

product **AS06 146**  
**PsbD | D2 protein of PSII**

### product information

<b>background</b>	D2 protein ( <b>PsbD</b> ) forms the reaction core of PSII (Photosystem II) as a heterodimer with the D1 protein (PsbA). PsbD is homologous to the D1 protein, with slightly higher molecular mass of about 39,5 kDa. Accumulation of D2 protein is an important step in the assembly of the PSII reaction centre complex.
<b>immunogen</b>	<u>KLH</u> -conjugated synthetic peptide derived from the C-terminal of known PsbD sequences including <i>Arabidopsis pumila</i> <u>A4QJS8</u> , <i>Hordeum vulgare</i> <u>P11849</u> , <i>Chlamydomonas reinhardtii</i> <u>P06007</u> , <i>Synechococcus</i> sp. PCC 7002 <u>P20898</u>
<b>antibody format</b>	rabbit polyclonal serum lyophilized
<b>quantity</b>	100 µl for reconstitution add 100 µl of sterile water.
<b>storage</b>	store lyophilized/reconstituted at -20 °C; once reconstituted make aliquots to avoid repeated freeze-thaw cycles. Please, remember to spin tubes briefly prior to opening them to avoid any losses that might occur from lyophilized material adhering to the cap or sides of the tubes.
<b>tested applications</b>	western blot (WB)
<b>additional information</b>	Perfect across all full-length PsbD sequences from higher plants, lower plants, cyanobacteria and unicellular algae except: -minor substitutions in some Prochlorococcus & Dinoflagellate sequences. The antibody should still work against these taxa, but it has not been tested yet. This antibody does not detect PsbA protein (D1).

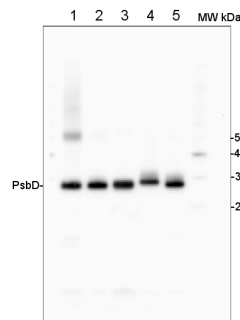
### application information

<b>recommended dilution</b>	1: 5000 with standard ECL (WB)
<b>expected   apparent MW</b>	39.4   28-30 kDa
<b>confirmed reactivity</b>	<i>Arabidopsis thaliana</i> , <i>Hordeum vulgare</i> , <i>Chlamydomonas reinhardtii</i> , <i>Pisum sativum</i> , <i>Phaseolus vulgaris</i> , <i>Synechococcus</i> sp. PCC 7942, <i>Anabaena</i> 7120, <i>Thalassiosira guillardii</i>
<b>predicted reactivity</b>	dicots including: <i>Solanum tuberosum</i> , monocots including: <i>Oryza sativa</i> , <i>Zea mays</i> , trees: <i>Pinus thunbergii</i> , <i>Populus</i>

	<i>trichocarpa</i> , moss: <i>Physcomitrella patens</i> , algae
<b>not reactive in</b>	no confirmed exceptions from predicted reactivity known in the moment
<b>additional information</b>	<p>There is a confirmed cross-reaction with TLA1 protein in <i>Chlamydomonas reinhardtii</i>.</p> <p>For samples with a very low PSII content there might be detection problems independent of the antibody. PSII proteins can vary in level depending upon liquid culture conditions. When the cells are in a stationary phase PSII content can drop to a very low level.</p>
<b>selected references</b>	<p><a href="#">Bock</a> (2012). The plastid genome-encoded Ycf4 protein functions as a non-essential assembly factor for photosystem I in higher plants. <i>Plant Physiol.</i> ahead of print.</p> <p><a href="#">Rudowska</a> et al. (2012). Chloroplast biogenesis - correlation between structure and function. <i>BBA</i>, available on line, March 2012.</p> <p><a href="#">Arellano</a> et al. (2011). Trolox, a water soluble analogue of alpha-tocopherol, photoprotects the surface-exposed regions of the photosystem II reaction centre in vitro. Is this physiologically relevant? <i>Biochemistry</i>, Aug 25.</p>

## application example

**2 µg of total protein** from (1) *Arabidopsis thaliana* leaf extracted with Protein Extraction Buffer, PEB ([AS08 300](#)), (2) *Hordeum vulgare* leaf extracted with PEB, (3) *Chlamydomonas reinhardtii* total cell extracted with PEB, (4) *Synechococcus* sp. 7942 total cell extracted with PEB, (5) *Anabaena* sp. total cell extracted with PEB were separated on **4-12% NuPage** (Invitrogen) **LDS-PAGE** and blotted 1h to **PVDF**. Blots were blocked immediately following transfer in 2% ECL Advance blocking reagent (GE Healthcare) in 20 mM Tris, 137 mM sodium chloride pH 7.6 with 0.1% (v/v) Tween-20 (TBS-T) for 1h at room temperature with agitation. Blots were incubated in the primary antibody at a dilution of 1: 50 000 for 1h at room temperature with agitation. The antibody solution was decanted and the blot was rinsed briefly twice, then washed once for 15 min and 3 times for 5 min in TBS-T at room temperature with agitation. Blots were incubated in secondary antibody (anti-rabbit IgG horse radish peroxidase conjugated, recommended secondary antibody [AS09 602](#)) diluted to 1:50 000 in 2% ECL Advance blocking solution for



1h at room temperature with agitation. The blots were washed as above and developed for 5 min with ECL Advance detection reagent according to the manufacturer's instructions. Images of the blots were obtained using a CCD imager (FluorSMax, Bio-Rad) and Quantity One software (Bio-Rad). Exposure time was 3 seconds.