SANTA CRUZ BIOTECHNOLOGY, INC.

pICln (D-1): sc-271454

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The formation of the spliceosome includes the assembly of Sm proteins in an ordered manner onto snRNAs. This process is mediated by the survival of motor neuron (SMN) protein, and is enhanced by modification of specific arginine residues in the Sm proteins to symmetrical dimethylarginines (sDMAs). sDMA modification of Sm proteins is catalyzed by the methylosome, a complex comprised of the type II methyltransferase PRMT5 (also designated Jak-binding protein 1, JBP1), pICln and two novel factors. PRMT5 binds the Sm proteins via their arginine- and glycine-rich (RG) domains, while pICln binds the Sm domains. pICln also acts as an inhibitor of SnRNP assembly by preventing specific interactions between Sm proteins required for the formation of the Sm core. pICln is a highly conserved, ubiquitously expressed protein that localizes primarily to the cytoplasm, and may play a role as a swelling-activated anion channel or a channel regulator in addition to its function in the methylosome. The gene encoding human pICln maps to chromosome 11q14.1.

REFERENCES

1. Schwartz, R.S., et al. 1997. Molecular cloning and expression of a chloride channel-associated protein pICln in human young red blood cells: association with Actin. Biochem. J. 327: 609-616.
2. Emma, F., et al. 1998. Characterization of pI(Cln) binding proteins: identification of p17 and assessment of the role of acidic domains in mediating protein-protein interactions. Biochim. Biophys. Acta 1404: 321-328.
3. Li, C., et al. 1998. Recombinant pICln forms highly cation-selective channels when reconstituted into artificial and biological membranes. J. Gen. Physiol. 112: 727-736.
4. Pu, W.T., et al. 2000. ICln is essential for cellular and early embryonic viability. J. Biol. Chem. 275: 12363-12366.
5. Meister, G., et al. 2001. Methylation of Sm proteins by a complex containing PRMT5 and the putative U snRNP assembly factor pICln. Curr. Biol. 11: 1990-1994.
6. Friesen, W.J., et al. 2001. The methylosome, a 20S complex containing JBP1 and pICln, produces dimethylarginine-modified Sm proteins. Mol. Cell. Biol. 21: 8289-8300.

CHROMOSOMAL LOCATION

Genetic locus: CLNS1A (human) mapping to 11q14.1.

SOURCE

pICln (D-1) is a mouse monoclonal antibody raised against amino acids 1-237 representing full length PICln of human 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.

PROTOCOLS

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

APPLICATIONS

pICln (D-1) is recommended for detection of pICln of human 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).

Suitable for use as control antibody for pICln siRNA (h): sc-42594, pICln shRNA Plasmid (h): sc-42594-SH and pICln shRNA (h) Lentiviral Particles: sc-42594-V.

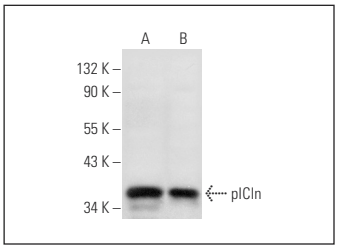
Molecular Weight of pICln: 39 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, HeLa whole cell lysate: sc-2200 or HL-60 whole cell lysate: sc-2209.

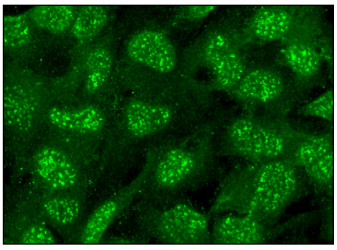
RECOMMENDED SUPPORT REAGENTS

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



pICln (D-1): sc-271454. Western blot analysis of pICln expression in HL-60 (**A**) and HeLa (**B**) whole cell lysates.



pICln (D-1): sc-271454. Immunofluorescence staining of formalin-fixed Hep G2 cells showing nuclear and cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Mulvaney, K.M., et al. 2021. Molecular basis for substrate recruitment to the PRMT5 methylosome. Mol. Cell 81: 3481-3495.e7.

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.