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Product no **AS10 695**

PsaB | PSI-B core subunit of photosystem I

Product information

Background	Photosystem I (PSI) of chloroplasts is a multisubunit membrane-protein complex that catalyzes the electron transfer from the reduced plastocyanin (or cytochrome c6) in the thylakoid lumen to the oxidized ferredoxin (or flavodoxin) in the chloroplast stroma. PsaB is a core protein of PSI complex. Synonymes: Photosystem I P700 chlorophyll a apoprotein A2, PSI-B
Immunogen	KLH-conjugated synthetic peptide derived from known PsaB sequences including <i>Arabidopsis thaliana</i> UniProt: P56767 , TAIR: AtCg00340
Host	Rabbit
Clonality	Polyclonal
Purity	Serum
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 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.
Tested applications	Blue Native PAGE (BN-PAGE), Western blot (WB)
Related products	AS06 172 Anti-PsaA, rabbit antibodies collection of antibodies to PSI proteins Plant and algal protein extraction buffer Secondary antibodies

Application information

Recommended dilution	1 : 1000 (BN-PAGE), (WB)
Expected apparent MW	82.7 55-60 kDa
Confirmed reactivity	<i>Arabidopsis thaliana</i> , <i>Brassica napus</i> , <i>Brassica rapa</i> , <i>Bryopsis corticulans</i> , <i>Echinola crus-galli</i> , <i>Hordeum vulgare</i> , <i>Neochloris oleoabundans</i> (chlorophyta), <i>Nicotiana tabacum</i> , <i>Pisum sativum</i> , <i>Solanum lycopersicum</i> , <i>Synechococcus</i> sp. PCC7942, <i>Synechocystis</i> sp. PCC 6803, <i>Triticum aestivum</i> , <i>Ulva prolifera</i> , <i>Zea mays</i>
Predicted reactivity	<i>Algae</i> , <i>Aloysia triphylla</i> , <i>Beta vulgaris</i> , <i>Borago officinalis</i> , <i>Brachypodium distachyon</i> , <i>Cannabis sativa</i> , <i>Cercidiphyllum japonicum</i> , <i>Citrus x limon</i> , <i>Cyanobacteria</i> , <i>Exbucklandia populnea</i> , <i>Gunnera maniCata</i> , <i>Kalanchoe laciniata</i> , <i>Lagenaria siceraria</i> , <i>Lippia origanoides</i> , <i>Lippia alba</i> , <i>Indocalamus sinicus</i> , <i>Manihot esculenta</i> , <i>Morus notabilis</i> , <i>Medicago truncatula</i> , <i>Monsonia emarginata</i> , <i>Mytilaria laosensis</i> , <i>Geranium endressii</i> , <i>Glycine max</i> , <i>Glycine soja</i> , <i>Lotus japonicus</i> , <i>Oryza sativa</i> , <i>Pandanus utilis</i> , <i>Panax ginseng</i> , <i>Parnassia laxmannii</i> , <i>Pelargonium cotyledonis</i> , <i>Pennisetum americanum</i> , <i>Phaseolus pachyrrhizoides</i> , <i>Phaseolus lunatus</i> , <i>Phaseolus vulgaris</i> , <i>Phaeodactylum tricornutum</i> , <i>Phyla dulcis</i> , <i>Pinus thunbergii</i> , <i>Populus trichocarpa</i> , <i>Ribes fasciculatum</i> , <i>Rhodoleia championii</i> , <i>Rhycaryum macrocarpum</i> , <i>Salvia miltiorrhiza</i> , <i>Setaria italica</i> , <i>Solanum tuberosum</i> , <i>Spinacia oleracea</i> , <i>Triticum</i> sp., <i>Vigna angularis</i> , <i>Vitis vinifera</i> Species of your interest not listed? Contact us
Not reactive in	<i>Chlamydomonas reinhardtii</i> , dinoflagellate

Additional information

This product can be sold containing ProClin if requested.

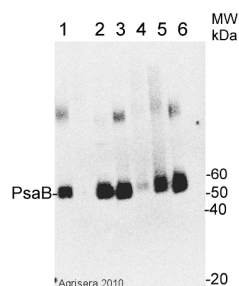
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Selected references

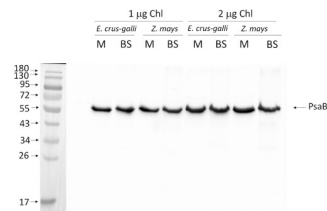
- Grieco et al. (2020). Adjustment of photosynthetic activity to drought and fluctuating light in wheat. *Plant Cell Environ.* 2020 Mar 16. doi: 10.1111/pce.13756.
- Liu et al. (2020). Acid treatment combined with high light leads to increased removal efficiency of *Ulva prolifera*. *Algal Research*, Volume 45, January 2020, 101745
- Frede et al. (2019). Light quality-induced changes of carotenoid composition in pak choi *Brassica rapa* ssp. chinensis. *J Photochem Photobiol B.* 2019 Apr;193:18-30. doi: 10.1016/j.jphotobiol.2019.02.001.
- Lima-Melo et al. (2019). Consequences of photosystem-I damage and repair on photosynthesis and carbon use in *Arabidopsis thaliana*. *Plant J.* 2018 Nov 29. doi: 10.1111/tpj.14177.
- Koochak et al. (2018). The structural and functional domains of plant thylakoid membranes. *Plant J.* 2018 Oct 12. doi: 10.1111/tpj.14127. (Blue Native PAGE)
- Gao et al. (2018). Effect of green light on the amount and activity of NDH-1-PSI supercomplex in *Synechocystis* sp. strain PCC 6803. *Photosynthetica* (2018) 56: 316. <https://doi.org/10.1007/s11099-018-0790-z>.
- Popova et al. (2018). Differential temperature effects on dissipation of excess light energy and energy partitioning in lut2 mutant of *Arabidopsis thaliana* under photoinhibitory conditions. *Photosynth Res.* 2018 May 3. doi: 10.1007/s11120-018-0511-2.
- Rantala and Tikkanen et al. (2018). Phosphorylation induced lateral rearrangements of thylakoid protein complexes upon light acclimation. *Plant Direct* Vol. 2, Issue 2.
- Wang et al. (2018). iTRAQ-based quantitative proteomics analysis of an immature high-oleic acid near-isogenic line of rapeseed. *Molecular Breeding* January 2018, 38:2.
- Kurkela et al. (2017). Acclimation to High CO₂ Requires the β Subunit of the RNA Polymerase in *Synechocystis*. *Plant Physiol.* 2017 May;174(1):172-184. doi: 10.1104/pp.16.01953. Epub 2017 Mar 28.
- Schöttler et al. (2017). The plastid-encoded Psal subunit stabilizes photosystem I during leaf senescence in tobacco. *J Exp Bot.* 2017 Feb 1;68(5):1137-1155. doi: 10.1093/jxb/erx009.
- Giovanardi et al. (2017). Higher packing of thylakoid complexes ensures a preserved Photosystem II activity in mixotrophic *Neochloris oleoabundans*. *Algal Research*, Volume 25, July 2017, Pages 322-332.
- Jusovic et al. (2017). Photosynthetic Responses of a Wheat Mutant (Rht-B1c) with Altered DELLA Proteins to Salt Stress. *Journal of Plant Growth Regulation*, pp1-12.
- Georg et al. (2017). Acclimation of Oxygenic Photosynthesis to Iron Starvation Is Controlled by the sRNA IsaR1. *Curr Biol.* 2017 May 22;27(10):1425-1436.e7. doi: 10.1016/j.cub.2017.04.010. (*Synechocystis* 6803 substrain PCC-M)
- Tyureva et al. (2017). The absence of chlorophyll b affects lateral mobility of photosynthetic complexes and lipids in grana membranes of *Arabidopsis* and barley chlorina mutants. *Photosynth Res.* 2017 Apr 5. doi: 10.1007/s11120-017-0376-9. (*Hordeum vulgare*, western blot)
- Gandini et al. (2017). The transporter SynPAM71 is located in the plasma membrane and thylakoids, and mediates manganese tolerance in *Synechocystis* PCC6803. *New Phytol.* 2017 Mar 20. doi: 10.1111/nph.14526.
- Nath et al. (2016). A Nitrogen-Fixing Subunit Essential for Accumulating 4Fe-4S-Containing Photosystem I Core Proteins. *Plant Physiol.* 2016 Dec;172(4):2459-2470. Epub 2016 Oct 26.
- Fristedt et al. (2015). The thylakoid membrane protein CGL160 supports CF1CF0 ATP synthase accumulation in *Arabidopsis thaliana*. *PLoS One.* 2015 Apr 2;10(4):e0121658. doi: 10.1371/journal.pone.0121658.
- Suorsa et al. (2015). Light acclimation involves dynamic re-organisation of the pigment-protein megacomplexes in non-apressed thylakoid domains. *Plant J.* 2015 Aug 29. doi: 10.1111/tpj.13004.
- Grieco et al. (2015). Light-harvesting II antenna trimers connect energetically the entire photosynthetic machinery - including both photosystems II and I. *Biochim Biophys Acta.* 2015 Jun-Jul;1847(6-7):607-19. doi: 10.1016/j.bbabi.2015.03.004. Epub 2015 Apr 3.
- Subramanyam et al. (2014). Structural and functional changes of PSI-LHCI supercomplexes of *Chlamydomonas reinhardtii* cells grown under high salt conditions. *Planta.* 2010 Mar;231(4):913-22.
- Qin et al. (2014). Isolation and characterization of a PSI-LHCI super-complex and its sub-complexes from a siphonaceous marine green alga, *Bryopsis Corticulans*. *Photosynth Res.* 2014 Sep 12.
- Mustila et al. (2014). The bacterial-type [4Fe-4S] ferredoxin 7 has a regulatory function under photooxidative stress conditions in the cyanobacterium *Synechocystis* sp. PCC 6803. *BBA- Bioenergetics*, April 2014.

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Application example



5 µg of total protein from (1) *Arabidopsis thaliana* leaf extract, (2) *Synechococcus* sp. PCC 7942, (3) *Hordeum vulgare* leaf extract, (4) *Physcomitrella patens*, (5) *Pisum sativum*, (6) *Zea mays* were extracted with Agrisera Protein Extraction Buffer [PEB](#) and separated on **4-12% NuPage** (Invitrogen) **LDS-PAGE** and blotted 1h to nitrocellulose OSMONICS. Blots were blocked immediately following transfer in 2% 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, from Agrisera, [AS09 602](#)) 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 to the manufacturers instructions. Images of the blots were obtained using a CCD imager (FluorSMax, Bio-Rad) and Quantity One software (Bio-Rad). Exposure time was 30 seconds.



1.0 or 2.0 µg of chlorophyll from mesophyll (M) and bundle sheath (BS) thylakoids of *Zea mays* and *Echinochloa crus-galli* 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 °C 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 at a dilution of 1: 1000 overnight at 4 °C 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 1808) diluted to 1:25 000 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 60 seconds.

Courtesy Dr. Wiola Wasilewska-Dąbrowska, Warsaw University, Poland