

# HCN3 (E-5): sc-365452

## 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 Ih 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. Varghese, A., et al. 2005. Endogenous channels in HEK cells and potential roles in HCN ionic current measurements. *Prog. Biophys. Mol. Biol.* 90: 26-37.

## CHROMOSOMAL LOCATION

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

## SOURCE

HCN3 (E-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 143-181 within cytoplasmic domain of HCN3 of human origin.

## PRODUCT

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

HCN3 (E-5) is available conjugated to agarose (sc-365452 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365452 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365452 PE), fluorescein (sc-365452 FITC), Alexa Fluor® 488 (sc-365452 AF488), Alexa Fluor® 546 (sc-365452 AF546), Alexa Fluor® 594 (sc-365452 AF594) or Alexa Fluor® 647 (sc-365452 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365452 AF680) or Alexa Fluor® 790 (sc-365452 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-365452 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

## APPLICATIONS

HCN3 (E-5) is recommended for detection of HCN3 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).

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.

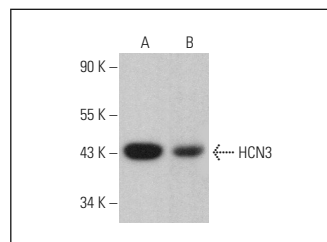
Molecular Weight of HCN3: 86 kDa.

Positive Controls: HCN3 (h): 293T Lysate: sc-114783, HCT-116 whole cell lysate: sc-364175 or human rectum extract: sc-363775.

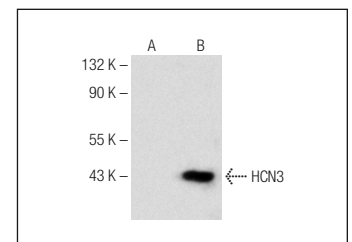
## RECOMMENDED SUPPORT REAGENTS

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



HCN3 (E-5): sc-365452. Western blot analysis of HCN3 expression in HCT-116 whole cell lysate (A) and human rectum tissue extract (B).



HCN3 (E-5): sc-365452. Western blot analysis of HCN3 expression in non-transfected: sc-117752 (A) and human HCN3 transfected: sc-114783 (B) 293T whole cell lysates.

## 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.