BACKGROUND

The eukaryotic multi-catalytic protease complex, otherwise known as the proteasome, is present in both the nucleus and cytoplasm of cells and contains at least 15 non-identical 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; Psmb8 (mouse) mapping to 17 B1.

SOURCE

LMP7 (A-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 µg IgG1 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-365699 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

LMP7 (A-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 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). LMP7 (A-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: HEL 92.1.7 cell lysate: sc-2270, MOLT-4 cell lysate: sc-2233 or U266 whole cell lysate: sc-364800.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:

DATA

SELECT PRODUCT CITATIONS


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 for detailed protocols and support products.