SANTA CRUZ BIOTECHNOLOGY, INC.

LMP2 (G-3): sc-373996

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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-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.

REFERENCE

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.

CHROMOSOMAL LOCATION

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

SOURCE

LMP2 (G-3) 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 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

LMP2 (G-3) is available conjugated to agarose (sc-373996 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-373996 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-373996 PE), fluorescein (sc-373996 FITC), Alexa Fluor® 488 (sc-373996 AF488), Alexa Fluor® 546 (sc-373996 AF546), Alexa Fluor® 594 (sc-373996 AF594) or Alexa Fluor® 647 (sc-373996 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-373996 AF680) or Alexa Fluor® 790 (sc-373996 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-373996 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

LMP2 (G-3) 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 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).

LMP2 (G-3) is also recommended for detection of LMP2 in additional species, including equine and porcine.

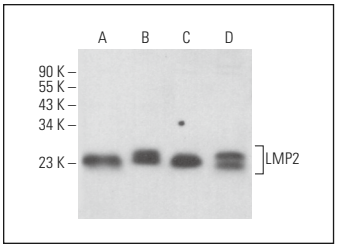
Suitable for use as control antibody for LMP2 siRNA (h): sc-35820, LMP2 siRNA (m): sc-35821, LMP2 shRNA Plasmid (h): sc-35820-SH, LMP2 shRNA Plasmid (m): sc-35821-SH, LMP2 shRNA (h) Lentiviral Particles: sc-35820-V and LMP2 shRNA (m) Lentiviral Particles: sc-35821-V.

Molecular Weight of LMP2 precursor: 23 kDa.

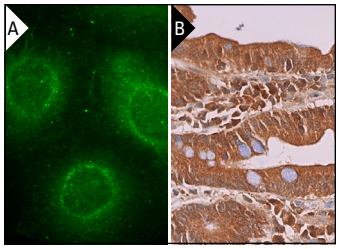
Molecular Weight of mature LMP2: 21 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, Raji whole cell lysate: sc-364236 or THP-1 cell lysate: sc-2238

DATA



LMP2 (G-3): sc-373996. Western blot analysis of LMP2 expression in Raji (**A**), Jurkat (**B**), THP-1 (**C**) and RAW 264.7 (**D**) whole cell lysates.



LMP2 (G-3): sc-373996. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear and cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human small intestine tissue showing nuclear and cytoplasmic staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Lim, S., et al. 2021. mTORC1-induced retinal progenitor cell overproliferation leads to accelerated mitotic aging and degeneration of descendent Müller glia. Elife 10: e70079.
2. Miyauchi, S., et al. 2023. Human papillomavirus E5 suppresses immunity via inhibition of the immunoproteasome and STING pathway. Cell Rep. 42: 112508.

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.