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Product no AS01 003

Lhcb2 | LHCII type II chlorophyll a/b-binding protein

Product information

Immunogen	BSA-conjugated synthetic peptide derived from a highly conserved sequence of Lhcb2 proteins from angiosperms (monocots and dicots) and gymnosperms, including *Arabidopsis thaliana* Lhcb2.1 UniProt: Q9SHR7, TAIR: AT2G05100, Lhcb2.2 UniProt: Q9S7J7, TAIR:AT2G05070, Lhcb2.3 UniProt:Q9XF87, TAIR:AT3G27690
Host	Rabbit
Clonality	Polyclonal
Purity	Immunogen affinity purified serum in PBS pH 7.4.
Format	Lyophilized
Quantity	50 µg
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 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.

Application information

Recommended dilution	5 µl of antibody solution (IP), 1: 100 (IG), 1: 500 - 1 : 5000 (WB)
Expected | apparent MW	28.6 | 25 kDa for *Arabidopsis thaliana*
Confirmed reactivity	*Acer pseudoplatanus, Arabidopsis thaliana, Arachis hypogaea, Brachypodium sylvaticum, Camelina sinensis, Cicer arietum, Chlorella vulgaris, Colobanthus quitensis Kunt Bartl, Chlamydomonas reinhardtii, Cucumis sativus, Cytisus cantabricus (Wilk.) Rchb. F., Hieracium pilosella L., Hieracium pilosella L., Hordeum vulgare, Lasallia hispanica, Lycopersicon esculentum (Solanum lycopersicon), Miscanthus x giganteus, Mesembryanthemum crystallinum, Nicotiana benthamiana, Nicotiana tabacum, Oryza sativa, Pisum sativum, Phaseolus coccineus L., Phaseolus vulgaris,Physcomitrium patens, Sinapsis alba, Spinacia oleracea, Syntrichia muralis (Hedw.) Raab, Triticum aestivum, Triticale, Zea mays*
Predicted reactivity	Algae, Dicots, Gymnosperms, Mosses
Not reactive in	No confirmed exceptions from predicted reactivity are currently known
Additional information	Immunoprecipitation has been done using Immunoprecipitation kit from Roche, Cat.No. 11 719 386 001. Protein is processed into mature form (Jansson 1999).
Selected references	Kim et al. (2024).Photoautotrophic cultivation of a Chlamydomonas reinhardtii mutant with zeaxanthin as the sole xanthophyll. Biotechnol Biofuels Bioprod. 2024 Mar 14;17(1):41. doi: 10.1186/s13068-024-02483-8. 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. Singh, Muthamilarasan, Prasad (2022). SiHSFA2e regulated expression of SisHSP21.9 maintains chloroplast proteome integrity under high temperature stress. Cell Mol Life Sci. 2022;79(11):580. Published 2022 Nov 3. doi:10.1007/s00018-022-04611-10 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.2022.102521 Ivanov et al. (2022) The decreased PG content of pgp1 inhibits PSI photochemistry and limits reaction center and light-harvesting polypeptide accumulation in response to cold acclimation. Planta 255, 36 (2022). https://doi.org/10.1007/s00425-022-03819-0 Bychkov et al. (2022) The role of PAP4/FSD3 and PAP9/FSD2 in heat stress responses of chloroplast genes. Plant Sci. 2022 Sep;322:111359. doi: 10.1016/j.plantsci.2022.111359. Epub 2022 Jun 20. PMID: 35738478. Lang et al. (2011).Simultaneous isolation of pure and intact chloroplasts and mitochondria from moss as the basis for sub-cellular proteomics. Plant Cell Rep. 2011 Feb;30(2):205-15.doi: 10.1007/s00299-010-0935-4.

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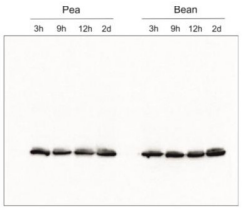
Application example



Species and variants: Pea – *Pisum sativum* L. Bean – *Phaseolus coccineus* L. 3h – 3 hours of cold exposure 9h – 9 hours of cold exposure 12h – 12 hours of cold exposure 2d – 2 days of cold exposure

Samples of isolated thylakoids containing 3 µg of chlorophyll were denatured with Laemmli buffer (1 vol : 1 vol) at 75 °C for 5 min. Denatured samples containing 1 µg of chlorophyll were loaded in the gel wells, separated on 12% SDS-PAGE gels and blotted for 45 min at 100 V to PVDF membrane using wet transfer. Blot was blocked with 5% milk in TBS-T for 60 min at room temperature (RT) with agitation. The blot was incubated with the primary antibody at a dilution of 1:500 in 1% Amersham™ ECL Prime Blocking Agent in TBS-T overnight at 4ºC with agitation. The antibody solution was decanted and the blot was washed 3 times for 5 min in TBS-T at RT with agitation. The blot was incubated using a secondary antibody (goat anti-rabbit IgG HRP conjugated, from Agrisera, AS09 602) 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, 1 time for 5 min in TBS, 1 time for 5 min in 0.1 M Tris (pH 8.5), and developed for 4 min in substrates (0.188 mM coumaric acid, 1.25 mM luminol, 0.01% H2O2). Exposure time was 5 seconds in ChemiDoc scanner (BioRad).

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