

LMP7 (K-15): sc-17073

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. Glynne, 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.

CHROMOSOMAL LOCATION

Genetic locus: PSMB8 (human) mapping to 6p21.32; Psmb8 (mouse) mapping to 17 B1.

SOURCE

LMP7 (K-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of LMP7 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-17073 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

LMP7 (K-15) is recommended for detection of LMP7A and LMP7B of human and, to a lesser extent, mouse and rat 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)], 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 (K-15) is also recommended for detection of LMP7A and LMP7B in additional species, including equine, bovine and porcine.

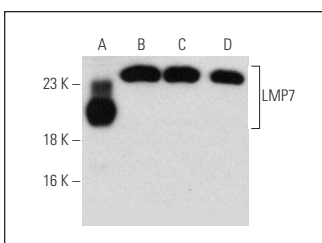
Molecular Weight of LMP7: 23/30 kDa.

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

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



LMP7 (K-15): sc-17073. Western blot analysis of human recombinant LMP7 fusion protein (A) and CCRF-CEM (B), HuT 78 (C) and MOLT-4 (D) 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.

MONOS
Satisfaction
Guaranteed

Try **LMP7 (A-12): sc-365699** or **LMP7 (D-2): sc-374089**, our highly recommended monoclonal alternatives to LMP7 (K-15).