

#13267 Store at -20C

PSMB6 (E1K9O) Rabbit mAb**Cell Signaling**
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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
WB	H M R Mk	Endogenous	22	Rabbit IgG	#P28072	5694

Product Usage Information**Application**

Western Blotting

Dilution

1:1000

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

Specificity / Sensitivity

PSMB6 (E1K9O) Rabbit mAb recognizes endogenous levels of total PSMB6 protein. Based upon sequence alignment, this antibody is predicted to react with precursor and mature forms of PSMB6. This antibody does not cross-react with PSMB9 but does cross-react with a 60 kDa protein of unknown origin in extracts derived from some cell lines.

Species predicted to react based on 100% sequence homology:

Zebrafish, Bovine, Dog, Pig, Horse

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Lys67 of human PSMB6 protein.

Background

The 26S proteasome is a highly abundant proteolytic complex involved in the degradation of ubiquitinated substrate proteins. It consists largely of two sub-complexes, the 20S catalytic core particle (CP) and the 19S/PA700 regulatory particle (RP) that can cap either end of the CP. The CP consists of two stacked heteroheptameric β -rings (β_{1-7}) that contain three catalytic β -subunits and are flanked on either side by two heteroheptameric α -rings (α_{1-7}). The RP includes a base and a lid, each having multiple subunits. The base, in part, is composed of a heterohexameric ring of ATPase subunits belonging to the AAA (ATPases Associated with diverse cellular Activities) family. The ATPase subunits function to unfold the substrate and open the gate formed by the α -subunits, thus exposing the unfolded substrate to the catalytic β -subunits. The lid consists of ubiquitin receptors and DUBs that function in recruitment of ubiquitinated substrates and modification of ubiquitin chain topology (1,2). Other modulators of proteasome activity, such as PA28/11S REG, can also bind to the end of the 20S CP and activate it (1,2).

The core particle exhibits three distinct enzymatic activities, each catalyzed by a separate protein subunit. The constitutively expressed PSMB5, PSMB7, and PSMB6 subunits provide chymotrypsin-like, trypsin-like, and caspase-like activities, respectively. These catalytic subunits belong to the amino-terminal nucleophile (Ntn) hydrolase family and are characterized by a single-residue active site. The catalytic β -subunits are synthesized with amino-terminal propeptides, which are removed at the final step of proteasome biogenesis to expose the catalytic threonine residues (3). In immune cells involved in antigen presentation, the constitutively expressed PSMB6, PSMB7, and PSMB5 subunits are replaced by three highly homologous, induced β -subunits to form the immunoproteasome (4,5). PSMB6 is downregulated at the protein level by IFN- γ and replaced by PSMB9 in order to remodel the proteolytic specificity of the proteasome for more appropriate immunological processing of endogenous antigens (6-8).

Background References

1. Finley, D. (2009) *Annu Rev Biochem* 78, 477-513.
2. Lee, M.J. et al. (2011) *Mol Cell Proteomics* 10, R110.003871.
3. Murata, S. et al. (2009) *Nat Rev Mol Cell Biol* 10, 104-15.
4. Boes, B. et al. (1994) *J Exp Med* 179, 901-9.
5. Cardozo, C. and Kohanski, R.A. (1998) *J Biol Chem* 273, 16764-70.
6. Akiyama, K. et al. (1994) *Science* 265, 1231-4.
7. Akiyama, K. et al. (1994) *FEBS Lett* 343, 85-8.
8. Gaczynska, M. et al. (1996) *J Biol Chem* 271, 17275-80.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

WB: Western Blotting

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster
X: Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse
GP: Guinea Pig **Rab:** rabbit **All:** all species expected

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