SANTA CRUZ BIOTECHNOLOGY, INC.

Sam50 (SQ-7): sc-100493

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The Power to Question

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

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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.
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CHROMOSOMAL LOCATION

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

SOURCE

Sam50 (SQ-7) is a mouse monoclonal antibody raised against recombinant Sam50 of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Sam50 (SQ-7) 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), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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.

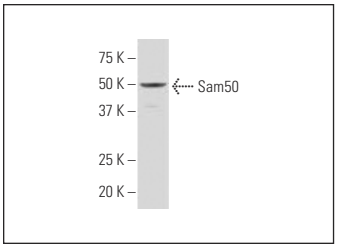
Molecular Weight of Sam50: 51 kDa.

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

RECOMMENDED 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).

DATA



Sam50 (SQ-7): sc-100493. Western blot analysis of Sam50 expression in A-431 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Sastri, M., et al. 2017. Sub-mitochondrial localization of the genetic-tagged mitochondrial intermembrane space-bridging components Mic19, Mic60 and Sam50. J. Cell Sci. 130: 3248-3260.

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.