

SPPL2a (1C7): sc-293375

BACKGROUND

Intramembrane proteolysis is now widely recognized as an important physiological pathway required for reverse signaling and membrane protein degradation. Aspartyl intramembrane cleaving proteases of the GXGD-type play an important regulatory role in health and disease. Signal peptide peptidase (SPP) and SPP-like (SPPL) peptidases belong to the family of GXGD-type aspartyl proteases. SPPL2a (signal peptide peptidase-like 2a), also known as IMP3 (intramembrane protease 3) or PSL2 (presenilin-like protein 2), is a 520 amino acid multi-pass membrane protein that contains one protease associated domain. SPPL2a functions as an intramembrane protease and may be involved in the processing of Fas-L, a type II transmembrane protein belonging to the tumor necrosis factor family.

REFERENCES

- Friedmann, E., et al. 2004. Consensus analysis of signal peptide peptidase and homologous human aspartic proteases reveals opposite topology of catalytic domains compared with presenilins. *J. Biol. Chem.* 279: 50790-50798.
- Krawitz, P., et al. 2005. Differential localization and identification of a critical aspartate suggest non-redundant proteolytic functions of the presenilin homologues SPPL2b and SPPL3. *J. Biol. Chem.* 280: 39515-39523.
- Friedmann, E., et al. 2006. SPPL2a and SPPL2b promote intramembrane proteolysis of TNF α in activated dendritic cells to trigger IL-12 production. *Nat. Cell Biol.* 8: 843-848.
- Kirkin, V., et al. 2007. The FAS ligand intracellular domain is released by ADAM10 and SPPL2a cleavage in T cells. *Cell Death Differ.* 14: 1678-1687.
- Fluhrer, R., et al. 2007. Signal peptide peptidases and γ -secretase: cousins of the same protease family? *Neurodegener. Dis.* 4: 112-116.
- Martin, L., et al. 2008. Regulated intramembrane proteolysis of Bri2 (Itn2b) by ADAM10 and SPPL2a/SPPL2b. *J. Biol. Chem.* 283: 1644-1652.
- Martin, L., et al. 2009. Substrate requirements for SPPL2b-dependent regulated intramembrane proteolysis. *J. Biol. Chem.* 284: 5662-5670.

CHROMOSOMAL LOCATION

Genetic locus: SPPL2A (human) mapping to 15q21.2; Sppl2a (mouse) mapping to 2 F1.

SOURCE

SPPL2a (1C7) is a mouse monoclonal antibody raised against amino acids 31-129 of SPPL2a of human origin.

PRODUCT

Each vial contains 100 μ g IgG $_1$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

Store at 4 $^{\circ}$ C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

SPPL2a (1C7) is recommended for detection of SPPL2a of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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 SPPL2a siRNA (h): sc-76570, SPPL2a siRNA (m): sc-76571, SPPL2a shRNA Plasmid (h): sc-76570-SH, SPPL2a shRNA Plasmid (m): sc-76571-SH, SPPL2a shRNA (h) Lentiviral Particles: sc-76570-V and SPPL2a shRNA (m) Lentiviral Particles: sc-76571-V.

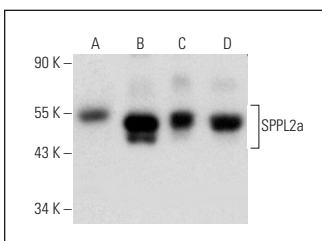
Molecular Weight of SPPL2a: 58 kDa.

Positive Controls: mouse colon extract: sc-364238, mouse large intestine extract: sc-395044 or rat adrenal gland extract: sc-364802.

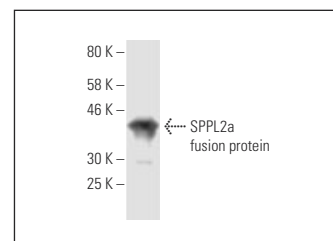
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz MarkerTM 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



SPPL2a (1C7): sc-293375. Western blot analysis of SPPL2a expression in HuT 78 whole cell lysate (A) and mouse colon (B), mouse large intestine (C) and rat adrenal gland (D) tissue extracts.



SPPL2a (1C7): sc-293375. Western blot analysis of human recombinant SPPL2a fusion protein.

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.