SANTA CRUZ BIOTECHNOLOGY, INC.

LMP7 (56-T): sc-100284

BACKGROUND

The eukaryotic multi-catalytic proteinase complex, otherwise known as the proteasome, is present in both the nucleus and cytoplasm of cells and contains at least 15 nonidentical subunits, which form a highly ordered ring-shaped structure. The proteasome is involved in an ATP/ubiquitin-dependent proteolytic pathway and expresses at least five distinct proteolytic activities, including the cleavage of peptides after branched-chain amino acids or bulky hydrophobic amino acids. Two components of the proteasome are the low molecular mass proteins LMP2 and LMP7, which are thought to connect the proteasome to the MHC class I antigen-processing pathway. Upon stimulation with IFN-γ, LMP2 and LMP7 displace housekeeping subunits in the proteasome and activate cytotoxic T cells (CTLs). LMP2 and LMP7 are produced as precursor proteins, which are processed to subunits that have the ability to complex with the proteasome. LMP2 is expressed as two alternatively spliced forms, LMP2.l and LMP2.s, in lymphoblastoid cell lines and in fibroblasts after IFN-γ stimulation. LMP7 is also expressed as two forms, LMP7-E1 and E2, in several tissues.

CHROMOSOMAL LOCATION

Genetic locus: PSMB8 (human) mapping to 6p21.32.

SOURCE

LMP7 (56-T) is a mouse monoclonal antibody raised against recombinant LMP7 of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

LMP7 (56-T) is recommended for detection of LMP7A and LMP7B of 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), immunohistochemistry (including paraffin-embedded sections) (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 LMP7 siRNA (h): sc-35822, LMP7 shRNA Plasmid (h): sc-35822-SH and LMP7 shRNA (h) Lentiviral Particles: sc-35822-V.

Molecular Weight of mature LMP7: 23 kDa.

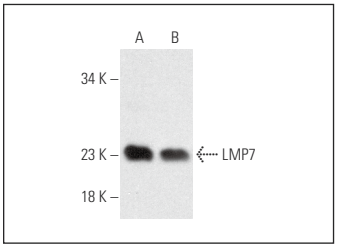
Molecular Weight of LMP7 precursor: 30 kDa.

Positive Controls: MOLT-4 cell lysate: sc-2233, HuT 78 whole cell lysate: sc-2208 or CCRF-CEM cell lysate: sc-2225.

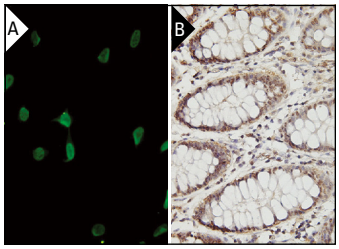
RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



LMP7 (56-T): sc-100284. Western blot analysis of LMP7 expression in HuT 78 (**A**) and MOLT-4 (**B**) whole cell lysates.



LMP7 (56-T): sc-100284. Immunofluorescence staining of paraformaldehyde-fixed HeLa cells showing nuclear localization (**A**). Immunoperoxidase staining of formalin-fixed, paraffin-embedded human colon tissue showing nuclear and cytoplasmic localization (**B**).

SELECT PRODUCT CITATIONS

1. Ding, Q. and Zhu, H. 2018. Upregulation of PSMB8 and cathepsins in the human brains of dementia with Lewy bodies. Neurosci. Lett. 678: 131-137.
2. Kondakova, I., et al. 2025. Association of proteasome activity and pool heterogeneity with markers determining the molecular subtypes of breast cancer. Cancers 17: 159.

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.