

SUR-1/2 (D-18): sc-5791

BACKGROUND

Both sulphonylurea 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. Thomas, P.M., et al. 1996. Inactivation of the first nucleotide-binding fold of the sulfonylurea receptor, and familial persistent hyperinsulinemic hypoglycemia of infancy. *Am. J. Hum. Genet.* 59: 510-518.
2. 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.
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. 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.

CHROMOSOMAL LOCATION

Genetic locus: ABCC8 (human) mapping to 11p15.1, ABCC9 (human) mapping to 12p12.1; Abcc8 (mouse) mapping to 7 B3, Abcc9 (mouse) mapping to 6 G3.

SOURCE

SUR-1/2 (D-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of SUR-1 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-5791 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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.

APPLICATIONS

SUR-1/2 (D-18) is recommended for detection of SUR-1 and SUR-2B of mouse, rat and human origin and SUR-2A of human and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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-1/2 (D-18) is also recommended for detection of SUR-1, SUR-2B and SUR-2A in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for SUR-1/2 siRNA (h): sc-44131, SUR-1/2 shRNA Plasmid (h): sc-44131-SH and SUR-1/2 shRNA (h) Lentiviral Particles: sc-44131-V.

Molecular Weight of mature glycosylated SUR-1/2: 180-150 kDa.

Molecular Weight of immature glycosylated SUR-1/2: 140 kDa.

Positive Controls: MIA PaCa-2 cell lysate: sc-2285, JAR cell lysate: sc-2276 or 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) 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.

SELECT PRODUCT CITATIONS

1. Lacza, Z., et al. 2003. Heart mitochondria contain functional ATP-dependent K⁺ channels. *J. Mol. Cell. Cardiol.* 35: 1339-1347.
2. Philip-Couderc, P., et al. 2008. Forkhead transcription factors coordinate expression of myocardial KATP channel subunits and energy metabolism. *Circ. Res.* 102: e20-e35.
3. Takami, G., et al. 2010. Effects of atypical antipsychotics and haloperidol on PC12 cells: only aripiprazole phosphorylates AMP-activated protein kinase. *J. Neural. Transm.* 117: 1139-1153.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.



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Try **SUR-1 (3G5): sc-293436**, our highly recommended monoclonal alternative to SUR-1/2 (D-18).