

product **AS08 295**

GLN1 GLN2 | GS1 GS2 glutamine synthetase global antibody

product information

background	Glutamine synthetase (GLN or GS) is one of the key enzymes involved in nitrogen metabolism of plants. It catalyses the synthesis of glutamine from glutamate and ammonia in an ATP-dependent reaction. There are two general classes of glutamine synthetase in plants: GLN1, a cytosolic form and GLN2, a chloroplastic form. GLN1 is highly abundant in the vascular elements of roots nodules, flowers and fruits, functioning in the assimilation of ammonia and the biosynthesis of glutamine for nitrogen transport. GLN2 is encoded by a single gene and is highly abundant in leaf mesophyll chloroplasts. Here GLN functions in the assimilation of ammonia produced from photorespiration and the reduction of nitrate in the chloroplasts
immunogen	<u>KLH</u> -conjugated synthetic peptide derived from a wide range of available sequences including all isoforms of <i>Arabidopsis thaliana</i> <u>GLN1-1,1-2,1-3</u> and <u>1-4</u>
antibody format	rabbit polyclonal serum lyophilized
quantity	200 µl for reconstitution add 200 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)
additional information	The antibody will recognize both, cytoplasmic and chloroplastic forms of the GS enzyme.

application information

recommended dilution	1:10 000 withn 0.5-15 ug protein/well (WB)
expected apparent MW	39-40 kDa (GLN1,cytoplasmic form) , 44-45 kDa (GLN2, chloroplastic form)
confirmed reactivity	<i>Arabidopsis thaliana</i> , <i>Spinacia oleracea</i> , <i>Zea mays</i> , moss: <i>Physcomitrella patens</i> red alga <i>Gracilaria gracilis</i>
predicted reactivity	GLN1 dicots including: <i>Brassica napus</i> , <i>Phaseolus. vulgaris</i> , monocots including: <i>Hordeum vulgare</i> , <i>Oryza sativa</i> , trees: <i>Pinus sylvestris</i> , <i>Populus sp.</i> , C GLN2 dicots including: <i>Brassica napus</i> , <i>Glycine max</i> , <i>Phaseolus vulgaris</i> , monocots including: <i>Triticum aestivum</i> , <i>Oryza sativa</i> GLN1 in algae: <i>Chlamydomonas reinhardtii</i>

not reactive in	no confirmed exceptions from predicted reactivity known in the moment
additional information	to be added when available
selected references	<p>Brouwer et al. (2011) The Impact of Light Intensity on Shade-Induced Leaf Senescence. <i>Plant Cell Environ.</i> Dec. 15 (ahead of print).</p> <p>Lang, E.G.E., S.J. Mueller, S.N.W. Hoernstein, J. Porankiewicz-Asplund, M. Vervliet-Scheebaum, R. Reski (2010). Simultaneous isolation of pure and intact chloroplasts and mitochondria from moss as basis for sub-cellular proteomics. <i>Plant Cell Reports</i>, DOI: 10.1007/s00299-010-0935-4. (open source)</p>

application example

0.5 µg of protein from *Arabidopsis thaliana* total leaf fraction **(1)**, 15 µg of protein from *Zea mays* total leaf fraction **(2)**, 5 µg of protein from *Spinacia oleracea* chloroplast enriched fraction **(3)** molecular weight markers (MagicMark™, Invitrogen) **(M)**, extracted with PEB (**AS08 300**), were separated on **4-12%** NuPage (Invitrogen) **LDS-PAGE** and blotted 1h to **PVDF** (Millipore). Filters were blocked 1h with 2% low-fat **milk powder** in TBS-T (0.1% TWEEN 20) and probed with anti-GLN1 GLN2 antibody (AS08 295, **1:10 000**, 1h) and secondary anti-rabbit (**1:20000**, 1 h) antibody (HRP conjugated, Abcam) in TBS-T containing 2% low fat milk powder. Antibody incubations were followed by washings in TBS-T. All steps were performed at RT with agitation. Blots were developed for 5 min with ECL Advance detection reagent according the manufacturers instructions (GE Healthcare). Images of the blots were obtained using a CCD imager (FluorSMax, Bio-Rad) and Quantity One software (Bio-Rad).

