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Product no AS01 016

Anti-PsbA | D1 protein of PSII, C-terminal (chicken)

Product information

Immunogen	KLH-conjugated synthetic peptide derived from available plant, algal and cyanobacterial PsbA sequences, including *Arabidopsis thaliana* UniProt: A4QJR4, TAIR: AtCg00020 , *Oryza sativa* P0C434, *Populus alba* Q14FH6, *Physcomitrella patens* Q6YXN7, *Chlamydomonas reinhardtii* P07753, *Synechocystis* sp. P14660 and many others
Host	Chicken
Clonality	Polyclonal
Purity	Purified, total IgY (chicken egg yolk immunoglobulin) in PBS pH 8. Contains 0.02 % sodium azide.
Format	Liquid
Quantity	100 µl
Storage	Store at 4°C; make aliquots to avoid working with a stock. 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	A number of degradation products may be observed when using anti-PsbA antibodies, including products having apparent molecular weights of 24kDa and 16kDa. D1 degradation is a complex set of events and the products observed can be influenced by both the extraction procedure and the physiology of the cells prior to harvest. Third, cross-linking may occur between D1 and cytochrome b559, shifting the protein higher in the gel. In cyanobacteria (PCC7942), three different bands were competed out by preincubating the antibody with the PsbA free peptide, indicating that all bands are indeed PsbA and its precursors or breakdown products. Competition assays were also performed with spinach and Chlamydomonas, confirming the identity of PsbA bands. Anti-PsbA antibodies will not detect D2 protein, as the peptide used to generate PsbA antibodies has no homology to the D2 sequence. **Example of a simulataneous western blot detection with RbcL, PsbA and PsaC antibodies.**

Application information

Recommended dilution	1 :4000-1 : 8000, 5 µg of total protein, (WB)
Expected | apparent MW	38 | 28-30 kDa
Confirmed reactivity	*Alaria esculenta, Amphidinium carterae, Anabaena* sp., *Arabidopsis thaliana, Brachypodium sylvaticum, Chlamydomonas reinhardtii, Chlamydomonas raudensis* (both Antarctic and mesophilic strains), *Cyanophora* sp. , *Cyanothece sp.* ATCC 51142, *Cynara cardunculus, Gonyaulax polyedra, Fucus vesiculosus, Horderum vulgare, Lobaria pulmonaria, Petunia* sp., *Pinus sylvestris, Spartina alterniflora, Solanum lycopresicum, Synechococcus* sp. PCC 7942, Triticum aestivum, *Ulva* sp., symbiotic dinoflagellates of *Stylophora pistillata* and *Turbinaria reniformis, Zea mays*
Predicted reactivity	Algae (brown and red), Conifers, *Cryptomonads, Legumes, Stramenopiles, Euglenoids, Prochlorophytes, Xantophytes* Species of your interest not listed? Contact us
Not reactive in	No confirmed exceptions from predicted reactivity are currently known
Additional information	The antibody is appropriate for detecting both, 24 kDa or the 10 kDa C-terminal fragments, whichever is generated under given treatment conditions.In our analysis we have seen both, ca. 24 kDa and ca. 10 kDa fragments from different samples, depending on treatments and isolation procedures. This antibody will also detect the phosphorylated form of D1as an alternate band to the main band on a high resolution gel.
Selected references	Rogowski et al. (2023).Enzymatic kinetics of photosystem II with DCBQ as a substrate in extended Michaelis-Menten model. J Photochem Photobiol B. 2023 Oct:247:112780. doi: 10.1016/j.jphotobiol.2023.112780. Epub 2023 Aug 25. Vitale et al.(2022) Manipulation of light quality is an effective tool to regulate photosynthetic capacity and fruit antioxidant properties of Solanum lycopersicum L. cv. 'Microtom' in a controlled environment. PeerJ. 2022;10:e13677. Published 2022 Jul 1. doi:10.7717/peerj.13677 Toubiana et al. (2020). Correlation-based Network Analysis Combined With Machine Learning Techniques Highlight the Role of the GABA Shunt in Brachypodium Sylvaticum Freezing Tolerance. Sci Rep , 10 (1), 4489 Sicora et al. (2019). Regulation of PSII function in Cyanothece sp. ATCC 51142 during a light-dark cycle. Photosynth Res. 2019 Mar;139(1-3):461-473. doi: 10.1007/s11120-018-0598-5, Sevilla et al. (2019). Regulation by FurC in Anabaena links the oxidative stress response to photosynthetic metabolism. Plant Cell Physiol. 2019 May 21. pii: pcz094. doi: 10.1093/pcp/pcz094. Figlioli et al. (2019). Overall plant responses to Cd and Pb metal stress in maize: Growth pattern, ultrastructure, and photosynthetic activity. Environ Sci Pollut Res Int. 2019 Jan;26(2):1781-1790. doi: 10.1007/s11356-018-3743-y.

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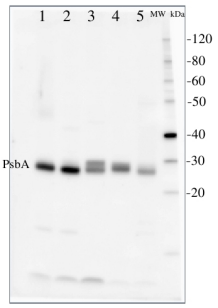
Application example



2 µg of total protein from (**1**) *Arabidopsis thaliana* leaf, (**2**) *Horderum vulgare* leaf, (**3**) *Chlamydomonas reinhardtii* total cell, (**4**) *Synechococcus* sp. 7942 total cell, (**5**) *Anabaena* sp. total cell extract. All extracts were extracted with PEB (**AS08 300**) and separated on **4-12%** NuPage (Invitrogen) **LDS-PAGE** and blotted 1h to **PVDF**. Blots were blocked immediately following transfer 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-hen IgY horse radish peroxidase conjugated, recommended secondary antibody AS09 603) diluted to 1:50 000 for 1h/RT 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).