SANTA CRUZ BIOTECHNOLOGY, INC.

SSAT (H-77): sc-67159

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Polyamines are required for optimal growth and function of cells. Regulation of their cellular homeostasis is therefore tightly controlled. The key regulatory enzyme for polyamine catabolism is the spermidine/spermine N_1-acetyltransferase (SSAT). Depletion of cellular polyamines has been associated with inhibition of growth and programmed cell death. SSAT first acetylates spermidine and spermine, which then are oxidized by polyamine oxidase to produce putrescine and spermidine, respectively. SSAT has been shown to suppress tumor outgrowth and be a potential target for therapeutic purposes.

REFERENCES

1. Alhonen, L., et al. 2000. Activation of polyamine catabolism in transgenic rats induces acute pancreatitis. Proc. Natl. Acad. Sci. USA 97: 8290-8295.
2. Coleman, C.S., et al. 2001. Polyamine analogues inhibit the ubiquitination of spermidine/spermine N_1-acetyltransferase and prevent its targeting to the proteasome for degradation. Biochem. J. 358: 137-145.
3. Gavin, I.M., et al. 2004. Spermine acts as a negative regulator of macrophage differentiation in human myeloid leukemia cells. Cancer Res. 64: 7432-7438.
4. Chen, C., et al. 2004. Spermidine/spermine N_1-acetyltransferase specifically binds to the Integrin α9 subunit cytoplasmic domain and enhances cell migration. J. Cell Biol. 167: 161-170.
5. Tucker, J.M., et al. 2005. Potent modulation of catabolic enzyme spermidine/spermine N_1-acetyltransferase. Cancer Res. 65: 5390-5398.
6. Pietila, M., et al. 2005. Disturbed keratinocyte differentiation in transgenic mice and organotypic keratinocyte cultures as a result of spermidine/spermine N-acetyltransferase overexpression. J. Invest. Dermatol. 124: 596-601.

CHROMOSOMAL LOCATION

Genetic locus: SAT1 (human) mapping to Xp22.11; Sat1 (mouse) mapping to X F3.

SOURCE

SSAT (H-77) is a rabbit polyclonal antibody raised against amino acids 95-171 mapping at the C-terminus of SSAT of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

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 or our catalog for detailed protocols and support products.

APPLICATIONS

SSAT (H-77) is recommended for detection of SSAT 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)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

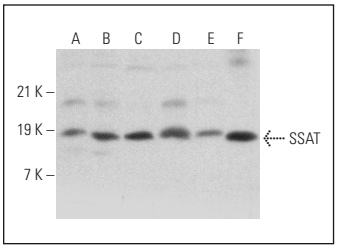
SSAT (H-77) is also recommended for detection of SSAT in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for SSAT siRNA (h): sc-61616, SSAT siRNA (m): sc-61617, SSAT shRNA Plasmid (h): sc-61616-SH, SSAT shRNA Plasmid (m): sc-61617-SH, SSAT shRNA (h) Lentiviral Particles: sc-61616-V and SSAT shRNA (m) Lentiviral Particles: sc-61617-V.

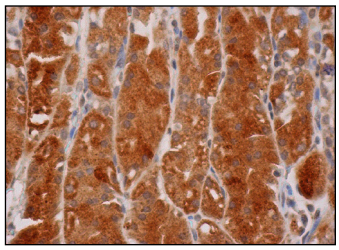
Molecular Weight of SSAT: 20 kDa.

Positive Controls: mouse testis extract: sc-2405, Jurkat whole cell lysate: sc-2204 or K-562 whole cell lysate: sc-2203.

DATA



SSAT (H-77): sc-67159. Western blot analysis of SSAT expression in Jurkat (**A**), K-562 (**B**), HEK293 (**C**), SHP-77 (**D**) and C32 (**E**) whole cell lysates and mouse testis tissue extract (**F**).



SSAT (H-77): sc-67159. Immunoperoxidase staining of formalin fixed, paraffin-embedded human upper stomach tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Kreutzer, J.N., et al. 2011. Role of polyamines in determining the cellular response to chemotherapeutic agents: modulation of protein kinase CK2 expression and activity. Mol. Cell. Biochem. 356: 149-158.
2. Gürkan, A.C., et al. 2013. Inhibition of polyamine oxidase prevented cyclin-dependent kinase inhibitor-induced apoptosis in HCT 116 colon carcinoma cells. Apoptosis 18: 1536-1547.
3. Brett-Morris, A., et al. 2014. The polyamine catabolic enzyme SAT1 modulates tumorigenesis and radiation response in GBM. Cancer Res. 74: 6925-6934.
4. Obakan, P., et al. 2014. Activation of polyamine catabolic enzymes involved in diverse responses against epibrassinolide-induced apoptosis in LNCaP and DU145 prostate cancer cell lines. Amino Acids 46: 553-564.

RESEARCH USE

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