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Product no AS05 086

UGPase | UDP-glucose pyrophosphorylase (cytoplasm marker)

Product information

Immunogen	Recombinant overexpressed and purified from *E.coli* UGPase Arabidopsis thaliana UGPase, UniProt: A0A1I9LT02 TAIR: AT3G03250
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 the tubes briefly prior to opening them to avoid any losses that might occur from material adhering to the cap or sides of the tube.
Additional information	Cellular [compartment marker] of cytoplasm, UGPse is a cytoplasmic protein Martz et al. (2002) This product can be sold containing ProClin if requested.

Application information

Recommended dilution	1 : 1500 (IL), 1 : 1000-1 : 5000 (WB)
Expected | apparent MW	51,6 kDa
Confirmed reactivity	*Arabidopsis thaliana, Brassica rapa, Capsicum annuum, Fortunella margarita* Swingle*, Citrus sinensis, Cucumis sativus, Festuca arundinacea, Hordeum vulgare, Lycopersicum esculentum, Lycopersicum chilense, Malus x domestica Borkh. c.v. Fuji,, Marchantia polymorpha, Medicago truncatula, Mesemryanthenum crystallinum, M.vaginalis, Nicotiana benthamiana, Nicotiana tabacum, Oryza sativa, Phaseolus vulgaris, Picea glauca, Populus sp., Solanum lycopersicum, Solanum tuberosum, Solanum sogarandinu, Triticum aestivu, Zea mays*
Predicted reactivity	*Amorpha fruticosa, Bambusa oldhamii, Brachypodium distachyon, Brassica pekinensis, Capsella rubella, Cucumis melo, Eucalyptus grandis, Glycine max, Glycine soja, Gossipium hirsutum, Jatropha curcas, Pinus taeda, Populus tremula, Ricinus communis, Saccharum officinarum, Sorghum bicolor, Theobroma cacao, Zea mays, Vitis vinifera* Species of your interest not listed? Contact us
Not reactive in	*C. merolae*, diatoms
Additional information	This antibody detectes 1 ng of UGPase in a western blot and reacts with both cytosolic isoforms only which have similar MW of ca. 52 kDa in *Arabidopsis thaliana.* For using this antibody on *Solanum lycopersicum*, 6M urea requires to be included in extraction and loading buffers.
Selected references	Pan et al. (2021) Post-Golgi Trafficking of Rice Storage Proteins Requires the Small GTPase Rab7 Activation Complex MON1-CCZ1, Plant Physiology, 2021;, kiab175, https://doi.org/10.1093/plphys/kiab175 Li et al. (2021) Isolation and comparative proteomic analysis of mitochondria from the pulp of ripening citrus fruit. Hortic Res. 2021 Feb 1;8(1):31. doi: 10.1038/s41438-021-00470-w. PMID: 33518707; PMCID: PMC7848011. Li et al. (2020). N-terminal acetylation stabilizes SIGMA FACTOR BINDING PROTEIN 1 involved in salicylic acid-primed cell death. Plant Physiol. 2020 Mar 5. pii: pp.01417.2019. doi: 10.1104/pp.19.01417. Ren et al. (2020). GPA5 Encodes a Rab5a Effector Required for Post-Golgi Trafficking of Rice Storage Proteins. Plant Cell. 2020 Jan 16. pii: tpc.00863.2019. doi: 10.1105/tpc.19.00863. Ge et al. (2019). The NIN-like protein 5 (ZmNLP5) transcription factor is involved in modulating the nitrogen response in maize. Plant J. 2019 Dec 2. doi: 10.1111/tpj.14628.

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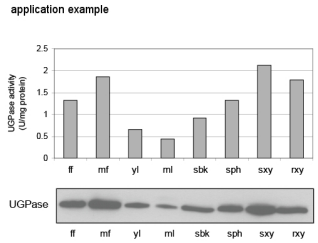
UGPase was used as a negative control for cytoplasm contamination in chloroplast fraction.

Total protein (first 2 lanes to the left) or chloroplast protein (2 lanes to the right) of *Arabidopsis thaliana* were extracted with 100 mM Tris–HCl, pH 8.0, 150 mM NaCl, 1 mM EDTA, 0.5% Triton X-100, 1 mM DTT, 1 mM PMSF, protease inhibitor cocktail, denatured with Laemmli buffer (62.5 mM Tris–HCl pH 6.8, 2% SDS, 10% glycerol, 100 mM DTT, 0.1% -mercaptoethanol) at 95°C 5 min and separated on 8% SDS-PAGE and blotted 1h to PVDF, using wet transfer. Blot was blocked with 5% milk for 1h/RT or 4°C/ON with agitation. Blot was incubated in the primary antibody at a dilution of 1: 2 000 for 1h/RT with agitation in TBS-T. The antibody solution was decanted and the blot was washed 3 times for 10 min in TBS-T at RT with agitation. Blot was incubated in Calbiochem matching secondary antibody (anti-rabbit IgG horse radish peroxidase conjugated) diluted to 1:25 000 in for 1h/RT with agitation. The blot was washed as above and developed for 10 min with Clarity Western ECL Substrate (Biorad) and visualised with chemiluminescence CCD camera Fluorchem SP (Gel Biosciences). Exposure time was 1-5 minutes.

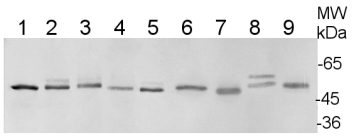
This antibody is required to be used on chloroplast fraction. There is no signal in the total cell extract.

Courtesty of Dr. Aleksandra Kwaśnik, Warsaw University, Poland



A 1-year-old greehouse grown plant was dissected into different tissues, which were then used for enzyme assays and immunoblot analyses. Equal amounts of total protein (7.5 µg) were loaded on each lane. SDS-PAGE was run on a 7.5% gel. Immunoblot was done using PVDF transfer membrane. Primary antibodies against barley UGPase were used in 1: 1000 dilution. Secondary antibodies (Rabbit IgG, HRP conjugated) were used at 1:10 000.

ff - female flower, mf - male flower, yl - young leaf, ml - mature leaf, sbk - stem bark, sph - stem phloem and cambium, sxy - stem xylem, rxy - root xylem



15 µg of total soluble protein extract from leaves and stems of *Solanum tuberosum* **(1)**, *Solanum sogarandinum* **(2)**, *Lycopersicum esculentum* **(3)**, *Lycopersicum chilense* **(4)** , *Arabidopsis thaliana* **(5)** , *Cucumis sativus* **(6)** , *Festuca arundinacea* **(7)** , *Nicotiana tabacum* **(8)** and *Capsicum annuum* **(9)** were separated on **10% SDS-PAGE** and blotted onto **nitrocellulose .** After blocking with 5% milk in TBST , blots were incubated with the primary antibody at a dilution of **1:1500** in TBST for 1h at room temperature. Following incubation and wash steps, blots were incubated with secondary Anti-Rabbit IgG , Alkaline Phosphatase Conjugate for 1 hour at a dilution of 1:40000 . Blots were developed with the alkaline phosphatase detection system using **NBT**/**BCIP**.

Courtesy of Bartosz Szabala, Institute of Plant Genetics, Polish Academy of Science .