SANTA CRUZ BIOTECHNOLOGY, INC.

MFSD1 (A-11): sc-398710

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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.

CHROMOSOMAL LOCATION

Genetic locus: MFSD1 (human) mapping to 3q25.32; Mfsd1 (mouse) mapping to 3 E1.

SOURCE

MFSD1 (A-11) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 434-458 at the C-terminus of MFSD1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

MFSD1 (A-11) is available conjugated to agarose (sc-398710 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-398710 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398710 PE), fluorescein (sc-398710 FITC), Alexa Fluor® 488 (sc-398710 AF488), Alexa Fluor® 546 (sc-398710 AF546), Alexa Fluor® 594 (sc-398710 AF594) or Alexa Fluor® 647 (sc-398710 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398710 AF680) or Alexa Fluor® 790 (sc-398710 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-398710 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

MFSD1 (A-11) is recommended for detection of MFSD1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

Suitable for use as control antibody for MFSD1 siRNA (h): sc-78463, MFSD1 siRNA (m): sc-149405, MFSD1 shRNA Plasmid (h): sc-78463-SH, MFSD1 shRNA Plasmid (m): sc-149405-SH, MFSD1 shRNA (h) Lentiviral Particles: sc-78463-V and MFSD1 shRNA (m) Lentiviral Particles: sc-149405-V.

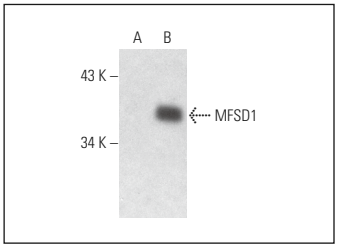
Molecular Weight of MFSD1: 51 kDa.

Positive Controls: MFSD1 (h2): 293T Lysate: sc-115778 or MFSD1 (m): 293T Lysate: sc-121622.

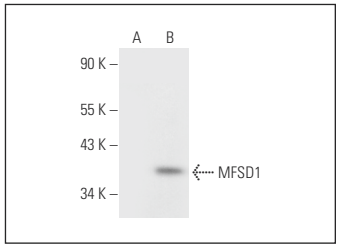
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



MFSD1 (A-11): sc-398710. Western blot analysis of MFSD1 expression in non-transfected: sc-117752 (**A**) and mouse MFSD1 transfected: sc-121622 (**B**) 293T whole cell lysates.



MFSD1 (A-11): sc-398710. 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.

RESEARCH USE

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