

**HCN2 Antibody**  
**HCN2 Antibody, Clone S71-37**  
**Catalog # ASM10183****Specification****HCN2 Antibody - Product Information**

Application	WB, IHC, ICC, IP, AM
Primary Accession	<a href="#">Q9JKA9</a>
Other Accession	<a href="#">NP_446136.1</a>
Host	Mouse
Isotype	IgG1
Reactivity	Human, Mouse, Rat
Clonality	Monoclonal

**Description**

Mouse Anti-Rat HCN2 Monoclonal IgG1

**Target/Specificity**

Detects ~95kDa. No cross-reactivity against HCN1.

**Other Names**

BCNG2 Antibody, HAC1 Antibody, brain cyclic nucleotide gated channel 2 Antibody, Potassium/sodium hyperpolarization-activated cyclic nucleotide-gated channel Antibody

**Immunogen**

Fusion protein amino acids 761-863 of rat HCN2

**Purification**

Protein G Purified

**Storage**

-20°C

**Storage Buffer**

PBS pH7.4, 50% glycerol, 0.09% sodium azide

**Shipping Temperature**

Blue Ice or 4°C

**Certificate of Analysis**

1 µg/ml of SMC-305 was sufficient for detection of HCN2 in 10 µg of rat brain lysate by colorimetric immunoblot analysis using Goat anti-mouse IgG:HRP as the secondary antibody.

**Cellular Localization**

Membrane

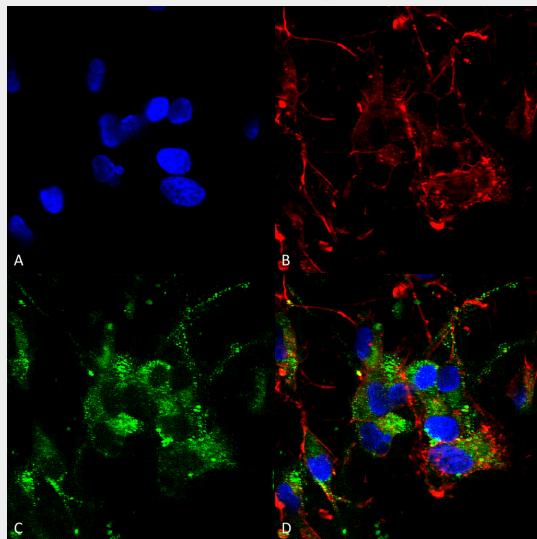
**HCN2 Antibody - Protocols**

Provided below are standard protocols that you may find useful for product applications.

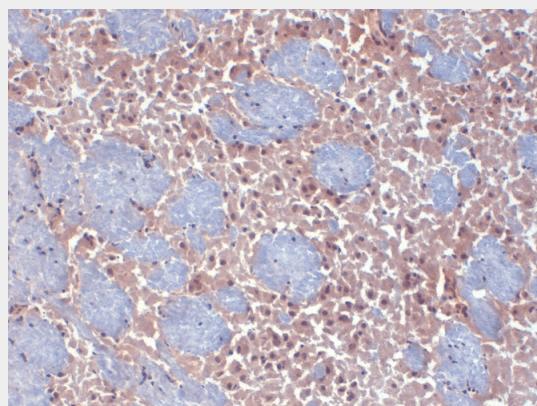
- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)

- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

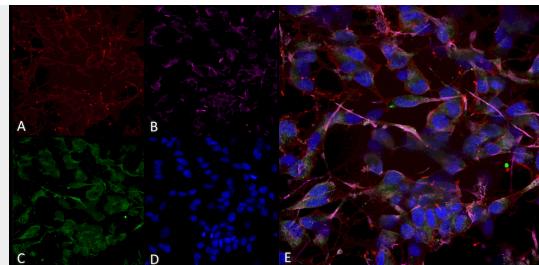
### HCN2 Antibody - Images



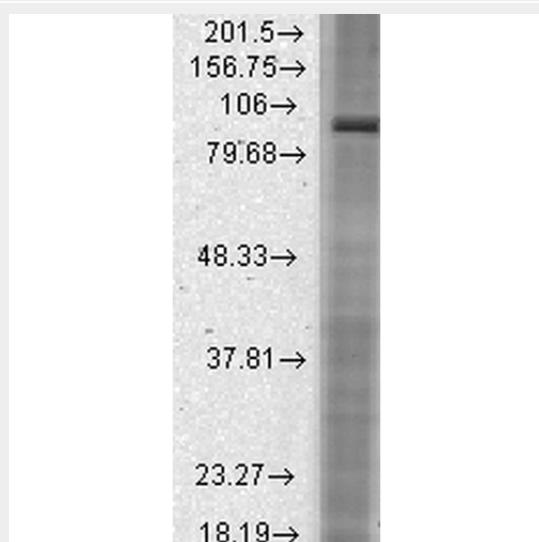
Immunocytochemistry/Immunofluorescence analysis using Mouse Anti-HCN2 Monoclonal Antibody, Clone S71 (ASM10183). Tissue: Neuroblastoma cells (SH-SY5Y). Species: Human. Fixation: 4% PFA for 15 min. Primary Antibody: Mouse Anti-HCN2 Monoclonal Antibody (ASM10183) at 1:50 for overnight at 4°C with slow rocking. Secondary Antibody: AlexaFluor 488 at 1:1000 for 1 hour at RT. Counterstain: Phalloidin-iFluor 647 (red) F-Actin stain; Hoechst (blue) nuclear stain at 1:800, 1.6mM for 20 min at RT. (A) Hoechst (blue) nuclear stain. (B) Phalloidin-iFluor 647 (red) F-Actin stain. (C) HCN2 Antibody (D) Composite.



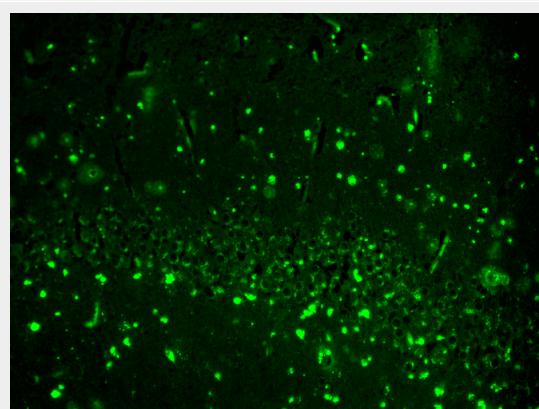
Immunohistochemistry analysis using Mouse Anti-HCN2 Monoclonal Antibody, Clone S71 (ASM10183). Tissue: frozen brain section. Species: mouse. Fixation: 10% Formalin Solution for 12-24 hours at RT. Primary Antibody: Mouse Anti-HCN2 Monoclonal Antibody (ASM10183) at 1:1000 for 1 hour at RT. Secondary Antibody: HRP/DAB Detection System: Biotinylated Goat Anti-Mouse, Streptavidin Peroxidase, DAB Chromogen (brown) for 30 minutes at RT. Counterstain: Mayer Hematoxylin (purple/blue) nuclear stain at 250-500 µl for 5 minutes at RT.



Immunocytochemistry/Immunofluorescence analysis using Mouse Anti-HCN2 Monoclonal Antibody, Clone S71-37 (ASM10183). Tissue: Differentiated SH-SY5Y. Species: Human. Primary Antibody: Mouse Anti-HCN2 Monoclonal Antibody (ASM10183) at 1:100. Secondary Antibody: AlexaFluor 488. Counterstain: phalloidin (Alexa 647, red), beta tubulin (Anti-beta III Tubulin Ab, Alexa 555, magenta) Hoechst (blue). (A) Phalloidin (B) Anti-beta III Tubulin Ab. (C) HCN2 Antibody. (D) Hoechst (E) Composite.



Western Blot analysis of Rat brain membrane lysate showing detection of HCN2 protein using Mouse Anti-HCN2 Monoclonal Antibody, Clone S71 (ASM10183). Load: 15  $\mu$ g. Block: 1.5% BSA for 30 minutes at RT. Primary Antibody: Mouse Anti-HCN2 Monoclonal Antibody (ASM10183) at 1:1000 for 2 hours at RT. Secondary Antibody: Sheep Anti-Mouse IgG: HRP for 1 hour at RT.



Immunohistochemistry analysis using Mouse Anti-HCN2 Monoclonal Antibody, Clone S71 (ASM10183). Tissue: hippocampus. Species: Human. Fixation: Bouin's Fixative and paraffin-embedded. Primary Antibody: Mouse Anti-HCN2 Monoclonal Antibody (ASM10183) at 1:100 for 1 hour at RT. Secondary Antibody: FITC Goat Anti-Mouse (green) at 1:50 for 1 hour at RT.



Western Blot analysis of Mouse Brain showing detection of ~95 kDa HCN2 protein using Mouse Anti-HCN2 Monoclonal Antibody, Clone S71 (ASM10183). Lane 1: MW Ladder. Lane 2: Mouse Brain (15 ug). Load: 15 ug. Block: 5% Skim Milk powder in TBST. Primary Antibody: Mouse Anti-HCN2 Monoclonal Antibody (ASM10183) at 1:1000 for 2 hours at RT with shaking. Secondary Antibody: Goat anti-mouse IgG:HRP at 1:4000 for 1 hour at RT with shaking. Color Development: Chemiluminescent for HRP (Moss) for 5 min in RT. Predicted/Observed Size: ~95 kDa.

### HCN2 Antibody - Background

Hyperpolarization-activated cyclic nucleotide-gated ion channel 2 (HCN2) is an integral membrane protein that helps establish and control the small voltage gradient across the plasma membrane of living cells by allowing the flow of ions down their electrochemical gradient (1). Ion channels are present in the membranes that surround all biological cells because their main function is to regulate the flow of ions across this membrane. Whereas some ion channels permit the passage of ions based on charge, others conduct based on a ionic species, such as sodium or potassium. Furthermore, in some ion channels, the passage is governed by a gate which is controlled by chemical or electrical signals, temperature, or mechanical forces. There are a few main classifications of gated ion channels. There are voltage- gated ion channels, ligand- gated, other gating systems and finally those that are classified differently, having more exotic characteristics. The first are voltage- gated ion channels which open and close in response to membrane potential. These are then separated into sodium, calcium, potassium, proton, transient receptor, and cyclic nucleotide-gated channels; each of which is responsible for a unique role. Ligand-gated ion channels are also known as ionotropic receptors, and they open in response to specific ligand molecules binding to the extracellular domain of the receptor protein. The other gated classifications include activation and inactivation by second messengers, inward-rectifier potassium channels, calcium-activated potassium channels, two-pore-domain potassium channels, light-gated channels, mechano-sensitive ion channels and cyclic nucleotide-gated channels. Finally, the other classifications are based on less normal characteristics such as two-pore channels, and transient receptor potential channels (2). Specifically, hyperpolarization-activated cation channels of the HCN gene family contribute to spontaneous rhythmic activity in both the heart and brain (3).

### HCN2 Antibody - References

1. Hille B. (2001) Ion Channels of Excitable Membranes, 3rd Ed., Sinauer Associated Inc.:Sunderland, MA USA.
2. [www.iochannels.org](http://www.iochannels.org)
3. Zong X., et al. (2005) J Biol Chem. 280(40): 34224-34232