

#14395 Store at -20C

PSMC2 (D5T1T) 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	H M R Mk	Endogenous	47	Rabbit IgG	#P35998	5701

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. <i>Do not aliquot the antibody.</i>	
Specificity / Sensitivity	PSMC2 (D5T1T) Rabbit mAb recognizes endogenous levels of total PSMC2 protein. This antibody does not cross-react with other AAA-ATPase subunits of the 19S proteasome regulatory particle.	
Source / Purification	Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues near the amino terminus of human PSMC2 protein.	
Background	<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 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).</p> <p>The base of the eukaryotic proteasome 19S/PA700 RP contains six AAA-ATPase subunits (PSMC1-PSMC6) that bind directly to the 20S CP α-ring. These 19S RP ATPases are thought to assemble into a heterohexameric, pore-like structure that forms part of the substrate translocation channel. Energy derived from ATP hydrolysis by the AAA-ATPases is utilized for substrate unfolding and translocation, which is required for degradation of ubiquitinated folded proteins within the central chamber of the 20S CP formed by β-subunits (3-5). PSMC2 (RPT1, MSS1) is a AAA-ATPase subunit of the 19S/PA700 RP. Research studies have shown that PSMC2 is associated with several components of the basal transcriptional machinery suggesting that PSMC2, in addition to participating in proteasome-dependent degradation of proteins, may also play a role in gene transcription (6). More recently, it has been shown that numerous human cancer cell lines have reduced PSMC2 expression resulting from loss of PSMC2 copy number loss and display a strict threshold requirement for PSMC2 levels in order to sustain a proliferative advantage (7).</p>	
Background References	<ol style="list-style-type: none"> 1. Finley, D. (2009) <i>Annu Rev Biochem</i> 78, 477-513. 2. Lee, M.J. et al. (2011) <i>Mol Cell Proteomics</i> 10, R110.003871. 3. Groll, M. et al. (2000) <i>Nat Struct Biol</i> 7, 1062-7. 4. Braun, B.C. et al. (1999) <i>Nat Cell Biol</i> 1, 221-6. 5. Liu, C.W. et al. (2002) <i>J Biol Chem</i> 277, 26815-20. 6. Yanagi, S. et al. (2000) <i>Biochem Biophys Res Commun</i> 279, 568-73. 7. Nijhawan, D. et al. (2012) <i>Cell</i> 150, 842-54. 	

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

Trademarks and Patents

Cell Signaling Technology is a trademark of Cell Signaling Technology, Inc.
XP is a registered trademark of Cell Signaling Technology, Inc.
All other trademarks are the property of their respective owners. Visit 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.