# Agrisera

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**Product no AS01 016**

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

## Product information

**Background** The **PsbA (D1)** protein of Photosystem II is rapidly cycled under illumination in all oxygenic photobionts. Disruption of PsbA cycling or losses of PsbA pools are central to photoinhibition of photosynthesis in cyanobacteria, algae and plants under a wide range of conditions including excess light, low temperature and UV exposure. Tracking PsbA pools using the Global PsbA antibody can show the functional content of Photosystem II in a wide range of samples.

**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** Total IgY

**Format** Liquid in PBS pH 8.0, 0.02% sodium azide

**Quantity** 100 µl

**Storage** Store at 4°C; make aliquots to avoid working with a stock. Please, Remember to spin tubes briefly prior to opening them to avoid any losses that might occur from liquid material adhering to the cap or sides of the tubes.

**Tested applications** Western blot (WB)

**Related products**

AS01 016S | PsbA protein standard for a quantitative western blot

AS05 084 | Anti-PsbA C-terminal, rabbit antibodies

AS11 1786 | Anti-PsbA N-terminal, rabbit antibodies

AS10 704 | Anti/PsbA | D1 protein of PSII, DE-loop, rabbit antibodies

AS13 2669 | PsbA | D1 protein of PSII, phosphorylated, rabbit antibody

recommended secondary antibody

Plant and algla protein extraction buffer

Secondary antibodies

**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. ,

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*Cyanothece sp.* ATCC 51142*, Cynara cardunculus, Gonyaulax polyedra, Fucus vesiculosus, Horderum vulgare, Lobaria pulmonaria, Petunia* sp. , *Pinus sylvestris, Spartina alterniflora, 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.

For high resolution images, please visit the specific product page at www.agrisera.com

**Selected references**

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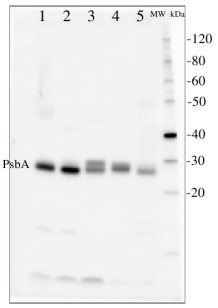
## Application example




**2 µg of total protein** from (**1**) *Arabidopsis thaliana* leaf extracted with PEB (**AS08 300**), (**2**) *Horderum vulgare* leaf extracted with PEB (**AS08 300**), (**3**) *Chlamydomonas reinhardtii* total cell extracted with PEB (**AS08 300**), (**4**) *Synechococcus* sp. 7942 total cell extracted with PEB (**AS08 300**), (**5**) *Anabaena* sp. total cell 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 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).