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Product no AS01 005

Anti-Lhca1 | PSI type I chlorophyll a/b-binding protein

Product information

Immunogen	BSA-conjugated synthetic peptide derived from the Lhca1 protein of *Arabidopsis thaliana* UniProt: Q01667, TAIR: At3g54890. This sequence is highly conserved in Lhca1 proteins of angiosperms (monocots and dicots) and gymnosperms.
Host	Rabbit
Clonality	Polyclonal
Purity	Total IgG. Protein G purified in PBS pH 7.4.
Format	Lyophilized
Quantity	0.5 mg
Reconstitution	For reconstitution add 100 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	Antibody format is a total IgG fraction, which means that it is a pool of polyclonal antibodies obtained by purification of serum on Protein G, not on a specific antigen column. This product can be sold containing ProClin if requested.

Application information

Recommended dilution	1 : 2000-1 : 5000 (WB)
Expected | apparent MW	25.99 | 22 kDa for *Arabidopsis thaliana*
Confirmed reactivity	*Arabidopsis thaliana, Arachis hypogaea, Bryopsis corticulans, Citrus retuculata, Colobanthus quitensis Kunt Bartl, Echinochloa crus-galli, Fortunella margarita* Swingle*, Guzmania hybrid, Hordeum vulgare, Lycopersicon esculentum (Solanum lycopersicum), Nicotiana tabacum, Oryza sativa, Panicum miliaceum, Picrorhiza kurroa, Physcomitrium patens, Pinus strobus, Pisum sativum, Phaseolus vulgaris, Populus tremula x tremuloides, Posidonia oceanica, Solanum lycopresicum, Spinacia oleracea, Tillandsia flabellate, Triticale, Triticum aestivum, Zea mays*
Predicted reactivity	Dicots, Gymnosperms
Not reactive in	*Chlamydomonas reinhardtii*
Additional information	Protein is processed into mature form (Jansson 1999).
Selected references	Hu et al. (2026). Leaf development regulates state transition capacity in trees. Nat Commun . 2026 Aug 6;17(1):7926. doi: 10.1038/s41467-026-76469-5. Wójtowicz et al. (2025). Shrink or expand? Just relax! Bidirectional grana structural dynamics as early light-induced regulator of photosynthesis. New Phytol . 2025 Jun;246(6):2580-2596. doi: 10.1111/nph.70175. Krupinska et al. (2025). Iron allocation to chloroplast proteins depends on the DNA-binding protein WHIRLY1. Planta. 2025 Jun 17;262(2):32. doi: 10.1007/s00425-025-04736-8. Collombat et al. (2025). Arabidopsis conditional photosynthesis mutants abc1k1 and var2 accumulate partially processed thylakoid preproteins and are defective in chloroplast biogenesis. Commun Biol . 2025 Jan 22;8(1):111. doi: 10.1038/s42003-025-07497-y. Hang et al. (2024). HOT3/eIF5B1 confers Kozak motif-dependent translational control of photosynthesis-associated nuclear genes for chloroplast biogenesis. Nat Commun. 2024 Nov 14;15(1):9878. doi: 10.1038/s41467-024-54194-1. Sakurabata et al. (2024). HASTY-mediated miRNA dynamics modulate nitrogen starvation-induced leaf senescence in Arabidopsis. Nat Commun. 2024 Sep 10;15(1):7913. doi: 10.1038/s41467-024-52339-w. Frangedakis et al. (2024). MYB-related transcription factors control chloroplast biogenesis. Cell: DOI:https://doi.org/10.1016/j.cell.2024.06.039. Hu et al. (2023). Drought affects both photosystems in Arabidopsis thaliana. New Phytol. 2023 Oct;240(2):663-675. doi: 10.1111/nph.19171. Epub 2023 Aug 2. Harchouni et al. (2022) Guanosine tetraphosphate (ppGpp) accumulation inhibits chloroplast gene expression and promotes super grana formation in the moss Physcomitrium (Physcomitrella) patens. New Phytol. 2022;236(1):86-98. doi:10.1111/nph.18320 Espinoza-Corral & Lundquist. (2022) The plastoglobule-localized protein AtABC1K6 is a Mn2+-dependent kinase necessary for timely transition to reproductive growth. J Biol Chem. 2022 Apr;298(4):101762. doi: 10.1016/j.jbc.2022.101762. Epub 2022 Feb 22. PMID: 35202657; PMCID: PMC8956952. Sarvari et al. (2022). Qualitative and quantitative evaluation of thylakoid complexes separated by Blue Native PAGE. Plant Methods. 2022 Mar 3;18(1):23. doi: 10.1186/s13007-022-00858-2. PMID: 35241118; PMCID: PMC8895881.

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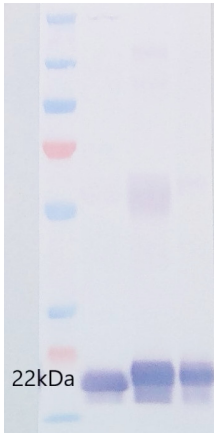


Samples:

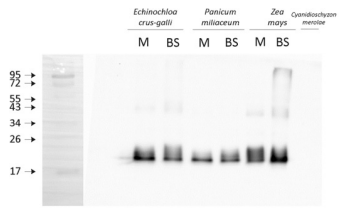
1 - MW marker

2 - 10 µg of *Arabidopsis thaliana* whole leaf extract

3 - 10 µg of *Zea mays* whole leaf extract
4- 10 µg of *Solanum lycopersicum* whole leaf extract

10 µg/well of total protein extracted from , total cell extract, stored at -80ºC. Exact buffer components were: and denatured with Invitrogen LDS sample buffer (4X) at 70°C/5 min. Samples were separated on Invitrogen NuPage Bis-Tris 4-12% SDS-PAGE and blotted for 1 h to Invitrogen PVDF (pore size of 0.45 µm), using: wet transfer. Blot was blocked with 5% milk in TBS-T for: ON/4°C with agitation. Blot was incubated in the primary antibody at a dilution of 1: 1000 for 1h/RT with TBS-T Blocking. The antibody solution was decanted, and the blot was rinsed briefly twice, then washed once for 10 min and 2 times for 5 min in TBS-T at RT with agitation. Blot was incubated in matching secondary antibody (anti-rabbit IgG ALP conjugated, AS09 607 lot 2105) diluted to 1: 1 000 in TBS-T Blocking for 50 min/RT with agitation. The blot was washed as above and developed with Agrisera AS19 BCIP-NBT-PLUS lot 09269221 for 30 seconds. As soon as the desired band is detectable, briefly wash the membrane in generous amounts of deionized water. Transfer the membrane to fresh deionized water and incubate for 2 minutes with agitation. Change the water and incubate again for 5 minutes with agitation before placing the membrane on Whatman paper to dry. Image was captured after 1h.

Courtesy Agrisera



1.0 µg of chlorophyll from mesophyll (M) and bundle sheath (BS) thylakoids of various C4 plants (*Echinochloa crus-galli, Panicum miliaceum, Zea mays*) extracted with 0.4 M sorbitol, 50 mM Hepes NaOH, pH 7.8, 10 mM NaCl, 5 mM MgCl2 and 2 mM EDTA. 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 1h at room temperature (RT) with agitation. Blot was incubated in the primary antibody at a dilution of 1: 2000 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 horse radish peroxidase conjugated, from Agrisera, AS09 602, Lot 1702) 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% H_2O_2 in 0.1 M Tris-HCl, pH 8.5. Exposure time in ChemiDoc System was 15 seconds.

Courtesy of Dr. Wioleta Wasilewska, Warsaw University, Poland