

PRODUCT DATA SHEET



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Product name(s):	Adrm1, rabbit polyclonal antibody				
Product code:	PW9910	Batch number:	Z06194	Expiry date:	12 months from receipt

Product information:

Originally described¹ as an interferon- γ -inducible, heavily glycosylated membrane protein of 110 kDa which regulates cell adhesion², recent studies³ have identified Adrm1 as a novel component of the regulatory ATPase complex (19S) of the 26S proteasome. Contrary to previous studies, it is now demonstrated that Adrm1 is found only as a 42 kDa protein, corresponding to the mass of the non-glycosylated peptide chain, and that it cannot not be induced in HeLa cells with interferon.

Database searches suggest that the budding yeast proteasome subunit Rpn13 may be a distantly related orthologue of Adrm1, although there is only 25% identity in the stretch of aligned residues. The budding yeast orthologue is also much shorter than human Adrm1 and lacks most of the adhesion regulating molecule (ARM) domain situated in the central part of the protein with, so far, no function having been ascribed to the ARM domain. However, among mammals, Adrm1 is phylogenetically well preserved with 97% identity between the human and murine proteins.

Adrm1 is present in approximately stoichiometric in HeLa cells although some cells lack Adrm1 entirely⁴. Rpn13 deficient mutants display no obvious phenotype and, similarly, knock-down of Adrm1 in HeLa cells shows no effect on amount of proteasomes, or on degradation of bulk protein, or accumulation of polyubiquitinated proteins.

It has been demonstrated that Uch37 (one of the three principal deubiquitinating enzymes) binds through Adrm1, which in turn is bound to the S1/Rpn2 subunit of the 19S complex⁵. Adrm1 binds the carboxy-terminal tail of Uch37, a region that is distinct from the UCH catalytic domain, which inhibits Uch37 activity.

Adrm1 appears to be a stable protein and all material in cell extracts is found in proteasomes. Consequently Adrm1 is most likely a subunit, or an associated protein, of the proteasome depending on definition.

~98kDa
~64kDa
~50kDa
~36kDa
~22kDa
~12kDa
~6kDa



Western blot of HeLa S100 cytosol preparation lysate (2 μ g) after SDS-PAGE followed by blotting on to PVDF and probing with PW9910 (dilution 1:1000) with development by ECL.

The polyclonal antibody PW9910 was generated by immunisation of rabbits with human recombinant ADRM1 and is supplied as purified (salt precipitated) immunoglobulin in PBS containing 10mM sodium azide as preservative.

Immunoblotting:

An initial dilution of 1:1000 is recommended.

Species reactivity:

Recognises human and mouse proteins, however, due to sequence conservation species cross-reactivity may be broad.

Storage and use:

Store unopened vial at -20°C until required for use. AVOID REPEATED FREEZE-THAW CYCLES. Aliquot undiluted antibody into smaller volumes (not less than 10 μ L) prior to freezing if appropriate. The use of high quality 'antiserum-grade' plastic or glass vials is recommended. Store diluted antibody at 2-4°C (do not freeze) and use within 1 month. Dilute to working strength with phosphate buffered saline pH 7.2-7.4 and 1% normal goat serum (if a goat anti-rabbit IgG linker antibody is to be used).

References:

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2. Simins, A.B., Weighardt, H., Weidner, K. M., Weidle, U. H., and Holzmann, B. Functional cloning of ARM-1, an adhesion-regulating molecule upregulated in metastatic tumor cells. *Clin.Exp.Metastasis.* **17**, 641-648 (1999)
3. Jorgensen, J.P., Lauridsen, A. M., Kristensen, P., Dissing, K., Johnsen, A. H., Hendil, K. B., and Hartmann-Petersen, R. Adrm1, a Putative Cell Adhesion Regulating Protein, is a Novel Proteasome-associated Factor. *J.Mol.Biol.* **360**, 1043-1052 (2006)
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