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Product no AS04 045

Anti-Lhcb4 | CP29 chlorophyll a/b binding protein of plant PSII

Product information

Immunogen	BSA-conjugated synthetic peptide derived from a highly conserved sequence of Lhb4 proteins from angiosperms (monocots and dicots) and gymnosperms, including *Arabidopsis thaliana* (Lhcb4.1 At5g01530 and Lhcb4.2 At3g08940 and Lhcb4.3 At2G40100).
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 250 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	An overview about the different Lhc-protein types in plants can be found in Klimmek et al. (2006) Abundantly and rarely expressed Lhc protein genes exhibit distinct regulation patterns in plants. Plant Physiol 140: 793-804. Lhcb4 protein is processed into mature form (Jansson 1999).

Application information

Recommended dilution	1 : 7 000 (WB)
Expected | apparent MW	31.9 | 29 kDa for *Arabidopsis thaliana*
Confirmed reactivity	*Arabidopsis thaliana, Camelina sinensis,* Cucumis sativus L. cv. Jihong no. 2, *Drosera capensis, Hordeum vulgare, Lactuca sativa, Nicotiana tabacum, Oryza sativa, Pisum sativum, Phaseolus vulgaris, Triticum aestivum, Triticale, Zea mays*
Predicted reactivity	*Catalpa bungei, Cucumis sativus*, *Malus domestica, Populus, g*ymnosperms and microalgae *Ostrecococcus tauri*; the target sequence is only weakly conserved in *Physcomitrium patens* Species of your interest not listed? Contact us
Not reactive in	*Chlamydomonas reinhardtii* (please use AS06 117 for this organism)
Selected references	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. Ciesielska et al. (2024). S2P2-the chloroplast-located intramembrane protease and its impact on the stoichiometry and functioning of the photosynthetic apparatus of A. thaliana. Front Plant Sci. 2024 Mar 15:15:1372318. doi: 10.3389/fpls.2024.1372318. Ye et al. (2023). The light-harvesting chlorophyll a/b-binding proteins of photosystem II family members are responsible for temperature sensitivity and leaf color phenotype in albino tea plant. J Adv Res . 2023 Dec 25:S2090-1232(23)00404-6.doi: 10.1016/j.jare.2023.12.017. Hao and Malnoë (2023). A Simple Sonication Method to Isolate the Chloroplast Lumen in Arabidopsis thaliana.Bio Protoc. 2023 Aug 5; 13(15): e4756. Cazzaniga et al. (2022). Engineering astaxanthin accumulation reduces photoinhibition and increases biomass productivity under high light in Chlamydomonas reinhardtii. Biotechnol Biofuels Bioprod. 2022 Jul 11;15(1):77. doi: 10.1186/s13068-022-02173-3. PMID: 35820961; PMCID: PMC9277849. Bru, Steen, Park, et al. (2022) The major trimeric antenna complexes serve as a site for qH-energy dissipation in plants. J Biol Chem. 2022;298(11):102519. doi:10.1016/j.jbc.2022.102523 Pavlovic & Kocab. (2021) Alternative oxidase (AOX) in the carnivorous pitcher plants of the genus Nepenthes: what is it good for? Ann Bot. 2021 Dec 18:mcab151. doi: 10.1093/aob/mcab151. Epub ahead of print. PMID: 34922341. Fukura et al. (2021) Enrichment of chlorophyll catabolic enzymes in grana margins and their cooperation in catabolic reactions. J Plant Physiol. 2021 Nov;266:153535. doi: 10.1016/j.jplph.2021.153535. Epub 2021 Sep 25. PMID: 34607178. Chen et al. (2021)Degradation of the photosystem II core complex is independent of chlorophyll degradation mediated by Stay-Green Mg2+ dechelatase in Arabidopsis,Plant Science,Volume 307,2021,110902,ISSN 0168-9452,https://doi.org/10.1016/j.plantsci.2021.110902.

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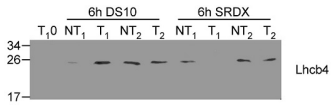

5 µg of total protein from embebed seeds of *Nicotiana tabacum* growing during 4 d in dark (0) and then transfer to continue light growing for 6 h (6) extracted with LB2x buffer and denatured 90 ºC for 2-5 min, were separated on 12.5 % SDS-PAGE and blotted 1h to PVDF using tank transfer. Blots were blocked with TBS-T with 5% dry-milk for 3h at room temperature (RT) with agitation. Blot was incubated in the primary antibody at a dilution of 1: 10 000 overnight at 4 ºC with agitation in TBS-T with 5% dry-milk. The antibody solution was decanted and the blot was rinsed briefly twice, then washed 4 times for 15 min in TBS-T at RT with agitation. Blot was incubated in secondary antibody (anti-rabbit IgG horse radish peroxidase conjugated, AS09 602, from Agrisera) diluted to 1:30 000 in TBS-T with 5% dry-milk for 1h at RT with agitation. The blot was washed as above and developed for 5 min with chemiluminescent detection. Exposure time was 60 seconds.

Courtesy of Dr. Concha Almoguera, Inst. de Recursos Naturales y Agrobiología –CSIC, Spain