**product AS01 004**
**Lhcb1 | LHCII type I chlorophyll a/b-binding protein**

**product information**

**Background**
The major light-harvesting antenna complex II (LHCII) in photosynthetic eukaryotes is located in the thylakoid membrane of the chloroplast. It is a heterotrimeric complex formed by up to 3 different individual subtypes of chlorophyll a/b-binding proteins: Lhcb1, Lhcb2, and Lhcb3. **Lhcb1** is the most abundant chlorophyll a/b-binding protein in eukaryotic phototrophs and often is coded by several nuclear genes. A molecular characterisation of the LHCII proteins can be found in Caffarri et al. (2004) A Look within LHCII: Differential Analysis of the Lhcb1−3 Complexes Building the Major Trimeric Antenna Complex of Higher-Plant Photosynthesis. Biochemistry 43 (29): 9467–9476

**Immunogen**
BSA-conjugated synthetic peptide derived from a highly conserved sequence of Lhb1 proteins from angiosperms (monocots and dicots) and gymnosperms, including *Arabidopsis thaliana* At1g29910 (Lhcb1.1), At1g29920 (Lhcb1.2), At1g29930 (Lhcb1.3, most expressed), At2g34430 (Lhcb1.4), and At2g34420 (Lhcb1.5)

**Host**
Rabbit

**Clonality**
Polyclonal

**Purity**
Affinity purified serum

**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 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**
Western blot (WB)

**Related products**
- AS01 004 | Anti-Lhcb1 | LHCII type I chlorophyll a/b-binding protein, rabbit antibodies
- AS01 004PRE | Lhcb1 | LHCII type I chlorophyll a/b-binding protein, pre-immune serum for control in immunolocalization
- AS01 011 | 2 | Set of 10 plant anti-Lhca and anti-Lhcb rabbit antibodies
- AS01 011 CHLAMYDOMONAS | 2 | Set of 4 Chlamydomonas anti-Lhc rabbit antibodies
- Plant protein extraction buffer

**Application information**

**Recommended dilution**
1 : 2000 (WB)

**Expected | apparent MW**
28 | 25 kDa for *Arabidopsis thaliana*

**Confirmed reactivity**
*Arabidopsis thaliana, Arachis hypogaea, Chlorella vulgaris, Colobanthus quitensis Kunt Bartl, Craterostigma pumilum, Hordeum vulgare, Lycopersicon esculentum (Solanum lycopersicon), Mesembryanthemum crystallinum, Nicotiana tabacum, Oryza sativa, Pisum sativum, Phaseolus vulgaris, Rhoeo discolor, Silene vulgaris, Sinapis alba, Spinacia oleracea, Triticum aestivum, Zea mays*

**Predicted reactivity**
*Aegilops tauschii, Catalpa bungei, Cucumis sativus, Brachypodium distachyon, Lotus japonicus, Hordeum vulgare, Musa acuminata, Nicotiana tabacum, Physcomitrella patens, Solanum tuberosum, Zpsteria marina, Vitis vinifera*
Not reactive in

No confirmed exceptions from predicted reactivity are currently known.

Additional information

This antibody is provided as a total IgG fraction, e.g. serum purified on Protein G to total immunoglobulin.

Lhcb1 Protein is processed into mature form (Jansson 1999).

Selected references

Giovanardi et al. (2018). In pea stipules a functional photosynthetic electron flow occurs despite a reduced
dynamicity of LHCII association with photosystems. Biochim Biophys Acta. 2018 May 24. pii:
S0005-2728(18)30129-4. doi: 10.1016/j.bbapap.2018.05.013.

Myongu et al. (2018). Stable accumulation of photosystem II requires ONE-HELIX PROTEIN1 (OHP1) of the light

Shin et al. (2017), Complementation of a mutation in CpSRP43 causing partial truncation of light-harvesting

Yang-Er Chen et al. (2017). Responses of photosystem II and antioxidative systems to high light and high

Mazur et al. (2016). Overlapping toxic effect of long term thallium exposure on white mustard (Sinapis alba L.)

Kowalewska et al. (2016). Three-dimensional visualization of the internal plastid membrane network during runner
tpc.01053.2015.

Application example

10 µg of total protein from (1) Arabidopsis thaliana leaf, (2) Hordeum vulgare leaf, (3) Zea mays leaf, (4) Chlamydomonas reinhardtii total cell, (5) Spinacia oleracea total leaf, (6) Physcomitrella patens, (7) Solanum tuberosum total leaf, (8) Solanum esculentum total leaf, all extracted with
Protein Extraction Buffer PEB (AS08 300) were separated on 4-12% NuPage (Invitrogen) LDS-PAGE and blotted 1h to PVDF. Blots were blocked
immediately following transfer in 2-2.5% 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,
recommended secondary antibody AS09 602) diluted to 1:25 000 in TBS-T for 1h at room temperature with agitation. The blots were washed as
above and developed for 5 min with chemiluminescent detection reagent according 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 2 minutes.