

SSAT (K-18): sc-47427

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

- Alhonen, L., Parkkinen, J.J., Keinänen, T., Sinervirta, R., Herzig, K.H. and Jänne, J. 2000. Activation of polyamine catabolism in transgenic rats induces acute pancreatitis. *Proc. Natl. Acad. Sci. USA* 97: 8290-8295.
- Coleman, C.S. and Pegg, A.E. 2001. Polyamine analogues inhibit the ubiquitination of spermidine/spermine N1-acetyltransferase and prevent its targeting to the proteasome for degradation. *Biochem. J.* 358: 137-145.
- Gavin, I.M., Glesne, D., Zhao, Y., Kubera, C. and Huberman, E. 2004. Spermine acts as a negative regulator of macrophage differentiation in human myeloid leukemia cells. *Cancer Res.* 64: 7432-7438.
- Chen, C., Young, B.A., Coleman, C.S., Pegg, A.E. and Sheppard, D. 2004. Spermidine/spermine N1-acetyltransferase specifically binds to the integrin α 9 subunit cytoplasmic domain and enhances cell migration. *J. Cell Biol.* 167: 161-170.
- Tucker, J.M., Murphy, J.T., Kisiel, N., Diegelman, P., Barbour, K.W., Davis, C., Medda, M., Alhonen, L., Jänne, J., Kramer, D.L., Porter, C.W. and Berger, F.G. 2005. Potent modulation of catabolic enzyme spermidine/spermine N1-acetyltransferase. *Cancer Res.* 65: 5390-5398.
- Pietila, M., Pirinen, E., Keskitalo, S., Juutinen, S., Pasonen-Seppänen, S., Keinänen, T., Alhonen, L. and Janne, J. 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.
- Qutob, S.S., Proulx, D., Mesak, F.M. and Ng, C.E. 2005. Effects of N1, N13-diethyl norspermine (DENSPM) and X-radiation treatment on human colorectal tumor clones with varying X-radiation and drug responses. *Radiat. Res.* 163: 357-363.
- Kim, K., Ryu, J.H., Park, J.W., Kim, M.S. and Chun, Y.S. 2005. Induction of a SSAT isoform in response to hypoxia or iron deficiency and its protective effects on cell death. *Biochem. Biophys. Res. Commun.* 331: 78-85.
- Hyvönen, M.T., Uimari, A., Keinänen, T.A., Heikkinen, S., Pellinen, R., Wahlfors, T., Korhonen, A., Närvänen, A., Wahlfors, J., Alhonen, L. and Jänne, J. 2006. Polyamine-regulated unproductive splicing and translation of spermidine/spermine N1-acetyltransferase. *RNA* 12: 1569-1582.

CHROMOSOMAL LOCATION

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

SOURCE

SSAT (K-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of SSAT 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-47427 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

SSAT (K-18) 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), 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).

SSAT (K-18) is also recommended for detection of SSAT in additional species, including equine, 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.

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.