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This product is **for research use only** (not for diagnostic or therapeutic use) **contact: support@agrisera.com**

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Product no AS06 142-33

Discontinued PsbO | 33 kDa of the oxygen evolving complex (OEC) of PSII (anti-protein)

Product information

Immunogen	Native purified 33 kDa protein from *Spinacia oleracea* UniProt: P12359
Host	Rabbit
Clonality	Polyclonal
Purity	Total IgG. Protein G purified in PBS pH 7.4.
Format	Lyophilized
Quantity	50 µl
Reconstitution	For reconstitution add 50 µl of sterile water
Storage	Store lyophilized/reconstituted at -20°C; once reconstituted make aliquots to avoid repeated freeze-thaw cycles. Please remember to spin the tubes briefly prior to opening them to avoid any losses that might occur from material adhering to the cap or sides of the tube.
Additional information	Total IgG fraction has been purified by 40% ammonium sulpgate precipitation followed by DEAE cellulose chromatography This product can be sold containing ProClin if requested

Application information

Recommended dilution	1 : 2000-1 : 5000 (WB)
Expected | apparent MW	35 | 33 kDa
Confirmed reactivity	*Arabidopsis thaliana, Chlamydomonas reinhardtii, Chlorella sp. DT, Chlorella vulgaris, Echinochloa crus-galli, Eucalyptus grandis x Eucalyptus camaldulensis, Festuca arundinacea* cv. Kord*, Haematococcus pluvialis, Hordeum spontaneum, Hordeum vulgare, Nicotiana benthamiana, Oryza sativa, Panicum miliaceum, Picea abies, Pinus banksiana, Pisum sativum, Spinacia oleracea, Solanum tuberosum* cultivar Taedong Valley, *Synechococcus* sp. PCC7002, sp. PCC 7942 and sp. PCC6803, *Thellungiella salsuginea, Triticum aestivum, Zea mays*
Predicted reactivity	*Galdieria sulphuraria, Glycine max, Nicotiana tabacum, Solanum lycopersicum, Populus trichocarpa, Zosteria marina* Species of your interest not listed? Contact us
Not reactive in	No confirmed exceptions from predicted reactivity are currently known
Additional information	This antibody can be used as a loading control for *Chlamydomonas reinhardtii* while it not so suitable for higher plants as accumulation of these proteins might drop to 12.5-25 % of the WT level in mutants defective for PSII core (Schult et al. 2007).
Selected references	Turc et al. (2024). Non-photochemical quenching upregulation improves water use efficiency and reduces whole plant level water consumption under drought. J Exp Bot. 2024 Mar 12:erae113. doi: 10.1093/jxb/erae113. Nagy et al. (2023). Photoautotrophic and sustained H2 production by the pgr5 mutant of Chlamydomonas reinhardtii in simulated daily light conditions. International Journal of Hydrogen Energy Volume 53, 31 January 2024, Pages 760-769. Cecchin et al (2021) LPA2 protein is involved in photosystem II assembly in Chlamydomonas reinhardtii. Plant J. 2021 Jul 4. doi: 10.1111/tpj.15405. Epub ahead of print. PMID: 34218480. Loudya et al. (2021) Cellular and transcriptomic analyses reveal two-staged chloroplast biogenesis underpinning photosynthesis build-up in the wheat leaf. Genome Biol. 2021 May 11;22(1):151. doi: 10.1186/s13059-021-02366-3. PMID: 33975629; PMCID: PMC8111775. Terentyev (2020: The Main Structural and Functional Characteristics of Photosystem-II-Enriched Membranes Isolated From Wild Type and cia3 Mutant Chlamydomonas reinhardtii. Life (Basel). 2020 May 14;10(5):E63. doi: 10.3390/life10050063. Tang el al. (2020). OsNSUN2-Mediated 5-Methylcytosine mRNA Modification Enhances Rice Adaptation to High Temperature. Dev Cell. 2020 May 4;53(3):272-286.e7. doi: 10.1016/j.devcel.2020.03.009. Smythers et al. (2019). Characterizing the effect of Poast on Chlorella vulgaris, a non-target organism. Chemosphere Volume 219, March 2019, Pages 704-712.

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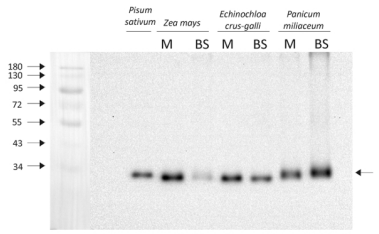
Application example



1 µg of chlorophyll from Pisum sativum thylakoids and from mesophyll (M) and bundle sheath (BS) thylakoids of *Zea mays*, *Echinochloa crus-galli*, *Panicum miliaceum* extracted with 0.4 M sorbitol, 50 mM Hepes NaOH, pH 7.8, 10 mM NaCl, 5 mM MgCl2 and 2 mM EDTA were loaded to lanes. Samples were denatured with Laemmli buffer at 75 0C for 5 min and were separated on 12% SDS-PAGE and blotted 30 min to PVDF using wet transfer. Blot was blocked with 5% milk for 2h at room temperature (RT) with agitation. Blot was incubated in the primary antibody AS06 142-33 (Lot 1902) at a dilution of 1: 2000 overnight at 40C with agitation in 1% milk in TBS-T. The antibody solution was decanted and the blot was washed 4 times for 5 min in TBS-T at RT with agitation. Blot was incubated in secondary antibody (anti-rabbit IgG HRP conjugated, from Agrisera, AS09 602, Lot 1902, as recommended) diluted to 1:20 000 in 1 % milk in TBS-T for 1h at RT with agitation. The blot was washed 5 times for 5 min in TBS-T and 2 times for 5 min in TBS, and developed for 1 min with 1.25 mM luminol, 0.198 mM coumaric acid and 0.009% H2O2 in 0.1 M Tris-HCl, pH 8.5. Exposure time in ChemiDoc System was 100 seconds

Courtesy of Dr. Wioleta Wasilewska-Dębowska, Warsaw University, Poland

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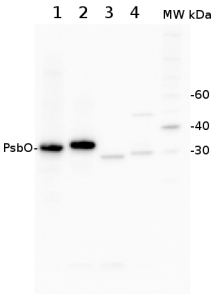

2 µg of total protein from *Arabidopsis thaliana* leaf **(1),** *Hordeum vulgare* leaf **(2)**, *Chlamydomonas reinhardtii* total cell **(3)**, *Synechococcus* sp. 7942 total cell **(4)**, all extracted with PEB (**AS08 300**) were separated on **4-12%** NuPage (Invitrogen) **LDS-PAGE** and blotted 1h to **PVDF**. Blots were blocked immediately following transfer in 2% ECL Advance blocking reagent 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: 10 000 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) diluted to 1:50 000 in 2% blocking solution for 1h at room temperature with agitation. The blots were washed as above and developed for 5 min with chemiluminescent detection reagent according the manufacturers instructions. Images of the blots were obtained using a CCD imager (FluorSMax, Bio-Rad) and Quantity One software (Bio-Rad).

Note: Detection level in algal species can be improved by adjustment of western blot protocol. Please inquire.