SANTA CRUZ BIOTECHNOLOGY, INC.

SUR-2 (H-80): sc-25684

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Both suphonylurea receptor-1 (SUR-1) and sulphonylurea receptor-2 (SUR-2) belong to the ATP-binding cassette superfamily associated with KIR6.x. SUR-1 and KIR6.x proteins are required for the regulation of glucose-induced Insulin secretion by controlling K-ATP channel activity of the pancreatic β-cell membrane while SUR-2 and KIR6.x proteins reconstitute the cardiac and the vascular-smooth-muscle-type K-ATP channels. Loss-of-function mutations in the SUR-1 gene causes the disease persistent hyperinsulinemic hypoglycemia of infancy (PHHI). PHHI is characterized by increased irregular Insulin secretion, which causes disorganized formation of new islets and leads to hypoglycemia, coma and severe brain damage. The K-ATP channels controlled by SUR-2 are activated during myocardial ischemia, which suggests that mutations in the SUR-2 gene may cause channel malfunction and ischemic injury to the heart. No disease has yet been found to be associated with the SUR-2 gene.

REFERENCES

1. Chutkow, W.A., et al. 1996. Cloning, tissue expression, and chromosomal localization of SUR-2, the putative drug-binding subunit of cardiac, skeletal muscle, and vascular K-ATP channels. Diabetes 45: 1439-1445.
2. Thomas, P.M., et al. 1996. Inactivation of the first nucleotide-binding fold of the sulfonylurea receptor, and familial persistent byperinsulinemic hypoglycemia of infancy. Am. J. Hum. Genet. 59: 510-518.
3. Akao, M., et al. 1997. Myocardial ischemia induces differential regulation of K-ATP channel gene expression in rat hearts. J. Clin. Invest. 100: 3053-3059.
4. Schwanstecher, M., et al. 1998. Potassium channel openers require ATP to bind to and act through sulfonylurea receptors. EMBO J. 17: 5529-5535.
5. Shindo, T., et al. 1998. SUR-2 subtype (A and B)-dependent differential activation of the cloned ATP-sensitive K^+ channels by pinacidil and nicorandil. Br. J. Pharmacol. 124: 985-991.
6. Suzuki, M., et al. 1999. Immunolocalization of sulphonylurea receptor 1 in rat pancreas. Diabetologia 42: 1204-1211.
7. Meissner, T., et al. 1999. Congenital hyperinsulinism: molecular basis of a heteogeneous disease. Hum. Mutat. 13: 351-361.

CHROMOSOMAL LOCATION

Genetic locus: ABCC9 (human) mapping to 12p12.1; Abcc9 (mouse) mapping to 6 G2.

SOURCE

SUR-2 (H-80) is a rabbit polyclonal antibody raised against amino acids 921-1000 mapping within an internal region of SUR-2B of human origin.

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.

PRODUCT

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

APPLICATIONS

SUR-2 (H-80) is recommended for detection of SUR-2A and SUR-2B 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).

SUR-2 (H-80) is also recommended for detection of SUR-2A and SUR-2B in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for SUR-2 siRNA (h): sc-42636, SUR-2 siRNA (m): sc-42637, SUR-2 shRNA Plasmid (h): sc-42636-SH, SUR-2 shRNA Plasmid (m): sc-42637-SH, SUR-2 shRNA (h) Lentiviral Particles: sc-42636-V and SUR-2 shRNA (m) Lentiviral Particles: sc-42637-V.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Kang, Y., et al. 2004. Syntaxin 1A inhibits cardiac KATP channels by its actions on nucleotide binding folds 1 and 2 of sulfonylurea receptor 2A. J. Biol. Chem. 279: 47125-47131.
2. Stadnicka, A., et al. 2006. Impact of *in vivo* preconditioning by isoflurane on adenosine triphosphate-sensitive potassium channels in the rat heart: lasting modulation of nucleotide sensitivity during early memory period. Anesthesiology 104: 503-510.
3. Simard, J.M., et al. 2007. Endothelial sulfonylurea receptor 1-regulated NC Ca-ATP channels mediate progressive hemorrhagic necrosis following spinal cord injury. J. Clin. Invest. 117: 2105-2113.
4. Edwards, A.G., et al. 2009. PKC-permitted elevation of sarcolemmal KATP concentration may explain female-specific resistance to myocardial infarction. J. Physiol. 587: 5723-5737.
5. Grabauskas, G., et al. 2010. Electrophysiological identification of glucose-sensing neurons in rat nodose ganglia. J. Physiol. 588: 617-632.