

LMP7 (D-12): sc-365698

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.

REFERENCES

1. Fruh, K., et al. 1992. Alternative exon usage and processing of the major histocompatibility complex-encoded proteasome subunits. *J. Biol. Chem.* 267: 22131-22140.
2. Glynn, R., et al. 1993. The major histocompatibility complex-encoded proteasome component LMP7: alternative first exons and post-translational processing. *Eur. J. Immunol.* 23: 860-866.
3. Cardozo, C. 1993. Catalytic components of the bovine pituitary multicatalytic proteinase complex (proteasome). *Enzyme Protein* 47: 296-305.
4. Frenzel, S., et al. 1993. The major-histocompatibility-complex-encoded β -type proteasome subunits LMP2 and LMP7. Evidence that LMP2 and LMP7 are synthesized as proproteins and that cellular levels of both mRNA and LMP-containing 20S proteasomes are differentially regulated. *Eur. J. Biochem.* 216: 119-126.
5. Figueiredo-Pereira, M.E., et al. 1994. Dissociation and reassociation of the bovine pituitary multicatalytic proteinase complex. *J. Biol. Chem.* 269: 621-666.

CHROMOSOMAL LOCATION

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

SOURCE

LMP7 (D-12) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 249-272 at the C-terminus of LMP7 of human origin.

PRODUCT

Each vial contains 200 μ g IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-365698 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

LMP7 (D-12) is recommended for detection of LMP7A and LMP7B of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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).

LMP7 (D-12) is also recommended for detection of LMP7A and LMP7B in additional species, including equine and porcine.

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.

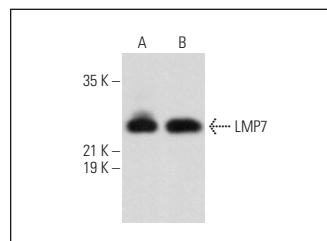
Molecular Weight of LMP7 precursor: 30 kDa.

Positive Controls: U266 whole cell lysate: sc-364800, HuT 78 whole cell lysate: sc-2208 or CCRF-CEM cell lysate: sc-2225.

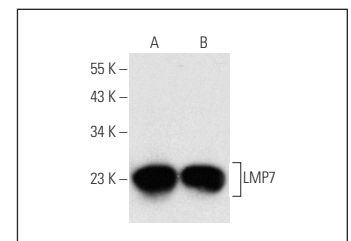
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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



LMP7 (D-12): sc-365698. Western blot analysis of LMP7 expression in HEL 92.1.7 (A) and U266 (B) whole cell lysates.



LMP7 (D-12): sc-365698. Western blot analysis of LMP7 expression in CCRF-CEM (A) and HuT 78 (B) whole cell lysates.

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.