

# MFSD3 (P-18): sc-98006

## BACKGROUND

The Major facilitator superfamily consists of presumed carbohydrate transporters with 10-12 membrane-spanning domains. MFSD3 (Major facilitator superfamily domain-containing protein 3) is a 412 amino acid multi-pass membrane protein that is likely a carrier that transports small solutes by using chemiosmotic ion gradients. Significantly, a related protein, MFSD2, may play a role in placenta morphogenesis and may also be involved in adaptive thermogenesis. The gene encoding MFSD3 maps to chromosome 8, which is made up of nearly 146 million bases and encodes about 800 genes. Translocation of portions of chromosome 8 with amplifications of the c-Myc gene are found in some leukemias and lymphomas, and are typically associated with a poor prognosis. Portions of chromosome 8 have been linked to schizophrenia and bipolar disorder. Chromosome 8 is also associated with Pfeiffer syndrome, congenital hypothyroidism and Waardenburg syndrome.

## REFERENCES

1. Wildenauer, D.B. and Schwab, S.G. 1999. Chromosomes 8 and 10 workshop. *Am. J. Med. Genet.* 88: 239-243.
2. Kashino, G., Kodama, S., Suzuki, K., Oshimura, M. and Watanabe, M. 2001. Preferential expression of an intact WRN gene in Werner syndrome cell lines in which a normal chromosome 8 has been introduced. *Biochem. Biophys. Res. Commun.* 289: 111-115.
3. Selicorni, A., Gueneri, S., Ratti, A. and Pizzuti, A. 2002. Cytogenetic mapping of a novel locus for type II Waardenburg syndrome. *Hum. Genet.* 110: 64-67.
4. Nusbaum, C., Mikkelsen, T.S., Zody, M.C., Asakawa, S., Taudien, S., Garber, M., Kodira, C.D., Schueler, M.G., Shimizu, A., Whittaker, C.A., Chang, J.L., et al. 2006. DNA sequence and analysis of human chromosome 8. *Nature* 439: 331-335.
5. Angers, M., Uldry, M., Kong, D., Gimble, J.M. and Jetten, A.M. 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.
6. Fluman, N. and Bibi, E. 2009. Bacterial multidrug transport through the lens of the major facilitator superfamily. *Biochim. Biophys. Acta* 1794: 738-747.
7. Sigal, N., Fluman, N., Siemion, S. and Bibi, E. 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: MFSD3 (human) mapping to 8q24.3.

## SOURCE

MFSD3 (P-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of MFSD3 of human origin.

## 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-98006 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

MFSD3 (P-18) is recommended for detection of MFSD3 of 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 MFSD1.

Suitable for use as control antibody for MFSD3 siRNA (h): sc-77574, MFSD3 shRNA Plasmid (h): sc-77574-SH and MFSD3 shRNA (h) Lentiviral Particles: sc-77574-V.

Molecular Weight of MFSD3: 43 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206.

## 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.

## 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](http://www.scbt.com) or our catalog for detailed protocols and support products.