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Product no AS10 939

PsaC | PSI-C core subunit of photosystem I

Product information

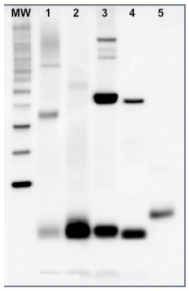
Immunogen	KLH-conjugated synthetic peptide conserved in all known PsaC proteins including *Arabidopsis thaliana* Uniprot:P62090 TAIR: AtCg01060, *Hordeum vulgare* UniProt: P69416, *Oryza sativa* UniProt: P0C360, *Chlamydomonas reinhardtii* UniProt: Q00914, *Synechococcus elongatus* UniProt: Q31QV2
Host	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.
Additional information	Peptide target used to elicit this antibody is well conserved in all photoautotrophs except some cyanobacteria, some red algae and *Cyanophora paradoxa*, which contain a conserved substitution of a valine to an isoleucine. The performance of the antibodies has been confirmed against taxa containing both the valine and isoleucine variants. **Example of a simulataneous western blot detection with RbcL, PsbA and PsaC antibodies.** More information about quantitative western blot using PsaC antibody can be found here.

Application information

Recommended dilution	1 : 1000 (WB)
Expected | apparent MW	9 kDa
Confirmed reactivity	*Arabidopsis thaliana, Chlamydomonas reinhardtii, Cyanophora paradoxa, Dactylis glomeRata, Emiliania huxleyi, Euglena gracilis, Gonyaulax polyedra, Horderum vulgare, Mesembryanthemum sp., Spinacia oleracea, Flaveria sp., Heterosigma akashiwo,Micromonas pusilla, Phaeodactylum tricornutum, Porphyra sp., symbiotic dinoflagellates of Stylophora pistillata and Turbinaria reniformis; Synechococcus* sp.PCC7002, sp. PCC 7942*, Synechocystis sp.* PCC 6803*, Thalassiosira pseudonana, Thalassiosira punctigera, Trichodesmium erythraeum, Triticum aestivum*
Predicted reactivity	Algae, *Cannabis sativa*, *Chromera velia, Cyanobacteria, Brassica napus, Glycine max, Manihot esculenta, Nannochloropsis sp., Nicotiana tabacum, Physcomitrella patens, Prochlorococcus sp.* (surface and a deep water ecotype), *Spinacia oleracea, Synechococcus* PCC 8801, *Thermosynechococcus elongatus* (BP-1) Species of your interest not listed? Contact us
Not reactive in	No confirmed exceptions from predicted reactivity are currently known.
Additional information	In some species minor cross reactions with some larger proteins are seen. These may contain related iron-sulfur binding motifs. Therefore size verification of the reacting band is required. Due to the small size of the protein, care should be taken to differentiate between chemiluminescent signal from PsaC and non-specific signals from chlotophylls or lipids if pigment is retained near the bottom of the blot. For the most optimal results use:thylakoid membranes or PSI particles, solubilized in a SDS sample buffer (final concentrations: 63 mM Tris HCl, 10% glycerol, 2% SDS, 0.0025% bromophenol blue) with 2.5% beta-mercaptoethanol at 85C for 2 minutes. The samples were spun softly, then the supernatant loaded. This product can be sold containing ProClin if requested. For high resolution images, please visit the specific product page at www.agrisera.com
Selected references	

Levitan et al. (2019). Structural and functional analyses of photosystem II in the marine diatom Phaeodactylum tricornutum. Proc Natl Acad Sci U S A. 2019 Aug 27;116(35):17316-17322. doi: 10.1073/pnas.1906726116.
ZavÅ?el et al. (2019). Quantitative insights into the cyanobacterial cell economy. Elife. 2019 Feb 4;8. pii: e42508. doi: 10.7554/eLife.42508.
Zhang et al. (2019). Proteomic responses to ocean acidification of the marine diazotroph Trichodesmium under iron-replete and iron-limited conditions. Photosynth Res. 2019 May 10. doi: 10.1007/s11120-019-00643-8.
Lupette et al. (2019). The architecture of lipid droplets in the diatom Phaeodactylum tricornutum. Algal Research Volume 38, March 2019, 101415.
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.
Steinbeck et al. (2018). Structure of a PSI-LHCI-cyt b6f supercomplex in Chlamydomonas reinhardtii promoting cyclic electron flow under anaerobic conditions. Proc Natl Acad Sci U S A. 2018 Oct 9;115(41):10517-10522. doi: 10.1073/pnas.1809973115.
Gonzaga Heredia-Martinez et al. (2018). Chloroplast damage induced by the inhibition of fatty acid synthesis triggers autophagy in Chlamydomonas. Plant Physiol, Sept. 2018.
Liu et al. (2018). Effects of PSII Manganese-Stabilizing Protein Succinylation on Photosynthesis in the Model Cyanobacterium Synechococcus sp. PCC 7002. Plant Cell Physiol. 2018 Jul 1;59(7):1466-1482. doi: 10.1093/pcp/pcy080.
Du et al. (2018). Galactoglycerolipid Lipase PGD1 Is Involved in Thylakoid Membrane Remodeling in Response to Adverse Environmental Conditions in Chlamydomonas. Plant Cell. 2018 Feb;30(2):447-465. doi: 10.1105/tpc.17.00446.
Cantrell and Peers (2017). A mutant of Chlamydomonas without LHCSR maintains high rates of photosynthesis, but has reduced cell division rates in sinusoidal light conditions. PLoS One. 2017 Jun 23;12(6):e0179395. doi: 10.1371/journal.pone.0179395.
Zang et al. (2017). Characterization of the sulfur-formation (suf) genes in Synechocystis sp. PCC 6803 under photoautotrophic and heterotrophic growth conditions. Planta. 2017 Jul 14. doi: 10.1007/s00425-017-2738-0.
Hu et al. (2017). The SUFBC2 D Complex is Required for the Biogenesis of All Major Classes of Plastid Fe-S Proteins. Plant J. 2017 Jan 19. doi: 10.1111/tpj.13483.
Yang-Er Chen et al. (2017). Responses of photosystem II and antioxidative systems to high light and high temperature co-stress in wheat. J. of Exp. Botany, Volume 135, March 2017, Pages 45–55.
Li et al. (2016). A Hard Day's Night: Diatoms Continue Recycling Photosystem II in the Dark. Front. Mar. Sci., 08 November 2016
Heinnickel et al. (2016). Tetratricopeptide repeat protein protects photosystem I from oxidative disruption during assembly. Proc Natl Acad Sci U S A. 2016 Mar 8;113(10):2774-9. doi: 10.1073/pnas.1524040113
Rozpadek et al. (2015). The fungal endophyte Epichloë typhina improves photosynthesis efficiency of its host orchard grass (Dactylis glomerata). Planta. 2015 Jun 10.
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.
Dang et al. (2014). Combined Increases in Mitochondrial Cooperation and Oxygen Photoreduction Compensate for Deficiency in Cyclic Electron Flow in Chlamydomonas reinhardtii. Plant Cell. 2014 Jul 2. pii: tpc.114.126375.

Application example



5 µg of total protein from samples such as **(1)** *Arabidopsis thaliana* leaf, **(2)** *Hordeum vulgare* leaf, **(3)** *Chlamydomonas reinhardtii* total cell, **(4)** *Synechococcus* sp. 7942 total cell, **(5)** PsaC protein standard (AS04 042S), total protein from all the samples were extracted with Agrisera Protein Extraction Buffer PEB (AS08 300). Samples were diluted with 1X sample buffer (NuPAGE LDS sample buffer (Invitrogen) supplemented with 50 mM DTT and heat at 70°C for 5 min and kept on ice before loading. Protein samples were separated on NuPAGE 4-12% Tris-Bis gel (Invitrogen) LDS-PAGE and blotted for 1h to 1.5h on PVDF using tank transfer. Blots were blocked immediately following transfer in 2% blocking reagent for 1h at RT with agitation. Blots were incubated with PsaC antibody at a dilution of 1: 10 000 (in blocking reagent) for 1h at RT with agitation. The antibody solution was decanted and the blot was rinsed briefly twice, and then washed 1x15 min and 3x5 min with TBS-T at RT with agitation. Blots were incubated in secondary antibody (anti-rabbit IgG HRP conjugated, AS09 602) diluted to 1:50 000 in blocking reagent for 1h at RT with agitation. The blots were washed as above. The blot was developed for 5 min with chemiluminescence detection reagent in mid picogram range. Images of the blots were obtained using a CCD imager (FluorSMax, Bio-Rad) and Quantity One software (Bio-Rad).