, subfamily H (eag-related), member 3) is a 1,083 amino acid protein that belongs to the Elk potassium channel family. KCNH3 is involved in cellular excitability of restricted neurons in the human central nervous system. KCNH3 is subcellularly located on the membrane and is considered a multi-pass membrane protein. KCNH3 protein has six transmembrane domains, a pore region of voltage-gated potassium channels, a CNB domain and putative N-glycosylation sites. KCNH3 elicits an outward current with fast inactivation, however this current is insensitive to tetraethylammonium and quinidine. Detected only in brain, in particular in the telencephalon, KCNH3 is expressed in cortical structures, such as cerebral cortex, amygdala and hippocampus, and in striatal regions, including the putamen and caudate nucleus. The KCNH3 gene maps to chromosome 12q13.12.

## REFERENCES


1. Sano, Y., et al. 2002. Molecular cloning and characterization of Kv6.3, a novel modulatory subunit for voltage-gated $K^+$ channel Kv2.1. FEBS Lett. 512: 230-234.
2. Ottschytsch, N., et al. 2002. Obligatory heterotetramerization of three previously uncharacterized Kv channel $\alpha$-subunits identified in the human genome. Proc. Natl. Acad. Sci. USA 99: 7986-7991.
3. Yan, L., et al. 2004. Expression of voltage-gated potassium channels in human and rhesus pancreatic islets. Diabetes 53: 597-607.
4. Ottschytsch, N., et al. 2005. Domain analysis of Kv6.3, an electrically silent channel. J. Physiol. 568: 737-747.
5. Fantozzi, I., et al. 2006. Bone morphogenetic protein-2 upregulates expression and function of voltage-gated $K^+$ channels in human pulmonary artery smooth muscle cells. Am. J. Physiol. Lung Cell. Mol. Physiol. 291: L993-L1004.
6. Börjesson, S.I., et al. 2008. Structure, function, and modification of the voltage sensor in voltage-gated ion channels. Cell Biochem. Biophys. 52: 149-174.


## CHROMOSOMAL LOCATION

Genetic locus: KCNH3 (human) mapping to 12q13.12; Kcnh3 (mouse) mapping to 15 F1.

## SOURCE

KCNH3 (P-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within a C-terminal cytoplasmic domain of KCNH3 of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-168242 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

KCNH3 (P-15) is recommended for detection of KCNH3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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); non cross-reactive with other KCNH family members.

KCNH3 (P-15) is also recommended for detection of KCNH3 in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for KCNH3 siRNA (h): sc-95657, KCNH3 siRNA (m): sc-146363, KCNH3 shRNA Plasmid (h): sc-95657-SH, KCNH3 shRNA Plasmid (m): sc-146363-SH, KCNH3 shRNA (h) Lentiviral Particles: sc-95657-V and KCNH3 shRNA (m) Lentiviral Particles: sc-146363-V.

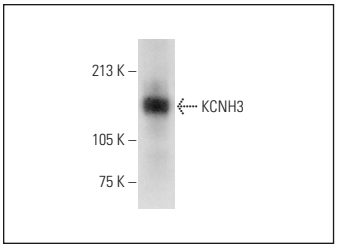
Molecular Weight of KCNH3: 117 kDa.

Positive Controls: rat brain extract: sc-2392.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA




KCNH3 (P-15): sc-168242. Western blot analysis of KCNH3 expression in rat brain tissue extract.

## 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.