Revision 1

Store at -20C

#14141

PSMD2 Antibody

Cell Signaling TECHNOLOGY®

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W	H M R Mk	Endogenous	97	Rabbit	#Q13200	5708

Product Usage Information

Application	Dilution
Western Blotting	1:1000

Storage

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

Specificity/Sensitivity

PSMD2 Antibody recognizes endogenous levels of total PSMD2 protein.

Species predicted to react based on 100% sequence homology

Hamster, Xenopus, Zebrafish, Bovine

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Lys350 of human PSMD2 protein. Antibodies are purified by protein A and peptide affinity chromatography.

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).
Regulatory particle non-ATPase 1 (RPN1, PSMD2) is a subunit of the 19S/PA700 regulatory particle base subcomplex. The PSMD2 protein acts as part of the scaffold for assembly of the 19S/PA700 RP base subcomplex (3). Research studies demonstrate that PSMD2 binds the intracellular domain of type I TNF receptor, indicating that the 26S proteasome may play a role in the TNF signaling pathway (4,5). PSMD2 expression correlates with poor prognosis in lung cancer patients, and induced inhibition of PSMD2 results in decreased proteasome activity and increased apoptosis in lung cancer cells (6).

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. Rosenzweig, R. et al. (2008) *Nat Struct Mol Biol* 15, 573-80.
4. Tsurumi, C. et al. (1996) *Eur J Biochem* 239, 912-21.
5. Dunbar, J.D. et al. (1997) *J Immunol* 158, 4252-9.
6. Matsuyama, Y. et al. (2011) *Mol Carcinog* 50, 301-9.

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 nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat **Mk:** Monkey

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