

product **AS01 017**

RbcL | Rubisco large subunit, form I

product information

background	Rubisco (Ribulose-1,5-bisphosphate carboxylase/oxygenase) catalyzes the rate-limiting step of CO ₂ fixation in photosynthesis. It is one of the most abundant proteins on Earth and its homology has been demonstrated from purple bacteria to flowering plants.
immunogen	KLH -conjugated synthetic peptide derived from all known plant, algal and cyanobacterial RbcL (Rubisco large subunit of Rubisco Form I) sequences, including <i>Arabidopsis thaliana</i> (AtCg00490), <i>Sychooccus</i> sp. Q3ALL1
antibody format	hen polyclonal total IgY in PBS pH 8.0+ 0.02% sodium azide, conc. 16 µg/µl
quantity	50 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	peptide target used to elicit this antibody is not conserved in type II Rubisco found in dinoflagellates and some photosynthetic bacteria. For those species product AS03 037 is recommended.

application information

recommended dilution	1: 10 000 - 1: 20 000 on 2 µg of total cellular protein, detected with standard ECL (WB); (IL) tested on a grass species, formaldehyde-fixed and paraffin-embedded tissue following the protocol from Gonzalez et al. (1998) Plant Physiol. V. 116
expected apparent MW	52.7 kDa (<i>Arabidopsis thaliana</i>), 52.5 kDa (cyanobacteria), 52.3 kDa (<i>Chlamydomonas reinhardtii</i>)
confirmed reactivity	<i>Arabidopsis thaliana</i> , <i>Lobaria pulmonaria</i> , <i>Medicago sativa</i> , mixed phytoplankton, <i>Pisum sativum</i> , <i>Solanum tuberosum</i> , <i>Spartina alterniflora</i> , <i>Spinacia oleracea</i> , <i>Synechococcus</i> sp. PCC7842, <i>Thiobacillus</i> sp. <i>Ulmus</i> sp.
predicted reactivity	di and monocots, green algae, mosses, conifers, liverworts, welwitschia, prochlorophytes
not reactive in	no confirmed exceptions from predicted reactivity known in the moment
additional information	This antibody detects RbcL protein from 102.6 fmoles and has been used as a control to ensure adequate permeabilization and fixation of toxic cyanobacterial cells in immunolabeling experiments (method based on: Orellana & Perry (1995) J Phycol 31: 785-794).

selected references

Antibody has been used in immunolabelling of intact cyanobacterial cells fixed with ethanol using a secondary anti-IgY antibody conjugated with a fluorochrome.

Mackenzie et al. (2005) Inorganic carbon acclimation in *Synechococcus elongatus* alters the dynamics of macromolecular pools and photosynthetic fluxes in response to increased light. *Photosynth Research* 85: 341-357.

Schofield et al. (2003) Changes in macromolecular allocation in nondividing algal symbionts allow for photosynthetic acclimation in the lichen *Lobaria pulmonaria*. *New Phytol* 159: 709-718