

Agrisera

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Product no **AS08 312**

AtpC | Gamma subunit of ATP synthase (chloroplastic)

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 | KLH-conjugated peptide, derived from C-terminal part of *Chlamydomonas reinhardtii* protein sequence [A8HXL8](#)

Host | Rabbit

Clonality | Polyclonal

Purity | Serum

Format | Lyophilized

Quantity | 100 µl

Reconstitution | 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, rabbit antibodies

[AS08 304](#) | Anti-ATP synthase subunit alpha, rabbit antibodies

[AS03 030](#) | Anti-ATP synthase subunit beta, chicken antibodies

[AS05 071](#) | Anti-ATP synthase subunit c, rabbit antibodies

[AS07 260](#) | Anti-H⁺ATPase | plasma membrane H⁺ATPase, rabbit antibodies

[Plant protein extraction buffer](#)

[Secondary antibodies](#)

Additional information | This product can be sold containing ProClin if requested.

Application information

Recommended dilution | 1: 1000 (ELISA), 1: 10 000 (WB)

Expected | apparent MW | 35.3 | 42 (*Chlamydomonas reinhardtii*)

35.6 | 38 (*Spinacia oleracea*)

Confirmed reactivity | *Arabidopsis thaliana*, *Chlamydomonas reinhardtii*, *Echinochloa crus-galli*, *Phycomitrella patens*, *Pisum sativum*, *Zea mays*

Predicted reactivity | *Arachis hypogaea*, *Auxenochlorella protothecoides*, *Bathycoccus prasinos*, *Cephalotus follicularis*, *Cicer arietinum*, *Coccomyxa subellipsoidea* (strain C-169), *Cucumis melo*, Cyanobacteria, *Cynara cardunculus* var. *scolymus*, *Daucus carota* subsp. *sativus*, *Dendrobium catenatum*, *Fagus sylvatica*, *Genlisea aurea*, *Glycine max*, *Gossypium hirsutum*, *Jatropha curcas*, *Juglans regia*, *Klebsormidium flaccidum*, *Helianthus annuus*, *Lactuca sativa*, *Lens culinaris*, *Lupinus angustifolius*, *Marchantia polymorpha* subsp. *ruderalis*, *Medicago truncatula*, *Micromonas pusilla* (strain CCMP1545), *Monoraphidium neglectum*, *Morus notabilis*, *Nelumbo nucifera*, *Nicotiana sylvestris*, *Nicotiana tabacum*, *Ostreococcus tauri*, *Punica granatum*, *Phaseolus vulgaris*, *Pisum sativum*, *Populus jackii*, *Populus*

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trichocarpa, Prunus persica, Ricinus communis, Rosa chinensis, Selaginella moellendorffii, Spinacia oleracea, Solanum lycopersicum, Solanum tuberosum, Terma orientalis, Tetraselmis sp. GSL018, Theobroma cacao, Trifolium pratense, Zostera marina, Vigna unguiculata, Vitis vinifera, Volvox carteri f. nagariensis, Quercus suber

Species of your interest not listed? [Contact us](#)

Not reactive in *Phaeodactylum tricornutum*

Additional information Apparent molecular weight of subunit gamma (and as general rule most of ATP synthase subunits) is quite different between *Chlamydomonas* (42 kDa) and higher plants (38 kDa in spinach), see figure in [Lemaire et al. \(1989\)](#).

For high resolution images, please visit the specific product page at www.agrisera.com

Selected references

[Storti et al. \(2020\)](#). The activity of chloroplast NADH dehydrogenase-like complex influences the photosynthetic activity of the moss *Physcomitrella patens*. doi.org/10.1101/2020.01.29.924597

[Pralon et al. \(2019\)](#). Plastoquinone homeostasis by Arabidopsis proton gradient regulation 6 is essential for photosynthetic efficiency. Commun Biol. 2019 Jun 20;2:220. doi: 10.1038/s42003-019-0477-4.

[Li et al. \(2019\)](#). A genome-wide algal mutant library and functional screen identifies genes required for eukaryotic photosynthesis. Nat Genet. 2019 Apr;51(4):627-635. doi: 10.1038/s41588-019-0370-6.

[Liang et al. \(2018\)](#). Thylakoid-Bound Polysomes and a Dynamin-Related Protein, FZL, Mediate Critical Stages of the Linear Chloroplast Biogenesis Program in Greening Arabidopsis Cotyledons. Plant Cell. 2018 Jul;30(7):1476-1495. doi: 10.1105/tpc.17.00972. Epub 2018 Jun 7.

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[Schmid et al. \(2018\)](#). PUMPKIN, the sole Plastid UMP Kinase, Associates with Group II Introns and Alters Their Metabolism. Plant Physiol. 2018 Nov 8. pii: pp.00687.2018. doi: 10.1104/pp.18.00687.

[Nikkanen et al. \(2018\)](#). Regulation of chloroplast NADH dehydrogenase-like complex by NADPH-dependent thioredoxin system. CSH, BioRxiv. doi.org/10.1101/261560

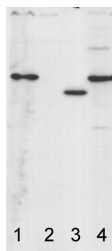
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[Naranjo et al. \(2015\)](#). The chloroplast NADPH thioredoxin reductase C, NTRC, controls non-photochemical quenching of light energy and photosynthetic electron transport in Arabidopsis. Plant Cell Environ. 2015 Oct 17. doi: 10.1111/pce.12652.

[Dwyer et al. \(2012\)](#). Antisense reductions in the PsbO protein of photosystem II leads to decreased quantum yield but similar maximal photosynthetic rates. J. Ex. Bot. 63(13):4781-95.

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Application example



10 µg 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 chemiluminescent detection reagent, 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

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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, French National Centre for Scientific Research, France