SANTA CRUZ BIOTECHNOLOGY, INC.

Smt3 (E-1): sc-137158

BACKGROUND

Ubiquitin is an abundant, highly conserved protein found in all eukaryotic cells either free or covalently attached to cellular proteins. The primary function of ubiquitin in mammalian systems is to clear abnormal, foreign, and improperly folded proteins by targeting them for proteosome degradation. In *Saccharomyces cerevisiae*, ubiquitin-like proteins include Rub1, Ula1, Uba3, Smt3, Ubc2, Ubc12 and Ubc9. Rub1 shares 53% homology with ubiquitin and requires activation via Ula1, Uba3 and Ubc12 in order to conjugate to substrates directed to different proteolytic systems. Smt3, which is similar to mammalian SUMO-1, requires Ubc9 for conjugation to other proteins. Skp1 connects cell cycle regulators to the ubiquitin proteolysis machinery. Hrt1 is an essential subunit of Skp1p-cullin-F-box (SCF) complexes, which are necessary for the degradation of various regulatory proteins. Ubc13 forms a complex with Mms2 that is involved the error-free DNA postreplication repair (PRR) pathway.

REFERENCES

1. Ciechanover, A. 1994. The ubiquitin-proteasome proteolytic pathway. Cell 79: 13-21.
2. Ciechanover, A. and Schwartz, A.L. 1994. The ubiquitin-mediated proteolytic pathway: mechanisms of recognition of the proteolytic substrate and involvement in the degradation of native cellular proteins. FASEB J. 8: 182-191.
3. Hochstrasser, M. 1995. Ubiquitin, proteasomes and the regulation of intracellular protein degradation. Curr. Opin. Cell Biol. 7: 215-223.
4. Bai, C., et al. 1996. SKP1 connects cell cycle regulators to the ubiquitin proteolysis machinery through a novel motif, the F-box. Cell 86: 263-274.
5. Liakopoulos, D., et al. 1998. A novel protein modification pathway related to the ubiquitin system. EMBO J. 17: 2208-2214.

SOURCE

Smt3 (E-1) is a mouse monoclonal antibody raised against amino acids 15-98 of Smt3 of *Saccharomyces cerevisiae* 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.

Smt3 (E-1) is available conjugated to agarose (sc-137158 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-137158 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-137158 PE), fluorescein (sc-137158 FITC), Alexa Fluor® 488 (sc-137158 AF488), Alexa Fluor® 546 (sc-137158 AF546), Alexa Fluor® 594 (sc-137158 AF594) or Alexa Fluor® 647 (sc-137158 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-137158 AF680) or Alexa Fluor® 790 (sc-137158 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

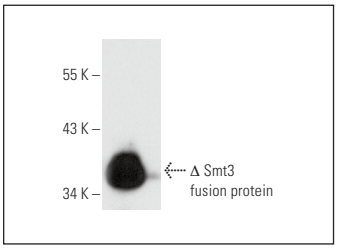
Smt3 (E-1) is recommended for detection of Smt3 of *Saccharomyces cerevisiae* origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Molecular Weight of Smt3: 12 kDa.

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



Smt3 (E-1): sc-137158. Western blot analysis of truncated yeast recombinant Smt3 fusion protein.

SELECT PRODUCT CITATIONS

1. Pan, H., et al. 2021. Structure, dynamics, and regulation of TRF1-TIN2-mediated *trans*- and *cis*-interactions on telomeric DNA. J. Biol. Chem. 297: 101080.

RESEARCH USE

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

PROTOCOLS

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