

product **AS03 030-10**
AtpB | beta subunit of ATP synthase (10 µl)

product information

background	ATP synthase is the universal enzyme that synthesizes ATP from ADP and phosphate using the energy stored in a transmembrane ion gradient.
immunogen	<u>KLH</u> -conjugated synthetic peptide derived from available plant, algal (chloroplastic and mitochondrial) and bacterial sequences of beta subunits of F-type ATP synthases, including <i>Arabidopsis thaliana</i> chloroplastic ATP synthase subunit beta <u>AtCg00480</u> and <i>Arabidopsis thaliana</i> mitochondrial ATP synthase subunit beta-1 <u>At5g08670</u> as well as <i>Chlamydomonas reinhardtii</i> <u>P06541</u> and <u>A81QU3</u>
antibody format	hen; polyclonal; total IgY at 23.3 µg/µl in PBS pH 8.0 + 0.02% sodium azide; liquid;
quantity	10 µl
storage	store at 4 °C; make aliquots to avoid working with a stock. Please, remember to spin tubes briefly prior to opening them to avoid any losses that might occur from liquid material adhering to the cap or sides of the tubes.
tested applications	Western blot (WB), immunolocalization (IL)
additional information	the anti-AtpB antibody will detect the mitochondrial form of the F1 ATP synthase subcomplex, as well as the chloroplastic CF1 ATP synthase and most known bacterial F-type ATP synthases. Peptide used for antibody production is located in a beta sheet, which is partly exposed near the surface of the AtpB protein.

application information

recommended dilution	1: 5 000 - 1: 8 000 (WB), 1: 500 for localization of native enzyme by immunogold (IL)
expected apparent MW	53.9 kDa (<i>Arabidopsis thaliana</i>), 51.7 kDa (<i>Synechocystis</i> PCC 6803), 53.7 kDa (<i>Spinacia oleracea</i>)
confirmed reactivity	<i>Arabidopsis thaliana</i> , <i>Spinacia oleracea</i> , <i>Synechocystis</i> PCC 6803
predicted reactivity	dicots including <i>Glycine max</i> , <i>Vitis vinifera</i> and monocots including <i>Hordeum vulgare</i> , <i>Oryza sativa</i> , <i>Chlamydomonas reinhardtii</i> , cyanobacteria, marine diatoms, <i>Clostridium</i> sp., bacteria including <i>Yersinia</i> sp.
not reactive in	archeal V-type ATP synthase
additional information	results of immunogold studies using anti-AtpB antibody are published in Andersson et al. (2009)
selected references	

Andersson et. al (2009). Co-localization of P-glycerate kinase, P-ribulokinase, ADP-glucose pyrophosphorylase and Rubisco activase with CF1 in pea leaf chloroplasts. *Plant Science* 177:136-141

Johnson (2008) Altered expression of the chloroplast ATP synthase through site-directed mutagenesis in *Chlamydomonas reinhardtii*. *Photosyn Res.* 96(2):153-162.

application example

AtpB protein standard (AS03 030S) 0.03, 0.1, 0.26 pmol (**1-3**) and total protein from *Trichodesmium* IMS 101 extracted with 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% ECL Advance blocking reagent (GE Healthcare) 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: 50 000 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-hen IgY horseradish peroxidase conjugated, from Abcam) diluted to 1:50 000 in 2% ECL Advance blocking solution for 1h at room temperature with agitation. The blots were washed as above and developed for 5 min with ECL Advance detection reagent according the manufacturer's instructions. Images of the blots were obtained using a CCD imager and Quantity One software. Exposure time was 10 seconds.

Note: Optimal quantitation is achieved using moderate sample loads per gel lane, generally 0.5 to 2.5 ug total protein, depending on the abundance of the target protein.

