SANTA CRUZ BIOTECHNOLOGY, INC.

PI31 (S-20): sc-85824

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Proteasomes are the catalytic sites of intracellular protein degradation via proteolysis. The most common form of proteasome, the 26S proteasome, is composed of a cylindrical-shaped 20S core particle accompanied by two 19S regulatory subunits. PI31 (Proteasome inhibitor PI31 subunit) is a 271 amino acid protein that is a potent inhibitor of proteasome activity. PI31 is a proline-rich protein, particularly within its C-terminal domain, where nearly one-quarter of the amino acids are proline. Working within the ubiquitin-dependent pathway, PI31 inhibits the hydrolysis of protein and peptide substrates by the 20S proteasome and also inhibits proteasome activation by PA700 and PA28. PI31 functions as a monomer and localizes to the nuclear envelope and endoplasmic reticulum membrane.

REFERENCES

1. Zaiss, D.M., et al. 1999. The proteasome inhibitor PI31 competes with PA28 for binding to 20S proteasomes. FEBS Lett. 457: 333-338.
2. McCutchen-Maloney, S.L., et al. 2000. cDNA cloning, expression, and functional characterization of PI31, a proline-rich inhibitor of the proteasome. J. Biol. Chem. 275: 18557-18565.
3. Zaiss, D.M., et al. 2002. PI31 is a modulator of proteasome formation and antigen processing. Proc. Natl. Acad. Sci. USA 99: 14344-14349.
4. Dahlmann, B. 2005. Proteasomes. Essays Biochem. 41: 31-48.
5. Gharbi, S.I., et al. 2007. Exploring the specificity of the PI3K family inhibitor LY294002. Biochem. J. 404: 15-21.
6. Kuznetsova, E.B., et al. 2007. Novel methylation and expression markers associated with breast cancer. Mol. Biol. 41: 624-633.
7. Kirk, R., et al. 2008. Structure of a conserved dimerization domain within the F-box protein Fbxo7 and the PI31 proteasome inhibitor. J. Biol. Chem. 283: 22325-22335.
8. Cui, Y., et al. 2008. Proteomic analysis of testis biopsies in men treated with injectable testosterone undecanoate alone or in combination with oral levonorgestrel as potential male contraceptive. J. Proteome Res. 7: 3984-3993.

CHROMOSOMAL LOCATION

Genetic locus: PSMF1 (human) mapping to 20p13.

SOURCE

PI31 (S-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of PI31 of human origin.

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.

PRODUCT

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

Blocking peptide available for competition studies, sc-85824 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

PI31 (S-20) is recommended for detection of PI31 of human and rat 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).

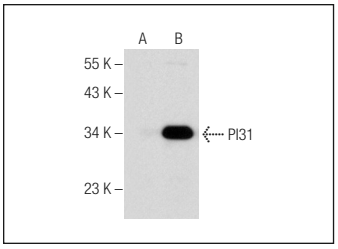
PI31 (S-20) is also recommended for detection of PI31 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for PI31 siRNA (h): sc-76129, PI31 shRNA Plasmid (h): sc-76129-SH and PI31 shRNA (h) Lentiviral Particles: sc-76129-V.

Molecular Weight of PI31: 31 kDa.

Positive Controls: PI31 (h): 293T Lysate: sc-373110.

DATA



PI31 (S-20): sc-85824. Western blot analysis of PI31 expression in non-transfected: sc-117752 (**A**) and human PI31 transfected: sc-373110 (**B**) 293T whole cell lysates.

RESEARCH USE

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