

#13392 Store at -20°C

PSMC5/TRIP1 Antibody

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:	UniProt ID:	Entrez-Gene Id:
WB	H M R Mk	Endogenous	45	Rabbit	#P62195	5705

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 and 50% glycerol. Store at –20°C. Do not aliquot the antibody.

Specificity / Sensitivity

PSMC5/TRIP1 Antibody recognizes endogenous levels of total PSMC5 (TRIP1) protein. This antibody does not cross-react with other AAA-ATPase subunits of the 19S proteasome regulatory particle.

Species predicted to react based on 100% sequence homology:

D. melanogaster, Zebrafish, Pig

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues near the carboxy terminus of human PSMC5 (TRIP1) 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).

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). Thyroid hormone receptor-interacting protein 1 (PSMC5, TRIP1) is a 19S AAA-ATPase subunit involved in the negative regulation of gene transcription. Recruitment of PSMC5 to liganded VDR (6) and RAR γ 2 (7) facilitates their degradation via the proteasome.

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. Groll, M. et al. (2000) *Nat Struct Biol* 7, 1062-7.
4. Braun, B.C. et al. (1999) *Nat Cell Biol* 1, 221-6.
5. Liu, C.W. et al. (2002) *J Biol Chem* 277, 26815-20.
6. Masuyama, H. and MacDonald, P.N. (1998) *J Cell Biochem* 71, 429-40.
7. Gianni, M. et al. (2002) *EMBO J* 21, 3760-9.

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

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

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