

product **AS08 312**

AtpC | gamma subunit of ATP synthase

product information

background	ATP synthase produces ATP from ADP in the presence of a proton gradient across the membrane. F-type ATPases have two components, CF(1) - the catalytic core - and CF(0) - the membrane proton channel. CF(1) has five subunits: alpha(3), beta(3), gamma(1), delta(1), epsilon(1). CF(0) has three main subunits: a, b and c. The gamma chain is believed to be important in regulating ATPase activity and the flow of protons through the CF(0) complex. Alternative name of gamma subunit is also: F-ATPase gamma subunit.
immunogen	synthetic peptides derived from <i>Arabidopsis thaliana</i> chloroplast localized ATP synthase subunit gamma chain 1 and 2 protein sequence (At4g04640 and At1g15700) and <i>Chlamydomonas reinhardtii</i> ATP synthase subunit gamma protein sequence (A8HXL8) coupled to KLH
antibody format	rabbit; polyclonal; serum; lyophilized
quantity	100 µl - for reconstitution add 100 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	AS08 370 anti-ATP synthase, whole enzyme AS08 304 anti-ATP synthase subunit alpha antibody AS03 030 anti-ATP synthase subunit beta hen antibody AS05 071 anti-ATP synthase subunit c antibody AS07 260 H+ATPase plasma membrane H+ATPase
additional information	to be added when available

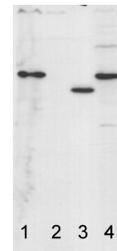
application information

recommended dilution	1: 10 000 (WB), 1: 1000 (ELISA)
expected apparent MW	35.3 42 (<i>Chlamydomonas reinhardtii</i>) 35.6 38 (<i>Spinacia oleracea</i>)
confirmed reactivity	<i>Arabidopsis thaliana</i> , <i>Chlamydomonas reinhardtii</i>

predicted reactivity	<i>Glycine max</i> , <i>Lens culinaris</i> , <i>Nicotiana tabacum</i> , <i>Physcomitrella patens</i> , <i>Pisum sativum</i> , <i>Populus jackii</i> , <i>Vitis vinifera</i> , cyanobacteria
not reactive in	no confirmed exceptions from predicted reactivity known in the moment
additional information	apparent molecular weight of subunit gamma (and as general rule most of ATP synthase subunits) is quite different between <i>Chlamydomonas</i> (42 kDa) and higher plants (38 kDa in spinach), see figure in Lemaire et al. (1989)
selected references	Dwyer et al. (2012) . Antisense reductions in the PsbO protein of photosystem II leads to decreased quantum yield but similar maximal photosynthetic rates. <i>J. Ex. Bot.</i> 63(13):4781-95.

application example

10 ug of chlorophyll/well of *Chlamydomonas reinhardtii* total cell extract (1), *Chlamydomonas reinhardtii* subunit gamma deletion mutant thylakoid membrane fraction (2), *Arabidopsis thaliana* thylakoid membrane fraction (3), *Chlamydomonas reinhardtii* thylakoid membrane preparation (4) were separated on 12-18% acrylamide-8M urea gel and blotted to nitrocellulose membrane. Filters were blocked 1 h with 5% dry milk in 1 x PBS and probed with anti-ATP synthase subunit gamma antibody (**AS08 312**, 1: 25 000, 1h) and secondary HRP-conjugated anti-rabbit antibody (1: 10 000, 1 h) in 1 x PBS containing 5% dry milk. All steps were performed at RT with agitation. Signal was detected with standard ECL (GE Healthcare), exposure time 30" and 3 min (overexposed).



Arabidopsis membrane preparation has been done according to [Lezhneva et al. \(2008\)](#) A novel pathway of cytochrome c biogenesis is involved in the assembly of the cytochrome b6f complex in *Arabidopsis* chloroplasts. *J Biol. Chem.*, 283:24608-24616 and *Chlamydomonas* membranes were prepared according to [Chua & Bennoun \(1975\)](#) Thylakoid membrane polypeptides of *Chlamydomonas reinhardtii*: wild-type and mutant strains deficient in photosystem II reaction center. *PNAS* 72:2175-2179

Courtesy Dr. Yves Choquet