

product **AS09 458**

PEPC | phosphoenolpyruvate carboxylase

product information

background	PEPC (phosphoenolpyruvate carboxylase), EC=4.1.1.31, belongs to an enzyme family of carboxy-lyases that is catalyzing adding of carbon dioxide to phosphoenolpyruvate (PEP) to form oxaloacetate. Alternative names: PEPCase 1, PEPCase 3, PEPC 1, PEPC 3
immunogen	<u>KLH</u> -conjugated synthetic peptide well conserved PEPC1 and sequences from different plant species including <i>Arabidopsis thaliana</i> <u>Q9MAH0</u> , <u>At1g53310</u> (PEPC 1), <u>Q84VW9</u> , <u>At3g14940</u> (PEPC 3). The peptide chosen to elicit this antibody is also perfectly conserved in bacterial type of this enzyme <u>NP_177043.2</u> (PEPC 4)
antibody format	rabbit polyclonal affinity purified serum in PBS pH 7.4, lyophilized
quantity	50 µg 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. Please do not re-use this primary antibody solution. In case of cyanobacterial samples there will be no signal in your second incubation.
tested applications	western blot (WB), immunolocalization (IL)
related products	<u>AS07 241</u> anti-PEPCK PEP carboxy kinase
additional information	to be added when available

application information

recommended dilution	1 : 1000 with standard ECL (WB), 1: 500 (IL)
expected apparent MW	110 105 kDa
confirmed reactivity	<i>Ananas comosus</i> , <i>Arabidopsis thaliana</i> , <i>Hordeum vulgare</i> , <i>Jatropha curcas</i> , <i>Lupinus sp.</i> , <i>Mesembryanthemum crystallinum</i> , <i>Nicotiana tabacum</i> , <i>Salsola laricifolia</i> , <i>Zea mays</i> , <i>Synechocystis sp.</i> , <i>Phaeodactylum tricornutum</i> (strain CCAP 1055/1), <i>Thalassiosira weissfloggi</i>
predicted reactivity	dicots including: <i>Cucumis sativus</i> (PEPC1,PEPC2,PEPC3), <i>Flaveria trinervia</i> , <i>Glycine max</i> , <i>Lupinus albus</i> , <i>Solanum tuberosum</i> , <i>Spinacia oleracea</i> , <i>Medicago sativa</i> , <i>Pisum sativa</i> , <i>Phaseolus vulgaris</i> , monocots including: <i>Triticum aestivum</i> , <i>Oryza sativa</i> , algae, diatoms: <i>Thalassiosira pseudonana</i> , other species: <i>Salmonella sp.</i> <i>Shigella sp.</i> <i>Yersinia sp.</i> <i>Vibrio sp.</i> ,
not reactive in	no confirmed exceptions from predicted reactivity known in the moment
additional information	
selected references	<u>Foley et al.</u> (2015). Analysis of conglutin seed storage proteins across lupin species using transcriptomic, protein and comparative genomic approaches. BMC Plant Biology 2015, 15:106 doi:10.1186/s12870-015-0485-6. <u>Shi et al.</u> (2015). Phosphoenolpyruvate carboxylase in arabidopsis leaves plays a crucial role in carbon and nitrogen metabolism. Plant Physiol. 2015 Mar;167(3):671-81. <u>Katava et al.</u> (2015). Protein Phosphatase 2A Holoenzyme Is Targeted to Peroxisomes by Piggybacking and Positively Affects Peroxisomal -Oxidation. Plant Physiol. 2015 Feb;167(2):493-506. doi: 10.1104/pp.114.254409. <u>Wen and Zhang</u> (2014). <i>Salsola laricifolia</i> , another C 3 –C 4 intermediate species

in tribe Salsoleae s.l. (Chenopodiaceae). Photosynth Res. 2014 Sep 17.
(immunolocalization)

Suk Chang et al. (2014). Improvement of the phosphoenolpyruvate carboxylase activity of *Phaeodactylum tricornutum* PEPCase 1 through protein engineering. Enzyme and Microbial Technology, April 20134.

Sharwood et al. (2014). Photosynthetic flexibility in maize exposed to salinity and shade. J Exp Bot. 2014 Apr 1.

application example

5 µg of total protein from (1) *Arabidopsis thaliana* leaf extracted with Protein Extraction Buffer, PEB (**AS08 300**), (2) *Spinacia oleracea* total cell, extracted with PEB, (3) *Hordeum vulgare* total cell extracted with PEB, (4) *Zea mays* total cell extracted with PEB, 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: 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, 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 manufacturers instructions. Images of the blots were obtained using a CCD imager (FluorSMax, Bio-Rad) and Quantity One software (Bio-Rad).

