

# HCN3 (TLL6C5): sc-58621

## BACKGROUND

Hyperpolarization-activated, cyclic nucleotide-binding channels (HCN) are voltage-gated cation channels that are activated by direct binding of intracellular cyclic nucleotides. The HCN family consists of four members (HCN1-4), each with a core transmembrane segment domain and a C-terminal 120 amino acid cyclic nucleotide-binding domain motif. HCN channels are expressed in the brain, heart, thalamus and testis. The pacemaker properties of HCN channels contribute to spontaneous rhythmic activity in the brain and heart. HCN3 contains a segment characterized by a series of positively charged amino acids at every third position. This region, designated S4, is likely to be the voltage sensor of the protein. In the brain, HCN3 and HCN4 exhibit subcortical distribution, mainly concentrated in the hypothalamus and thalamus, respectively.

## REFERENCES

1. Notomi, T., et al. 2004. Immunohistochemical localization of Ih channel subunits, HCN1-4, in the rat brain. *J. Comp. Neurol.* 471: 241-276.
2. Bajorat, R., et al. 2005. Functional significance of HCN2/3-mediated I(h) in striatal cells at early developmental stages. *J. Neurosci. Res.* 82: 206-213.
3. Stieber, J., et al. 2005. Functional expression of the human HCN3 channel. *J. Biol. Chem.* 280: 34635-34643.
4. Yamada, R., et al. 2005. Hyperpolarization-activated cyclic nucleotide-gated cation channels regulate auditory coincidence detection in nucleus laminaris of the chick. *J. Neurosci.* 25: 8867-8877.
5. Varghese, A., et al. 2006. Endogenous channels in HEK cells and potential roles in HCN ionic current measurements. *Prog. Biophys. Mol. Biol.* 90: 26-37.
6. SWISS-PROT/TrEMBL (Q9P1Z3). World Wide Web URL: <http://www.expasy.ch/sprot/sprot-top.html>.

## CHROMOSOMAL LOCATION

Genetic locus: HCN3 (human) mapping to 1q22; Hcn3 (mouse) mapping to 3 F1.

## SOURCE

HCN3 (TLL6C5) is a rat monoclonal antibody raised against a synthetic peptide of HCN3 of mouse origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

HCN3 (TLL6C5) is available conjugated to agarose (sc-58621 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-58621 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-58621 PE), fluorescein (sc-58621 FITC), Alexa Fluor® 488 (sc-58621 AF488), Alexa Fluor® 546 (sc-58621 AF546), Alexa Fluor® 594 (sc-58621 AF594) or Alexa Fluor® 647 (sc-58621 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-58621 AF680) or Alexa Fluor® 790 (sc-58621 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

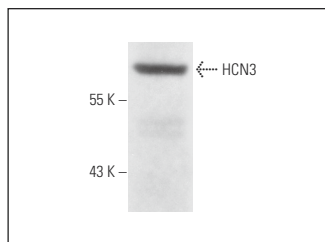
HCN3 (TLL6C5) is recommended for detection of HCN3 of mouse, rat, human, bovine and canine origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for HCN3 siRNA (h): sc-45651, HCN3 siRNA (m): sc-45652, HCN3 siRNA (r): sc-270293, HCN3 shRNA Plasmid (h): sc-45651-SH, HCN3 shRNA Plasmid (m): sc-45652-SH, HCN3 shRNA Plasmid (r): sc-270293-SH, HCN3 shRNA (h) Lentiviral Particles: sc-45651-V, HCN3 shRNA (m) Lentiviral Particles: sc-45652-V and HCN3 shRNA (r) Lentiviral Particles: sc-270293-V.

Molecular Weight of HCN3: 86 kDa.

Positive Controls: rat cerebellum extract: sc-2398 or rat brain extract: sc-2392.

## DATA



HCN3 (TLL6C5): sc-58621. Western blot analysis of HCN3 expression in rat brain tissue extract.

## SELECT PRODUCT CITATIONS

1. Yang, L., et al. 2023. An evolutionarily conserved pacemaker role for HCN ion channels in smooth muscle. *J. Physiol.* 601: 1225-1246.

## 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.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

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