

Sam50 (G-16): sc-86847

BACKGROUND

Sam50 (sorting assembly machinery component 50 homolog, *S. cerevisiae*), also known as SAMM50, OMP85, TOB55, TRG-3, CGI-51 or YNL026W, is a β -barrel multi-pass membrane protein that belongs to the SAM50/omp85 family of proteins. Localizing to the mitochondrion, Sam50 is believed to function in the assembly pathway of mitochondrial outer membrane β -barrel proteins. More specifically, Sam50 functions as the major component of the SAM (sorting and assembly machinery) complex, also known as the TOB (topogenesis of mitochondrial outer membrane β -barrel proteins) complex, and is required for cell viability. Exposed to the intermembrane space (IMS), the N-terminal POTRA (polypeptide transport-associated) domain of Sam50 (a domain that is conserved from bacteria to man) functions like a receptor for β -barrel proteins. The association of the Sam35 subunit of the SAM complex is essential for Sam50 binding to outer membrane substrate proteins.

REFERENCES

1. Kozjak, V., et al. 2003. An essential role of Sam50 in the protein sorting and assembly machinery of the mitochondrial outer membrane. *J. Biol. Chem.* 278: 48520-48523.
2. Meisinger, C., et al. 2004. The mitochondrial morphology protein Mdm10 functions in assembly of the preprotein translocase of the outer membrane. *Dev. Cell* 7: 61-71.
3. Habib, S.J., et al. 2005. Assembly of the TOB complex of mitochondria. *J. Biol. Chem.* 280: 6434-6440.
4. Humphries, A.D., et al. 2005. Dissection of the mitochondrial import and assembly pathway for human Tom40. *J. Biol. Chem.* 280: 11535-11543.
5. Paschen, S.A., et al. 2005. Biogenesis of β -barrel membrane proteins of mitochondria. *Trends Biochem. Sci.* 30: 575-582.
6. Meisinger, C., et al. 2006. Mitochondrial protein sorting: differentiation of β -barrel assembly by Tom7-mediated segregation of Mdm10. *J. Biol. Chem.* 281: 22819-22826.
7. Habib, S.J., et al. 2007. The N-terminal domain of Tob55 has a receptor-like function in the biogenesis of mitochondrial β -barrel proteins. *J. Cell Biol.* 176: 77-88.
8. Kutik, S., et al. 2008. Dissecting membrane insertion of mitochondrial β -barrel proteins. *Cell* 132: 1011-1024.
9. Chan, N.C. and Lithgow, T. 2008. The peripheral membrane subunits of the SAM complex function codependently in mitochondrial outer membrane biogenesis. *Mol. Biol. Cell* 19: 126-136.

CHROMOSOMAL LOCATION

Genetic locus: SAMM50 (human) mapping to 22q13.31; Samm50 (mouse) mapping to 15 E2.

SOURCE

Sam50 (G-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Sam50 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.

Blocking peptide available for competition studies, sc-86847 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Sam50 (G-16) is recommended for detection of Sam50 of mouse, rat and 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).

Sam50 (G-16) is also recommended for detection of Sam50 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for Sam50 siRNA (h): sc-76440, Sam50 siRNA (m): sc-153199, Sam50 shRNA Plasmid (h): sc-76440-SH, Sam50 shRNA Plasmid (m): sc-153199-SH, Sam50 shRNA (h) Lentiviral Particles: sc-76440-V and Sam50 shRNA (m) Lentiviral Particles: sc-153199-V.

Molecular Weight of Sam50: 51 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201.

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.

RESEARCH USE

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

PROTOCOLS

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



Try **Sam50 (SQ-7): sc-100493**, our highly recommended monoclonal alternative to Sam50 (G-16).