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Product no **AS07 260**

H+ATPase | Plasma membrane H+ATPase (rabbit antibody)

Product information

Immunogen	KLH-conjugated synthetic peptide, derived from available di and monocot, fern, mosses and algal plasma membrane ATPase sequences including <i>Arabidopsis thaliana</i> ATPase 1 (UniProt: P20649 , TAIR: At2g18960) and ATPase 2 (UniProt: P19456 , TAIR: At4g30190), 3 (UniProt: P20431 , TAIR: At5g57350), 4 (UniProt: Q9SU58 , TAIR: At3g47950), 6 (UniProt: Q9SH76 , TAIR: At2g07560), 7 (UniProt: Q9LY32 , TAIR: At3g60330), 8 (UniProt: Q9M2A0 , TAIR: At3g42640), 9 (UniProt: Q42556 , TAIR: At1g80660), 11 (UniProt: Q9LV11 , TAIR: At5g62670) of <i>Arabidopsis thaliana</i> and hydrogen ATPase of <i>Chlamydomonas reinhardtii</i> (Q9FNS3)
Host	Rabbit
Clonality	Polyclonal
Purity	Serum
Format	Lyophilized
Quantity	50 µl
Reconstitution	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. Do not Store this antibody in 4°C.
Additional information	Cellular [compartment marker] for plasma membrane

Application information

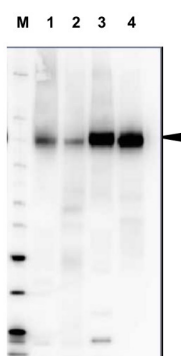
Recommended dilution	1 : 600-1 : 1000 (IF), 1 : 100 (IL), 1 : 1000-1 : 10 000 (WB)
Expected apparent MW	90- 95 kDa (<i>Arabidopsis thaliana</i> , depending upon an isoform)
Confirmed reactivity	<i>Aesculus hippocastanum</i> , <i>Arabidopsis thaliana</i> , <i>Camellia sinensis</i> cv. Shu-chazao, <i>Chara australis</i> R.Br, <i>Chlamydomonas reinhardtii</i> , <i>Cucumis sativus</i> , <i>Cucurbita moschata</i> , <i>Glycine max</i> (weak), <i>Kandelia obovata</i> , <i>Hordeum vulgare</i> , <i>Lolium perenne</i> , <i>Lycopersicon esculentum</i> , <i>Malus x domestica</i> Borkh. c.v. Fuji, <i>Marchantia polymorpha</i> , <i>Medicago truncatula</i> , <i>Nicotiana benthamiana</i> , <i>Nicotiana tabacum</i> , <i>Noccaea caerulescens</i> , <i>Oryza sativa</i> , <i>Petunia hybrida</i> , <i>Phalenopsis Sogo Yukidian cultivar V3</i> , <i>Physcomitrella patens</i> , <i>Picea abies</i> , <i>Pisum sativum</i> , <i>Populus tremula</i> , <i>Pteris vittata</i> (fern), <i>Ricinus communis</i> , <i>Spinacia oleracea</i> , <i>Zea mays</i> , <i>Vicia faba</i>
Predicted reactivity	Algae, <i>Avena sativa</i> , <i>Dunaliella</i> spp., <i>Gossypium hirsutum</i> , <i>Hordeum vulgare</i> , <i>Ostreococcus</i> spp., <i>Pinus thunbergii</i> , <i>Physcomitrella patens</i> , <i>Mesembrianthemum crystallinum</i> , <i>Mortierella elongata</i> , <i>Nannochloropsis gaditana</i> CCMP526, <i>Ostreococcus tauri</i> , <i>Saccharomyces cerevisiae</i> , <i>Solanum tuberosum</i> , <i>Spinacia oleracea</i> , <i>Triticum aestivum</i> , <i>Ulva prolifera</i> , <i>Ustilago maydis</i> Species of your interest not listed? Contact us
Not reactive in	<i>Aspergillus niger</i>
Additional information	VERY IMPORTANT: please, do not heat up your samples over 70°C as this might cause H+ATPase to precipitate and there will be no signal on your Western Blot. Before SDS-PAGE, centrifuge your samples at room temperature at 10 000 rpm/1 min to remove any aggregates. H+ATPase will be less abundant in mature roots and leafs and therefore detection may require use of very sensitive reagents. This product can be sold containing ProClin if requested.

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

Selected references

- [Wang et al. \(2020\)](#). Plant NLR Immune Receptor Tm-22 Activation Requires NB-ARC Domain-Mediated Self-Association of CC Domain. *PLoS Pathog.* 2020 Apr 27;16(4):e1008475. doi: 10.1371/journal.ppat.1008475.
- [Collins et al. \(2020\)](#). EPSIN1 Modulates the Plasma Membrane Abundance of FLAGELLIN SENSING2 for Effective Immune Responses. *Plant Physiol.* 2020 Feb 24. pii: pp.01172.2019. doi: 10.1104/pp.19.01172
- [Wang et al. \(2020\)](#). The Arabidopsis exocyst subunits EXO70B1 and EXO70B2 regulate FLS2 homeostasis at the plasma membrane. *New Phytol.* 2020 Mar 2. doi: 10.1111/nph.16515.
- [Kuang et al. \(2019\)](#). Quantitative Proteome Analysis Reveals Changes in the Protein Landscape During Grape Berry Development With a Focus on Vacuolar Transport Proteins. *Front Plant Sci.* 2019 May 15;10:641. doi: 10.3389/fpls.2019.00641. eCollection 2019.
- [Yuan et al. \(2019\)](#). Phospholipidase D Negatively Regulates the Function of Resistance to *Pseudomonas syringae* pv. *Maculicola* 1 (RPM1). *Front Plant Sci.* 2019 Jan 18;9:1991. doi: 10.3389/fpls.2018.01991.
- [Zhang et al. \(2018\)](#). Root plasma membrane H⁺-ATPase is involved in low pH-inhibited nitrogen accumulation in tea plants (*Camellia sinensis* L.). *Plant Growth Regul* (2018) 86: 423.
- [Roth et al. \(2018\)](#). A rice Serine/Threonine receptor-like kinase regulates arbuscular mycorrhizal symbiosis at the peri-arbuscular membrane. *Nat Commun.* 2018 Nov 8;9(1):4677. doi: 10.1038/s41467-018-06865-z.
- [Wang et al. \(2018\)](#). Resistance protein Pit interacts with the GEF OsSPK1 to activate OsRac1 and trigger rice immunity. *Proc Natl Acad Sci U S A.* 2018 Nov 16. pii: 201813058. doi: 10.1073/pnas.1813058115.
- [Pertl-Obermeyer et al. \(2018\)](#). Dissecting the subcellular membrane proteome reveals enrichment of H⁺ (co-)transporters and vesicle trafficking proteins in acidic zones of *Chara* internodal cells. *PLoS One.* 2018 Aug 29;13(8):e0201480. doi: 10.1371/journal.pone.0201480.
- [Zhang et al. \(2018\)](#). Maintenance of mesophyll potassium and regulation of plasma membrane H⁺-ATPase are associated with physiological responses of tea plants to drought and subsequent rehydration. *The Crop Journal* July 2018. (*Camellia sinensis*)
- [Sequel et al. \(2018\)](#). PROHIBITIN 3 forms complexes with ISOCHORISMATE SYNTHASE 1 to regulate stress-induced salicylic acid biosynthesis in Arabidopsis. *Plant Physiol.* Jan 2018. DOI:10.1104/pp.17.00941
- [Duan et al. \(2017\)](#). A Lipid-Anchored NAC Transcription Factor Is Translocated into the Nucleus and Activates Glyoxalase I Expression during Drought Stress. *Plant Cell.* 2017 Jul;29(7):1748-1772. doi: 10.1105/tpc.17.00044. (*Nicotiana benthamiana*)
- [Nagele et al. \(2017\)](#). Arabidopsis SH3P2 is an ubiquitin-binding protein that functions together with ESCRT-I and the deubiquitylating enzyme AMSH3. *Proc Natl Acad Sci U S A.* 2017 Aug 7. pii: 201710866. doi: 10.1073/pnas.1710866114.
- [Aloui et al. \(2017\)](#). The plasma membrane proteome of *Medicago truncatula* roots as modified by arbuscular mycorrhizal symbiosis. *Mycorrhiza.* 2017 Jul 19. doi: 10.1007/s00572-017-0789-5.
- [Lomin et al. \(2017\)](#). Studies of cytokinin receptor-phosphotransmitter interaction provide evidences for the initiation of cytokinin signalling in the endoplasmic reticulum. *Functional Plant Biology*, CSIRO Publications. (*Nicotiana benthamiana*, western blot)
- [Kovaleva et al. \(2017\)](#). Regulation of Petunia Pollen Tube Growth by Phytohormones: Identification of Their Potential Targets. DOI:10.17265/2161-6256/2016.04.004. (immunolocalization)
- [Liao et al. \(2017\)](#). Arabidopsis E3 ubiquitin ligase PLANT U-BOX13 (PUB13) regulates chitin receptor LYSIN MOTIF RECEPTOR KINASE5 (LYK5) protein abundance. *New Phytol.* 2017 Feb 14. doi: 10.1111/nph.14472.
- [LaMontagne et al. \(2016\)](#). Isolation of Microsomal Membrane Proteins from Arabidopsis thaliana. *Curr. Protoc. Plant Biol.* 1:217-234. doi: 10.1002/cppb.20020.
- [Heard et al. \(2015\)](#). Identification of Regulatory and Cargo Proteins of Endosomal and Secretory Pathways in Arabidopsis thaliana by Proteomic Dissection. *Mol Cell Proteomics.* 2015 Jul;14(7):1796-813. doi: 10.1074/mcp.M115.050286. Epub 2015 Apr 21.

Application example



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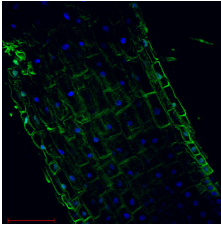
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20 µg of total protein from *Arabidopsis thaliana* (1), *Hordeum vulgare* (2), *Zea mays* (3), *Nicotiana tabaccum* plasma membrane fraction, 2.5 µg (4), extracted with **Protein Extraction Buffer**, PEB (**AS08 300**, homogenate the tissue with 3 to 5 volumes of the homogenizing buffer), were boiled for 10 min. in 70 °C and separated on **4-12% NuPage** (Invitrogen) **LDS-PAGE** and blotted 1h to **PVDF**. Blots were blocked immediately following transfer in blocking reagent 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: 5 000 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, recommended secondary antibody **AS09 602**) diluted to 1:20 000 in 2% blocking solution for 1h at room temperature with agitation. The blots were washed as above and developed for 5 min with chemiluminescence 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). Exposure time was 2 min.

Immunolocalization



Plasma membrane H+ATPase localization in *Arabidopsis thaliana* roots.

Arabidopsis thaliana, elongation zone, H+ATPase (green). *Arabidopsis thaliana* roots were fixed in para-formaldehyde for 30 minutes. Tissue cleaning has been performed before immunolocalization. Anti-rabbit H+ATPase | plasma membrane primary antibody diluted in 1: 300 and anti-rabbit IgG secondary antibody conjugated with Alexa 555. Co-staining with DAPI visualized nucleus (blue color). Scale bar – 100 µm.

Courtesy Dr. Taras Pasternak, Freiburg University, Germany