Distribuito in ITALIA da
Li StarFish S.r.l.
Via Cavour, 35
20063 Cernusco S/N (MI)
telefono 02-92150794
fax 02-92157285
info@listarfish.it
www.listarfish.it

product AS07 213

V-ATPase | Epsilon subunit of tonoplast H+ATPase

product information

Background	**Plant vacuole V-ATPase** is responsible for energization of transport of ions and metabolites, and acts as well 'house-keeping' and as a stress response enzyme. V-ATPase is a multi-subunit enzyme composed of a membrane sector and a cytosolic catalytic sector. It is related to the FoF1 ATP synthase. Alternative protein names: Vacuolar proton pump subunit E, Protein EMBRYO DEFECTIVE 2448
Immunogen	KLH-conjugated synthetic peptide chosen from subunit E of plant V-ATPase including *Arabidopsis thaliana* At4g11150. Peptide is conserved in vacuolar H+-ATPase subunit E, isoform 1 to 3 (VHA-E1).
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.
Tested applications	Immunohistochemistry (IHC), Western blot (WB)
Related products	AS09 577 | Anti-V-ATPase | Epsilon subunit of tonoplast H+ATPase, goat antibodies AS07 213P | V-ATPase | Epsilon subunit of tonoplast H+ATPase | Blocking peptide other antibodies to vacuolar membrane marker antibodies for plant cellular compartments recommended secondary antibody
Additional information	Cellular [compartment marker] of tonoplast membrane. This product can be sold containing ProClin if required.

Application information

Recommended dilution	1 : 50 (IHC), 1 : 2000-1 : 5000 (WB)
Expected | apparent MW	26 | 31 kDa (*Arabidopsis thaliana*)
Confirmed reactivity	*Ananas comosus, Arabidopsis thaliana, Cucumis sativus, Chara australis* R.Br*, Chlamydomonas reinhardtii, Fortunella margarita* Swingle*, Hordeum vulgare, Lycopersicum esculentum, Lilium longiflorum, Malus x domestica Borkh.* c.v. Fuji*, Medicago truncatula, Mesembryanthemum crystallinum, Nicotiana tabacum, Noccaea caerulescens, Oryza sativa, Petunia hybrida* cv. Mitchell*, Populus* sp.*, Pteris vittata (fern), Thellungiella sp., Triticum aestivum, Zea mays*
Predicted reactivity	*Brachypodium dystachyon, Capsella rubella, Citrus clementina, Citrus unshiu, Citrus limon, Eucalypsus grandis, Glyxine max, Glycine soja, Lotus japonicus, Phaseolus sp. , Physcomitrella patens, Populus trichocarpa, Prunus persica, Ricinus communis, Riticum aestivum, Solanum lycopersicum, Solanum tuberosum, Sorghum bicolor Theobroma cacao, Vitis vinifera,* Bull frog, Chicken, Bovine, *Drosophila melanogaster*, Human, Mouse, Rat
Not reactive in	*Avicennia* sp., mangrove plants, *Schizosaccharomyces pombe*
Additional information	

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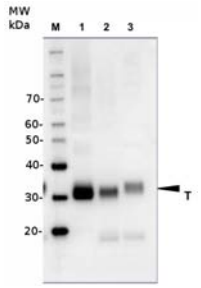
V-ATPase is very sensitive for the redox of the SDS buffer. We recommend using at least 50-100 mM DTT freshly prepared before handling the sample.

Immunostaining protocol using V-ATPase antibodies can be found here.

Selected references

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.
Migocka et al. (2018). Cucumber metal tolerance protein 7 (CsMTP7) is involved in the accumulation of Fe in mitochondria under Fe excess. Plant J. 2018 Jun 22. doi: 10.1111/tpj.14006.
Zhu et al. (2018). A comprehensive proteomic analysis of elaioplasts from citrus fruits reveals insights into elaioplast biogenesis and function. Hortic Res. 2018 Feb 7;5:6. doi: 10.1038/s41438-017-0014-x.
Lynch et al. (2017). Multifaceted plant responses to circumvent Phe hyperaccumulation by downregulation of flux through the shikimate pathway and by vacuolar Phe sequestration. Plant J. 2017 Dec;92(5):939-950. doi: 10.1111/tpj.13730.
Nagel 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.
Vera-Estrella et al. (2017). Cadmium and zinc activate adaptive mechanisms in Nicotiana tabacum similar to those observed in metal tolerant plants. Planta. 2017 Apr 28. doi: 10.1007/s00425-017-2700-1.
Xing et al. (2016). Proteome Profile of Starch Granules Purified from Rice (Oryza sativa) Endosperm. PLoS One. 2016 Dec 19;11(12):e0168467. doi: 10.1371/journal.pone.0168467.
LaMontagne et al. (2016). Isolation of Microsomal Membrane Proteins from Arabidopsis thaliana. Curr. Protoc. Plant Biol. 1:217-234. doi: 10.1002/cppb.20020.
Barkla et al. (2016). Single-cell-type quantitative proteomic and ionomic analysis of epidermal bladder cells from the halophyte model plant Mesembryanthemum crystallinum to identify salt-responsive proteins. BMC Plant Biol. 2016 May 10;16(1):110. doi: 10.1186/s12870-016-0797-1.
Liu et al. (2016). iTRAQ-based quantitative proteomic analysis reveals the role of the tonoplast in fruit senescence. J Proteomics. 2016 Sep 2;146:80-9. doi: 10.1016/j.jprot.2016.06.031.
Wattelet-Boyer et al. (2016). Enrichment of hydroxylated C24- and C26-acyl- chain sphingolipids mediates PIN2 apical sorting at trans-Golgi network subdomains. Nat Commun. 2016 Sep 29;7:12788. doi: 10.1038/ncomms12788.
Jiskrová et al. (2016). Extra- and intracellular distribution of cytokinins in the leaves of monocots and dicots. N Biotechnol. 2016 Jan 8. pii: S1871-6784(16)00002-9. doi: 10.1016/j.nbt.2015.12.010

Application example



10 µg of total protein from samples such as *Arabidopsis thaliana* leaf **(1)** , *Hordeum vulgare* leaf **(2)**, *Zea mays* leaf **(3)** were extracted with Protein Extraction Buffer PEB (AS08 300). Samples were diluted with 1X sample buffer (NuPAGE LDS sample buffer (Invitrogen) supplemented with 50 mM DTT and heat at 70°C for 5 min and keept on ice before loading. Protein samples were separated on 4-12% Bolt Plus gels, LDS-PAGE and blotted for 70 minutes to PVDF using tank transfer. Blots were blocked immediately following transfer in 2% blocking reagent or 5% non-fat milk dissolved 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 (in blocking reagent) for 1h at room temperature with agitation. The antibody solution was decanted and the blot was rinsed briefly twice, and then washed 1x15 min and 3x5 min with 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, Agrisera) diluted to 1:25 000 in blocking reagent for 1h at room temperature with agitation. The blots were washed as above. The blot was developed for 5 min with chemiluminescent detection reagent, according the manufacturers instructions. Images of the blots were obtained using a CCD imager (VersaDoc MP 4000) and Quantity One software (Bio-Rad). Exposure time was 30 seconds.