SANTA CRUZ BIOTECHNOLOGY, INC.

SUR-2A (M-19): sc-32462

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. 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.
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 reguation 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-2A (M-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of SUR-2A of mouse 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.

Blocking peptide available for competition studies, sc-32462 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

SUR-2A (M-19) is recommended for detection of SUR-2A of mouse, rat and, to a lesser extent, human 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); non cross-reactive with SUR-2B.

SUR-2A (M-19) is also recommended for detection of SUR-2A in additional species, including equine and canine.

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 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.

PROTOCOLS

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