

**#4197** Store at -20C

## PSMD14 (D18C7) Rabbit mAb


**Cell Signaling**  
TECHNOLOGY®

**Orders:** 877-616-CELL (2355)  
orders@cellsignal.com

**Support:** 877-678-TECH (8324)

**Web:** info@cellsignal.com  
cellsignal.com

**3 Trask Lane | Danvers | Massachusetts | 01923 | USA**
**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	34	Rabbit IgG	#O00487	10213

<b>Product Usage Information</b>	<b>Application</b> Western Blotting Immunoprecipitation	<b>Dilution</b> 1:1000 1:100
<b>Storage</b>	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.	
<b>Specificity / Sensitivity</b>	PSMD14 (D18C7) Rabbit mAb recognizes endogenous levels of total PSMD14 protein. This antibody does not cross-react with COPS5/JAB1.	
<b>Species predicted to react based on 100% sequence homology:</b>	Xenopus, Dog	
<b>Source / Purification</b>	Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues near the amino terminus of human PSMD14 protein.	
<b>Background</b>	<p>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 <math>\beta</math>-rings (<math>\beta_{1-7}</math>) that contain three catalytic <math>\beta</math>-subunits and are flanked on either side by two heteroheptameric <math>\alpha</math>-rings (<math>\alpha_{1-7}</math>). 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 <math>\alpha</math>-subunits, thus exposing the unfolded substrate to the catalytic <math>\beta</math>-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).</p> <p>Of the subunits that comprise the 19S RP lid, only PSMD14 (POH1) has a known function. PSMD14 is classified as a metalloenzyme DUB and its activity has been shown to be critical for proteasome function in both yeast and humans (3-6). Indeed, PSMD14 harbors an Mpr1-Pad1-N-terminal (MPN) domain with an embedded, highly conserved signature motif for metal-dependent isopeptidases that has been dubbed JAMM, from Jab1/Pad1/MPN domain metalloenzyme. The JAMM motif of PSMD14 consists of a pattern of four charged amino acids: a glutamate residue followed by two histidines and an aspartate (EX<sub>n</sub>HXHX<sub>10</sub>D). It has been proposed that the histidine residues, in concert with the aspartate, bind to a zinc ion that, together with the preceding glutamate, forms the catalytic site of PSMD14 (3,4). PSMD14 is thought to cleave ubiquitin chains with proximal specificity relative to the substrate, thus removing whole ubiquitin chains en bloc (3). Recent studies have implicated PSMD14 as an important regulator of ErbB2 (7) and c-Jun (8) protein levels.</p>	
<b>Background References</b>	<ol style="list-style-type: none"> <li>1. Finley, D. (2009) <i>Annu Rev Biochem</i> 78, 477-513.</li> <li>2. Lee, M.J. et al. (2011) <i>Mol Cell Proteomics</i> 10, R110.003871.</li> <li>3. Verma, R. et al. (2002) <i>Science</i> 298, 611-5.</li> <li>4. Yao, T. and Cohen, R.E. (2002) <i>Nature</i> 419, 403-7.</li> <li>5. Maytal-Kivity, V. et al. (2002) <i>BMC Biochem</i> 3, 28.</li> <li>6. Gallery, M. et al. (2007) <i>Mol Cancer Ther</i> 6, 262-8.</li> <li>7. Liu, H. et al. (2009) <i>PLoS One</i> 4, e5544.</li> <li>8. Nabhan, J.F. and Ribeiro, P. (2006) <i>J Biol Chem</i> 281, 16099-107.</li> </ol>	

**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

**Trademarks and Patents**

Cell Signaling Technology is a trademark of Cell Signaling Technology, Inc.

All other trademarks are the property of their respective owners. Visit [cellsignal.com/trademarks](https://cellsignal.com/trademarks) for more information.

**Limited Uses**

Except as otherwise expressly agreed in a writing signed by a legally authorized representative of CST, the following terms apply to Products provided by CST, its affiliates or its distributors. Any Customer's terms and conditions that are in addition to, or different from, those contained herein, unless separately accepted in writing by a legally authorized representative of CST, are rejected and are of no force or effect.

Products are labeled with For Research Use Only or a similar labeling statement and have not been approved, cleared, or licensed by the FDA or other regulatory foreign or domestic entity, for any purpose. Customer shall not use any Product for any diagnostic or therapeutic purpose, or otherwise in any manner that conflicts with its labeling statement. Products sold or licensed by CST are provided for Customer as the end-user and solely for research and development uses. Any use of Product for diagnostic, prophylactic or therapeutic purposes, or any purchase of Product for resale (alone or as a component) or other commercial purpose, requires a separate license from CST. Customer shall (a) not sell, license, loan, donate or otherwise transfer or make available any Product to any third party, whether alone or in combination with other materials, or use the Products to manufacture any commercial products, (b) not copy, modify, reverse engineer, decompile, disassemble or otherwise attempt to discover the underlying structure or technology of the Products, or use the Products for the purpose of developing any products or services that would compete with CST products or services, (c) not alter or remove from the Products any trademarks, trade names, logos, patent or copyright notices or markings, (d) use the Products solely in accordance with CST Product Terms of Sale and any applicable documentation, and (e) comply with any license, terms of service or similar agreement with respect to any third party products or services used by Customer in connection with the Products.