

SUR-1 (H-80): sc-25683

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. Chutkow, W.A., et al. 1996. Cloning, tissue expression, and chromosomal localization of SUR2, the putative drug-binding subunit of cardiac, skeletal muscle, and vascular KATP channels. *Diabetes* 45: 1439-1445.
2. Thomas, P.M., et al. 1996. Inactivation of the first nucleotide-binding fold of the sulphonylurea receptor, and familial persistent hyperinsulinemic hypoglycemia of infancy. *Am. J. Hum. Genet.* 59: 510-518.

CHROMOSOMAL LOCATION

Genetic locus: ABCC8 (human) mapping to 11p15.1; Abcc8 (mouse) mapping to 7 B4.

SOURCE

SUR-1 (H-80) is a rabbit polyclonal antibody raised against amino acids 611-690 mapping within an internal region 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.

APPLICATIONS

SUR-1 (H-80) is recommended for detection of SUR-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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-1 (H-80) is also recommended for detection of SUR-1 in additional species, including equine, bovine and porcine.

Suitable for use as control antibody for SUR-1 siRNA (h): sc-42634, SUR-1 siRNA (m): sc-42635, SUR-1 shRNA Plasmid (h): sc-42634-SH, SUR-1 shRNA Plasmid (m): sc-42635-SH, SUR-1 shRNA (h) Lentiviral Particles: sc-42634-V and SUR-1 shRNA (m) Lentiviral Particles: sc-42635-V.

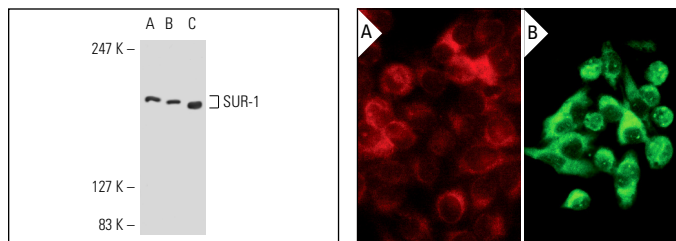
Molecular Weight of mature glycosylated SUR-1: 150-180 kDa.

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

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



SUR-1 (H-80): sc-25683. Western blot analysis of SUR-1 expression in MIA PaCa-2 (A) and JAR (B) whole cell lysates and rat brain tissue extract (C).

SUR-1 (H-80): sc-25683. Immunofluorescence staining of methanol-fixed HeLa (A) and MIA PaCa-2 (B) cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Miura, A., et al. 2006. Hepatocyte nuclear factor-4 α is essential for glucose-stimulated Insulin secretion by pancreatic β -cells. *J. Biol. Chem.* 281: 5246-5257.
2. Wu, J., et al. 2006. Iptakalim modulates ATP-sensitive K⁺ channels in dopamine neurons from rat substantia nigra pars compacta. *J. Pharmacol. Exp. Ther.* 319: 155-164.
3. Ploug, K.B., et al. 2008. K(ATP) channel expression and pharmacological *in vivo* and *in vitro* studies of the K(ATP) channel blocker PNU-37883A in rat middle meningeal arteries. *Br. J. Pharmacol.* 154: 72-81.
4. Huang, L., et al. 2009. ATP-sensitive potassium channels control glioma cells proliferation by regulating ERK activity. *Carcinogenesis* 30: 737-744.
5. Tsukada, S., et al. 2009. Transcription factor AP-2 β inhibits glucose-induced Insulin secretion in cultured Insulin-secreting cell-line. *Diabetes Res. Clin. Pract.* 85: 279-285.
6. Tsang, S.W., et al. 2010. Increased basal Insulin secretion in Pdzd2-deficient mice. *Mol. Cell. Endocrinol.* 315: 263-270.
7. Schmid, D., et al. 2012. An abundant, truncated human sulphonylurea receptor 1 splice variant has prodiabetic properties and impairs sulphonylurea action. *Cell. Mol. Life Sci.* 69: 129-148.
8. Pouokam, E., et al. 2013. ATP-sensitive K⁺ channels in rat colonic epithelium. *Pflugers Arch.* 465: 865-877.

RESEARCH USE

For research use only, not for use in diagnostic procedures.



Try **SUR-1 (3G5): sc-293436**, our highly recommended monoclonal alternative to SUR-1 (H-80).