

# LMP2 (B-1): sc-373689

## BACKGROUND

The eukaryotic multicatalytic 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- $\gamma$ , 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.I and LMP2.s, in lymphoblastoid cell lines and in fibroblasts after IFN- $\gamma$  stimulation. LMP7 is also expressed as two forms, LMP7-E1 and E2, in several tissues.

## CHROMOSOMAL LOCATION

Genetic locus: PSMB9 (human) mapping to 6p21.32; Psmb9 (mouse) mapping to 17 B1.

## SOURCE

LMP2 (B-1) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 193-219 at the C-terminus of LMP2 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG $\kappa$  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-373689 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## APPLICATIONS

LMP2 (B-1) is recommended for detection of LMP2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ 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).

LMP2 (B-1) is also recommended for detection of LMP2 in additional species, including equine and porcine.

Suitable for use as control antibody for LMP2 siRNA (h): sc-35820, LMP2 siRNA (m): sc-35821, LMP2 shRNA Plasmid (h): sc-35820-SH, LMP2 shRNA Plasmid (m): sc-35821-SH, LMP2 shRNA (h) Lentiviral Particles: sc-35820-V and LMP2 shRNA (m) Lentiviral Particles: sc-35821-V.

Molecular Weight of LMP2 precursor: 23 kDa.

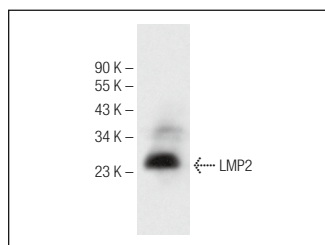
Molecular Weight of mature LMP2: 21 kDa.

Positive Controls: Raji whole cell lysate, Daudi cell lysate: sc-2415 or HL-60 whole cell lysate: sc-2209.

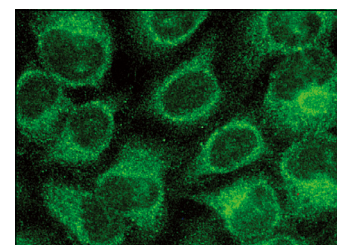
## RECOMMENDED SUPPORT REAGENTS

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



LMP2 (B-1): sc-373689. Western blot analysis of LMP2 expression in Raji whole cell lysate.



LMP2 (B-1): sc-373689. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

## SELECT PRODUCT CITATIONS

- Beilstein, F., et al. 2015. Characterization of the interaction between the matrix protein of vesicular stomatitis virus and the immunoproteasome subunit LMP2. *J. Virol.* 89: 11019-11029.
- Sethumadhavan, S., et al. 2017. Hypoxia and hypoxia-inducible factor (HIF) downregulate antigen-presenting MHC class I molecules limiting tumor cell recognition by T cells. *PLoS ONE* 12: e0187314.
- Teixeira, V.O.N., et al. 2023. The role of proteasome in muscle wasting of experimental arthritis. *Adv. Rheumatol.* 63: 14.

## 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.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.