SANTA CRUZ BIOTECHNOLOGY, INC.

SP-lyase (H-300): sc-67368

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Sphingosine-1-phosphate lyase (SP-lyase) is a member of the group II decarboxylase family that is involved in lipid metabolism. SP-lyase has a variety of functions contributing to normal development, including maintenance of the reproductive system, stress responses, tissue integrity and cell survival. Located in the membrane of the endoplasmic reticulum, SP-lyase is responsible for the irreversible degradation of sphingosine-1-phosphate (S1P). S1P is a lipid important in cell proliferation and migration and, once cleaved by SP-lyase, is degraded into fatty acids and phosphoethanolamine. Through its ability to regulate S1P expression, SP-lyase may play a role in stress-induced apoptosis and is thought to exhibit tumor suppressor activity by silencing S1P activity. Current research suggests that SP-lyase may be a useful target for cancer therapy drugs, as increasing its expression during tumorigenesis may help to regulate cell proliferation.

REFERENCES

1. Zhou, J. and Saba, J.D. 1998. Identification of the first mammalian sphingosine phosphate lyase gene and its functional expression in yeast. Biochem. Biophys. Res. Commun. 242: 502-507.
2. Van Veldhoven, P.P., et al. 2000. Human sphingosine-1-phosphate lyase: cDNA cloning, functional expression studies and mapping to chromosome 10q22. Biochim. Biophys. Acta 1487: 128-134.
3. Ikeda, M., et al. 2004. Sphingosine-1-phosphate lyase SPL is an endoplasmic reticulum-resident, integral membrane protein with the pyridoxal 5'-phosphate binding domain exposed to the cytosol. Biochem. Biophys. Res. Commun. 325: 338-343.
4. Oskouian, B., et al. 2005. Regulation of sphingosine-1-phosphate lyase gene expression by members of the GATA family of transcription factors. J. Biol. Chem. 280: 18403-18410.
5. Min, J., et al. 2005. Sphingosine-1-phosphate lyase regulates sensitivity of human cells to select chemotherapy drugs in a p38-dependent manner. Mol. Cancer Res. 3: 287-296.
6. Schwab, S.R., et al. 2005. Lymphocyte sequestration through S1P lyase inhibition and disruption of S1P gradients. Science 309: 1735-1739.

CHROMOSOMAL LOCATION

Genetic locus: SGPL1 (human) mapping to 10q22.1; Sgpl1 (mouse) mapping to 10 B4.

SOURCE

SP-lyase (H-300) is a rabbit polyclonal antibody raised against amino acids 131-430 mapping within a cytoplasmic domain of SP-lyase 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.

RESEARCH USE

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

APPLICATIONS

SP-lyase (H-300) is recommended for detection of SP-lyase 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

SP-lyase (H-300) is also recommended for detection of SP-lyase in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for SP-lyase siRNA (h): sc-72291, SP-lyase siRNA (m): sc-72292, SP-lyase shRNA Plasmid (h): sc-72291-SH, SP-lyase shRNA Plasmid (m): sc-72292-SH, SP-lyase shRNA (h) Lentiviral Particles: sc-72291-V and SP-lyase shRNA (m) Lentiviral Particles: sc-72292-V.

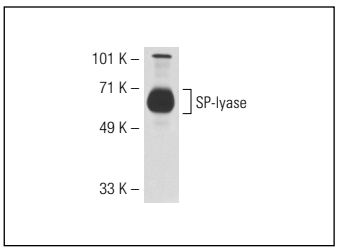
Molecular Weight of SP-lyase: 63 kDa.

Positive Controls: rat liver extract: sc-2395 or HUV-EC-C whole cell lysate: sc-364180.

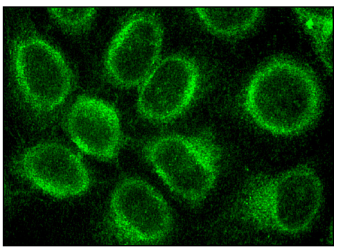
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



SP-lyase (H-300): sc-67368. Western blot analysis of SP-lyase expression in rat liver tissue extract



SP-lyase (H-300): sc-67368. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Siow, D.L., et al. 2010. Intracellular localization of sphingosine kinase 1 alters access to substrate pools but does not affect the degradative fate of sphingosine-1-phosphate. J. Lipid Res. 51: 2546-2559.

STORAGE

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