

#12446 Store at -20°C

**PSMA3 (D4Y9O) 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, IP	H M R Mk	Endogenous	28	Rabbit IgG	#P25788	5684

**Product Usage Information****Application**Western Blotting  
Immunoprecipitation**Dilution**1:1000  
1:50**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**PSMA3 (D4Y9O) Rabbit mAb recognizes endogenous levels of total PSMA3 protein. This antibody does not cross-react with other  $\alpha$  subunits of the 20S proteasome. This antibody cross-reacts with a 140 kDa protein of unknown identity in lysates from certain cell lines.**Species predicted to react based on 100% sequence homology:**

Dog, Pig, Horse

**Source / Purification**

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Arg100 of human PSMA3 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  $\beta$ -rings ( $\beta_{1-7}$ ) that contain three catalytic  $\beta$ -subunits and are flanked on either side by two heteroheptameric  $\alpha$ -rings ( $\alpha_{1-7}$ ). 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  $\alpha$ -subunits, thus exposing the unfolded substrate to the catalytic  $\beta$ -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).

PSMA3 (HC8/ $\alpha 7$ ) is an  $\alpha$  subunit of the 20S proteasome. PSMA3 lacks any known proteolytic activity but may have an important role in the initiation of ring formation and 20S proteasome assembly (3). Research studies have demonstrated that PSMA3 serves as a receptor within the proteasome, recruiting substrates that are destined for degradation in a ubiquitination-independent manner (4,5).

**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. Gerards, W.L. et al. (1998) *J Mol Biol* 275, 113-21.
4. Touitou, R. et al. (2001) *EMBO J* 20, 2367-75.
5. Sdek, P. et al. (2005) *Mol Cell* 20, 699-708.

**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 **IP:** Immunoprecipitation**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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