PRODUCT DATA SHEET

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Product name(s):	PBA1, rabbit polyclonal antibody				
Catalogue number:	PW0430	**Batch number:**	Temp	**Expiry date:**	12 months from receipt

Product information:

The rabbit polyclonal antiserum was raised to full length *Arabidopsis thaliana* PBA1 protein (accession number Q8LD27). Vial contains a partially purified antiserum preparation without sodium azide.

Application data:

The proteasome is widely recognised as the central enzyme of non-lysosomal protein degradation. It is responsible for intracellular protein turnover and it is also critically involved in many regulatory processes and, in higher eukaryotes, in antigen processing. The 26S proteasome is the key enzyme of the ubiquitin/ATP-dependent pathway of protein degradation. The catalytic core of this unusually large (2000kDa, 450Å in length) complex is formed by the 20S proteasome, a barrel shaped structure shown by electron microscopy to comprise of four rings each containing seven subunits.

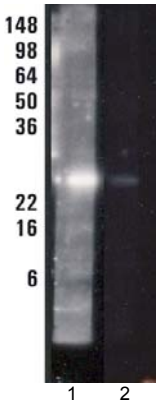
Based on sequence similarity, all fourteen 20S proteasomal subunit sequences may be classified into two groups, α and β, each group having distinct structural and functional roles. The α-subunits comprise the outer rings and the β-subunits the inner rings of the 20S proteasome. Observations of the eukaryotic proteasome and analysis of subunit sequences indicate that each ring contains seven different subunits ($\alpha_7\beta_7\beta_7\alpha_7$) with a member of each sub-family represented in each particle. Each subunit is located in a unique position within the α- or β-rings.[1]

Data:
Subunit PBA1; alternative names: β1, delta, Lmp9, Pre3; Accession number: Q9SEI5; Length: 233 amino acids. Molecular weight: 25151Da.

Immunoblotting[2,3,4]
The serum was characterised by single dimension SDS-PAGE using *Arabidopsis thaliana* cell lysate and purified 26S proteasome. An initial dilution of 1:1000 is recommended, however, optimisation may be required for individual application.

Immunoprecipitation
This antibody has not been characterised for this purpose.

Species reactivity
This antibody has been shown to react with *Arabadopsis thaliana* derived material.



Luminograph of *Arabidopsis thaliana* cell lysate (lane 1) and 26S proteasome (lane 2) after SDS-PAGE followed by blotting onto PVDF and probing with antibody PW0430.

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 10µL) 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:

1. Kurepa, J. and Smalle, J. A. Structure, function and regulation of plant proteasomes. *Biochimie*. (2007)
2. Kurepa, J., Walker, J. M., Smalle, J., Gosink, M. M., Davis, S. J., Durham, T. L., Sung, D. Y., and Vierstra, R. D. The small ubiquitin-like modifier (SUMO) protein modification system in Arabidopsis. Accumulation of SUMO1 and -2 conjugates is increased by stress. *J.Biol.Chem.* **278**, 6862-6872 (2003)
3. Yang, P., Fu, H., Walker, J., Papa, C. M., Smalle, J., Ju, Y. M., and Vierstra, R. D. Purification of the Arabidopsis 26 S proteasome: biochemical and molecular analyses revealed the presence of multiple isoforms. *J.Biol.Chem.* **279**, 6401-6413 (2004)
4. Smalle, J., Kurepa, J., Yang, P., Babiychuk, E., Kushnir, S., Durski, A., and Vierstra, R. D. Cytokinin growth responses in Arabidopsis involve the 26S proteasome subunit RPN12. *Plant Cell*. **14**, 17-32 (2002)