SANTA CRUZ BIOTECHNOLOGY, INC.

MFSD1 (D-13): sc-103040

BACKGROUND

The major facilitator superfamily consists of presumed carbohydrate transporters with 10-12 membrane-spanning domains. MFSD1 (major facilitator superfamily domain-containing protein 1), also known as smooth muscle cell-associated protein 4, is a 465 amino acid multi-pass membrane protein that exists as two isoforms as a result of alternative splicing events. A related protein, MFSD2, may play a role in placenta morphogenesis and may also be involved in adaptive thermogenesis. The gene encoding MFSD1 maps to human chromosome 3, which is made up of about 214 million bases encoding over 1,100 genes, including a chemokine receptor (CKR) gene cluster and a variety of human cancer-related gene loci. Marfan syndrome, porphyria, von Hippel-Lindau syndrome, osteogenesis imperfecta and Charcot-Marie-Tooth disease are a few of the numerous genetic diseases associated with chromosome 3.

REFERENCES

1. Müller, S., et al. 2000. Molecular cytogenetic dissection of human chromosomes 3 and 21 evolution. Proc. Natl. Acad. Sci. USA 97: 206-211.
2. Braga, E.A., et al. 2003. New tumor suppressor genes in hot spots of human chromosome 3: new methods of identification. Mol. Biol. 37: 194-211.
3. Muzny, D.M., et al. 2006. The DNA sequence, annotation and analysis of human chromosome 3. Nature 440: 1194-1198.
4. Angers, M., et al. 2008. Mfsd2a encodes a novel major facilitator superfamily domain-containing protein highly induced in brown adipose tissue during fasting and adaptive thermogenesis. Biochem. J. 416: 347-355.
5. Ruiz-Herrera, A., et al. 2008. Evolutionary plasticity and cancer breakpoints in human chromosome 3. Bioessays 30: 1126-1137.
6. Fluman, N., et al. 2009. Bacterial multidrug transport through the lens of the major facilitator superfamily. Biochim. Biophys. Acta 1794: 738-747.
7. Sigal, N., et al. 2009. The secondary multidrug/proton antiporter MdfA tolerates displacements of an essential negatively charged side chain. J. Biol. Chem. 284: 6966-6971.

CHROMOSOMAL LOCATION

Genetic locus: MFSD1 (human) mapping to 3q25.32.

SOURCE

MFSD1 (D-13) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping within an internal region of MFSD1 of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-103040 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

MFSD1 (D-13) is recommended for detection of MFSD1 of 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); non cross-reactive with other MFSD family members.

MFSD1 (D-13) is also recommended for detection of MFSD1 in additional species, including equine, bovine and porcine.

Suitable for use as control antibody for MFSD1 siRNA (h): sc-78463, MFSD1 shRNA Plasmid (h): sc-78463-SH and MFSD1 shRNA (h) Lentiviral Particles: sc-78463-V.

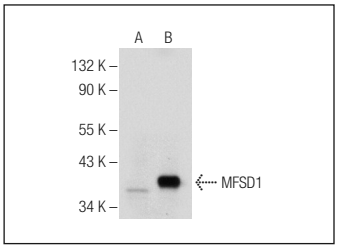
Molecular Weight of MFSD1: 51 kDa.

Positive Controls: MFSD1 (h): 293T Lysate: sc-115778.

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.

DATA



MFSD1 (D-13): sc-103040. Western blot analysis of MFSD1 expression in non-transfected: sc-117752 (**A**) and human MFSD1 transfected: sc-115778 (**B**) 293T whole cell lysates.

STORAGE

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

PROTOCOLS

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