Revision 1

Store at -20C

#2457

PSMA5 (K231) Antibody

Cell Signaling TECHNOLOGY®

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source:	UniProt ID:	Entrez-Gene Id:
WB, IF-IC	H M R Mk	Endogenous	27	Rabbit	#P28066	5686

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunofluorescence (Immunocytochemistry)	1:50

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

PSMA5 (K231) Antibody detects endogenous levels of total PSMA5 protein.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Lys231 of human PSMA5 protein. Antibodies are purified by protein A and peptide affinity chromatography.

Background

The 20S proteasome is the major proteolytic enzyme complex involved in intracellular protein degradation. It consists of four stacked rings, each with seven distinct subunits. The two outer layers are identical rings composed of α subunits (called PSMAs), and the two inner layers are identical rings composed of β subunits. While the catalytic sites are located on the β rings (1-3), the α subunits are important for assembly and as binding sites for regulatory proteins (4). Seven different α and ten different β proteasome genes have been identified in mammals (5). PA700, PA28, and PA200 are three major protein complexes that function as activators of the 20S proteasome. PA700 binds polyubiquitin with high affinity and associates with the 20S proteasome to form the 26S proteasome, which preferentially degrades polyubiquitinated proteins (1-3). The proteasome has a broad substrate spectrum that includes cell cycle regulators, signaling molecules, tumor suppressors, and transcription factors. By controlling the degradation of these intracellular proteins, the proteasome functions in cell cycle regulation, cancer development, immune responses, protein folding, and disease progression (6-9).

Background References

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2. Pickart, C.M. and Cohen, R.E. (2004) *Nat. Rev. Mol. Cell Biol.* 5, 177-87.
3. Nandi, D. et al. (2006) *J. Biosci.* 31, 137-55.
4. Lupas, A. et al. (1993) *Enzyme Protein* 47, 252-73.
5. Monaco, J.J. and Nandi, D. (1995) *Annu. Rev. Genet.* 29, 729-54.
6. Murray, A.W. (2004) *Cell* 116, 221-34.
7. Ciechanover, A. (2006) *Proc. Am. Thorac. Soc.* 3, 21-31.
8. Wang, J. and Maldonado, M.A. (2006) *Cell. Mol. Immunol.* 3, 255-61.
9. Rubinsztein, D.C. (2006) *Nature* 443, 780-6.

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 **IF-IC:** Immunofluorescence (Immunocytochemistry)

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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